

# **PRE-BOARD EXAMINATION DEHRADUN REGION**

## **CLASS X SOCIAL SCIENCE (087)**

### **MARKING SCHEME**

#### **SECTION A-HISTORY**

1. B) It occurred between 1845 to 1849, causing around 1 million deaths due to starvation and forcing another 2 million to emigrate.

For Visually Impaired candidates

Answer: c) Promoted both trade and cultural exchange across Asia, Europe, and Africa.

2. Answer: B
3. Answer: B

For Visually Impaired candidates

**Answer: B**

4. Ans: D) Bible
5. Until the nineteenth century, poverty and hunger were common in Europe. Cities were crowded and deadly diseases were widespread. Religious conflicts were common, and religious dissenters were persecuted. Thousands therefore fled Europe for America.
6. **A**  
Nationalism spreads when people begin to believe that they are all part of the same nation. They discover some unity that binds them together. History, fiction folklore songs, popular pen and symbols all plays a part in the spread of nationalism.

The nationalist histories urged the readers to take pride in India's great achievements in the past and struggle to change the miserable conditions of life under British rules. In the 19<sup>th</sup> century the Indian nationalists began recording folk song sung by bards and they toured to different villages together folk songs and legends.

They believe the tales gave true picture of traditions and culture that has been corrupted and damaged by outsiders. Indians began to look into the past to discover India's greatest achievements. They wrote about the glorious developments in ancient times when art and architecture, science and mathematics, religion and culture, law and philosophy, crafts and trade had flourished.

OR

**6 B**

- Satyagraha stressed on the power of truth and the need to search for truth.
- It advocated that for the struggle against injustice and the right cause, the use of physical force was not necessary to fight the oppressor.

- One can win the oppressor by appealing to the conscience. Oppressor should be made to see the truth.
- According to Gandhiji, Satyagraha is the most effective method of protest. He believed that Satyagraha could unite all Indians.

Any three points

#### 7. A

The first clear expression of nationalism came with the French Revolution in 1789. France was a full-fledged territorial state in 1789 under the rule of an absolute monarch.

- I) The political and constitutional changes that came in the wake of the French Revolution led to the transfer of sovereignty from the monarchy to a body of French citizens.
- II) From the very beginning the French revolutionaries introduced various measures and practices that could create a sense of collective identity amongst the French people.
- III) The ideas of la Patrie that is the fatherland and le citoyen that is the citizen emphasize the notion of a unified community enjoying equal rights under a constitution.
- IV) A new French flag the tricolour was chosen to replace the former royal standard.
- V) The Estates general was elected by the body of active citizens and renamed the National Assembly.
- VI) New hymns were composed, oaths taken and martyrs commemorated, all in the name of the nation.
- VII) The revolutionaries further declared that it was the mission and the destiny of the French nation to liberate the people of Europe from despotism.

Any five points.

OR

#### 7 B

- a. Women from many parts of Europe like Germany, Italy and Poland actively supported the liberals demanding constitutional monarchy with national unification.
- b. They too join their demands for political rights like suffrage along with the struggle of the liberals. But in spite of their active participation, extension of political rights to them remained a controversial issue.
- c. They took advantage of the unrest in Europe to push their demands for freedom of press and association and creation of a nation state.
- d. They even form their own political associations and founded their newspapers.
- e. They held political meetings and stage demonstrations to gain support to their demands. But they were denied rights during the Assembly Elections. When the Frankfurt Parliament was being convened in the St. Paul Church, they were granted admission merely as spectators.

8. a) The author of Gulamgiri (1871) was **Jyotiba Phule**, the Maratha pioneer of 'low caste' protest movements.

- b) Jyotiba Phule was a pioneer of 'low caste' protest movements in Maharashtra. He strongly criticised the injustices of the caste system in his book Gulamgiri (1871). His writings exposed the exploitation of lower castes and inspired people to fight against caste discrimination.
- c) Kashibaba, a Kanpur millworker, in his Chhote Aur Bade Ka Sawal (1938), highlighted the links between caste and class exploitation, showing how social and economic inequalities were interconnected.

9. I) Calcutta

II) Dandi, Gujarat

FOR VISUALLY IMPAIRED CANDIDATES:

Answer:

I) Nagpur session December 1920.

II) Amritsar, Punjab

## SECTION B- GEOGRAPHY

10. Answer: a)

11. Answer: C. A is true but R is false.

12. Answer: A. Both A and R are true and R is the correct explanation of A.

13. Answer: a) Wheat

14. Answer: B. Both A and R are true but R is not the correct explanation of A.

15. Answer: b) TISCO

16. Answer: The Indian wildlife protection act was implemented in 1972. And all India list of protected animals was published. It's main objectives are as follows:

- i) To protect the remaining population of the endangered species by banning hunting, giving legal protection to their habitats and stopping trade in wildlife.
- ii) The central and state governments established national parks and wildlife sanctuaries.
- iii) The central government also announced various projects like project tiger and project rhino.

Any two points.

OR

Hint: I would protect its habitat, regulate hunting, promote breeding programs, raise public awareness, and collaborate with local communities to ensure long-term survival and prevent further decline.

Elaborate these points in context of the question or any other relevant points

17. Answer: The main initiative include:

- i) Land reforms: collectivisation, consolidation of land holdings, cooperation and abolition of Zamindari.
- ii) Agricultural reforms: Green revolution and white revolution.
- iii) Land development programmes: provisions for crop insurance against drought, flood, cyclone etc., establishment of Grameen banks, cooperative societies, and banks for providing loans.
- iv) Issuing of Kisan Credit Card and personal accident insurance scheme etc.
- v) Special weather bulletins and agricultural programs for farmers on radio and television.
- vi) Government announce minimum support price (MSP) and remunerative and procurement prices to check exploitation.
- vii) The government provides HYV seeds and fertilizers.

Any five from these or any other relevant point.

OR

Hint: Digital tools and modern irrigation improve monitoring, reduce water waste, and boost yields, making rice farming more efficient and climate-resilient.

Elaborate these points in context of the question or any other relevant points

18. Answers:

1. The first International Earth Summit took place in June 1992 at Rio de Janeiro, Brazil.
2. Sustainable development is the development that aims to meet the needs of the present **without compromising the ability of future generations** to meet their own needs. It focuses on a balance between **environmental protection, economic growth, and social well-being**.
3. Agenda 21 is a global plan of action adopted at the Rio Earth Summit in 1992. Its main objective is to achieve sustainable development by combating environmental damage, poverty, and disease through global cooperation. One of its key goals is that every local government should prepare its own local Agenda 21.

19. On map

For visually impaired:

Answer:

1. Tehri Dam
2. Iron ore mines
3. Haldia sea port or Shyama Prasad Mookerjee sea port.

### SECTION C-Democratic Politics

20. A). Both A and R are true and R is the correct explanation of A

21. a) Union Government

22. b) Secular

23. A. Both A and R are true and R is the correct explanation of A

24. Answer: It is true that the caste factor has still not disappeared from our society:

- i) Most people marry within their own cast or tribe.
- ii) Untouchability has not ended despite provisions in the constitution.
- iii) Effects of centuries of advantages to upper caste and disadvantages to lower caste continue to be felt today.
- iv) Large number of low-caste people still do not have access to education.
- v) Caste is still linked to economic and social status.

Any two points to be elaborated.

25. Answer:

- i) Democracy provides fundamental rights to all its citizens.
- ii) Democratic government is answerable to the people.
- iii) It provides people the right to change the government after a fixed period if its function is not up to the expectation.
- iv) It provides the right for peaceful demonstration.
- v) It reduces the possibility of conflict and thus maintains social harmony.

Any two points to be elaborated.

26. Answer: Every expression of social division in politics does not lead to disasters but it is beneficial too.

In a democracy political expression of social divisions is very normal and can be healthy. In the cases of India and Belgium it has been observed that social diversity is can be accommodated in a very positive manner.

But a positive attitude towards diversity and a willingness to accommodate it do not come about easily.

- i) People who feel marginalised, deprived and discriminated have to fight against the injustices.
- ii) Such a fight often takes the democratic path voicing their demands in a peaceful and constitutional manner.
- iii) Seeking of fear position through elections.
- iv) Sometimes social differences can take the form of unexceptable level of social inequality and injustice. The struggle against such in equalities sometimes take the path of violence and defiance of State Power. However history shows that democracy is the best way to fight for recognition and also to accommodate diversity.
- v) Relations between Tamils and sehali became strained.

Any three points or other relevant points.

OR

The main elements of the power sharing model evolved in Belgium are:

- i) Constitution prescribes that the number of Dutch and French speaking ministers shall be equal in the central government.
- ii) Some special laws require the support of majority of members from each linguistic group. Thus, no single community can make decision unilaterally.
- iii) Many powers of the central government have been given to state governments of the two regions of the country.
- iv) The state governments are not subordinated to the central government.
- v) Brussels had a separate government in which both the communities have equal representation. The French-speaking people accepted equal representation in Brussels because the Dutch speaking community has accepted equal representation in the central government.
- vi) Apart from the central and the state government there is a third kind of government called the community government.
- vii) This community government is elected by the people belonging to one language community such as- Dutch, French and German speaking. This government has the power regarding cultural, educational and language related issues.

Any three points or any other relevant points.

27. Answer:

Decentralization when power is taken from Central and state governments and is given to local government it is called decentralization. The constitution was amended in 1992 to make the third tier government which made democracy more powerful and effective.

- i) Now it is mandatory to hold regular elections to local government bodies.
- ii) At least one third of all positions and seats are reserved for women.
- iii) An independent institution called state election commission has been created in each state to conduct Panchayat and municipal elections.
- iv) The state governments are required to share some powers and revenue with local government bodies.

OR

The creation of linguistic States was the first and the major test for democratic politics in our country.

- i) In 1947, the boundaries of several old states of India was changed in order to create new States. This was done to ensure that people who spoke the same language lived in the same state.
- ii) Some states were created not on the basis of language but to recognise differences based on culture, ethnicity or geography. These include states like Nagaland, Uttarakhand and Jharkhand.

- iii) When the demand for the formation of a states on the basis of language was raised, some national leaders feared that it would lead to the disintegration of the country. The central government resisted linguistic States for some time.
- iv) But, later on the experience has shown that the formation of linguistic States has actually made the country more united.
- v) It has also made administration easier.

28. Answer:

- i) integral humanism and Antyodaya.
- ii) Cultural nationalism (or Hindutva) is an important element in its conception of Indian nationhood and politics. It wants full territorial and political integration of Jammu and Kashmir with India, a uniform civil code for all people living in country irrespective of their religion and ban on religious conversions.
- iii) Shyama Prasad Mukherjee

## SECTION D-ECONOMICS

29. A. Both A and R are true and R is the correct explanation of A

30. d) More labour of work.

31. d) A-4, B-3, C-1, D-2

32. d) Collateral

33. c) Multi-National Corporation

34. B) Integration

35. Answer:

Different persons could have different as well as conflicting notions of a country's development. In fact 2 persons or groups of persons may see things which are conflicting.

To get more electricity industrialist may want more dams. But, this may submerge the land and disturb the lives of people who are displaced. Such as -tribes. They might resent this and may prefer small check Dams or tanks to irrigate their land.

OR

- i. Infant Mortality Rate (or IMR) indicates the number of children that die before the age of one year as a proportion of 1000 live children born in that particular year.
- ii. Literacy Rate measures the proportion of literate population in the 7-and-above age group.
- iii. Net Attendance Ratio is the total number of children of age group of 15-17 years attending school as a percentage of total number of children in the same age group.

36. Answer:

1. Technology- Rapid improvement in technology has been one major factor that has stimulated the globalisation process. For instance, the past fifty years have seen several improvements in transportation technology. This has made much faster delivery of goods across long distances possible at lower costs.

2. The development in Information and Communication Technology- In recent times, technology in the areas of telecommunications, computers, Internet has been changing rapidly. Telecommunication facilities (telegraph, telephone including mobile phones, fax) are used to contact one another around the world, to access information instantly, and to communicate from remote areas. This has been facilitated by satellite communication devices. As you would be aware, computers have now entered almost every field of activity. You might have also ventured into the amazing world of internet, where you can obtain and share information on almost anything you want to know. Internet also allows us to send instant electronic mail (e-mail) and talk (voice-mail) across the world at negligible costs.

3. Liberalisation of foreign trade and foreign investment policy- Removing barriers or restrictions set by the government is what is known as liberalisation. With liberalisation of trade, businesses are allowed to make decisions freely about what they wish to import or export. The government imposes much less restrictions than before and is therefore said to be more liberal.

OR

1. Opening up of business throughout the world

2. Buying and selling of goods to and from any location in the world as per convenience.

3. Removal of differences between domestic and foreign market, which is often happens automatically.

4. Locating production or other facilities anywhere in the world depending upon business opportunities and not on consideration of nationalities.

5. Sourcing factors of production such as raw material, capital or manpower from anywhere in the world.

37. Answer: Banks plays important role in regarding the money except from public.

- i. The keep money of the public in its safe custody.
- ii. They give interest on the deposited money to the public.
- iii. Bank use the major portion of deposits to extend loans. These loans are then recovered with an interest.
- iv. This interest is usually more than the interest banks paid to the public on their savings. The margin in the interest is banks' profit.
- v. It is easy for individuals to get credit who have savings and current account in the banks.

OR

The three important terms of credit are:

- i. Interest Rate: it is interest that borrower pays to the bank. An interest component is added to the principal that the borrower pays to the bank as loan payment installment.

- ii. Collateral: An asset which is owned by the borrower and is used as a guarantee to a lender until the loan is repaid is called the collateral. Land, house, vehicle, livestock, deposit with banks, insurance policy, gold, etc. are examples of assets that can be kept as collateral. If the borrower fails to repay the loan the lender reserves the right to sell the collateral to obtain payment.
- iii. Documentation: The transaction between the lender and the borrower are put on record by documenting it. It includes rate of interest, tenure, collateral and mode of repayment. The terms of credit vary from one loan agreement to another and also on the nature of the lender and the borrower.

38. Answer:

The central government in India made a law implementing the Right to Work in about 625 districts of India. It is called Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MGNREGA 2005).

Under MGNREGA 2005, all those who are able to, and are in need of, work in rural areas are guaranteed 100 days of employment in a year by the government. If the government fails in its duty to provide employment, it will give unemployment allowances to the people. The types of work that would in future help to increase the production from land will be given preference under the Act.

OR

#### **Organised Sector:**

- Covers those enterprises or places of work where the terms of employment are regular and therefore, people have assured work.
- They are registered by the government and have to follow its rules and regulations which are given in various laws such as the Factories Act, Minimum Wages Act, Payment of Gratuity Act, Shops and Establishments Act etc.
- It has some formal processes and procedures. Some of these people may not be employed by anyone but may work on their own but they too have to register themselves with the government and follow the rules and regulations.
- Workers in the organised sector enjoy security of employment.
- They are expected to work only a fixed number of hours. If they work more, they have to be paid overtime by the employer. They also get several other benefits from the employers.
- They get paid leave, payment during holidays, provident fund, gratuity etc.
- They are supposed to get medical benefits and, under the laws, the factory manager has to ensure facilities like drinking water and a safe working environment.
- When they retire, these workers get pensions as well.

#### **Unorganised Sector:**

- The unorganised sector is characterised by small and scattered units which are largely outside the control of the government.
- There are rules and regulations but these are not followed.
- Jobs here are low-paid and often not regular.

- There is no provision for overtime, paid leave, holidays, leave due to sickness etc.
- Employment is not secure.
- People can be asked to leave without any reason.
- When there is less work, such as during some seasons, some people may be asked to leave.
- A lot also depends on the whims of the employer. This sector includes a large number of people who are employed on their own doing small jobs such as selling on the street or doing repair work.
- Similarly, farmers work on their own and hire labourers as and when they require.

Mention five-five points of both sectors.

## PRE-BOARD EXAMINATION/ प्री-बोर्ड परीक्षा (2025-26)

Class: X SOCIAL SCIENCE-Code-087 / कक्षा: 10 सामाजिक विज्ञान-कोड-087

Time/समय: 3 Hours/घंटे

Maximum Marks/अधिकतम अंक: 80

### General Instructions/सामान्य निर्देश:

1. There are 38 questions in the question paper. All questions are compulsory.
2. The question paper has four sections – A-History, B-Geography, C-Political Science, and D-Economics.
3. Each Section is of 20 marks and has MCQs, VSA, SA, LA, and CBQs (Section A, B, and C) and some map skill-based questions.
4. Very Short Answer (VSA) Type Questions, carry 2 marks each. Answers to each question should not exceed 40 words.
5. Short Answer (SA) Type Questions, carry 3 marks each. Answers to each question should not exceed 60 words.
6. Long Answer (LA) Type Questions, carry 5 marks each. Answers to each question should not exceed 120 words.
7. There are Case-Based Questions (CBQ) with three sub-questions and are of 4 marks each. Answers to this question should not exceed 100 words.
8. The map-based questions, carry 5 marks with two parts- Q.9 in Section A-History (2 marks) and Q.19 in Section B-Geography (3 marks).
9. There is no overall choice in the question paper. However, an internal choice has been provided in a few questions. Only one of the choices in such questions must be attempted.
10. In addition to this, **NOTE** that a separate question has been provided for Visually Impaired candidates in lieu of questions having visual inputs, map etc. **Such questions are to be attempted by Visually Impaired candidates only.**

1. प्रश्न पत्र में 38 प्रश्न हैं। सभी प्रश्न अनिवार्य हैं।
2. प्रश्न पत्र में चार खंड हैं - A- इतिहास, B- भूगोल, C- राजनीति विज्ञान और D- अर्थशास्त्र।
3. प्रत्येक अनुभाग 20 अंकों का है और इसमें MCQ, VSA, SA, LA, और CBQ (अनुभाग A, B, और C) और कुछ मानचित्र कौशल-आधारित प्रश्न हैं।

4. अति लघु उत्तरीय (VSA) प्रकार के प्रश्न, प्रत्येक 2 अंक के हैं। प्रत्येक प्रश्न का उत्तर 40 शब्दों से अधिक नहीं होना चाहिए।
5. लघु उत्तरीय (SA) प्रकार के प्रश्न, प्रत्येक 3 अंक के हैं। प्रत्येक प्रश्न का उत्तर 60 शब्दों से अधिक नहीं होना चाहिए।
6. दीर्घ उत्तरीय (LA) प्रकार के प्रश्न, प्रत्येक 5 अंक के हैं। प्रत्येक प्रश्न का उत्तर 120 शब्दों से अधिक नहीं होना चाहिए।
7. केस-आधारित प्रश्न (CBQ) हैं जिनमें तीन उप-प्रश्न हैं और प्रत्येक 4 अंकों का है। इस प्रश्न का उत्तर 100 शब्दों से अधिक नहीं होना चाहिए। 8. मानचित्र-आधारित प्रश्न 5 अंकों के हैं और इनके दो भाग हैं - खंड क में प्रश्न 9- इतिहास (2 अंक) और खंड ख में प्रश्न 19- भूगोल (3 अंक)।
9. प्रश्नपत्र में कोई समग्र विकल्प नहीं है। हालाँकि, कुछ प्रश्नों में आंतरिक विकल्प दिए गए हैं। ऐसे प्रश्नों में से केवल एक विकल्प का ही प्रयास करना होगा।
10. इसके अतिरिक्त, कृपया ध्यान दें कि दृश्य इनपुट, मानचित्र आदि वाले प्रश्नों के स्थान पर दृष्टिबाधित उम्मीदवारों के लिए एक अलग प्रश्न दिया गया है। ऐसे प्रश्न केवल दृष्टिबाधित उम्मीदवारों द्वारा ही हल किए जाने हैं।

## SECTION A-HISTORY / खंड A-इतिहास

1. The illustration shown is from the London News depicting the Irish Potato Famine. Which of the following statements is correct about this famine? . दिखाया गया चित्र लंदन न्यूज से है जिसमें आयरिश आलू अकाल को दर्शाया गया है। इस अकाल के बारे में निम्नलिखित में से कौन सा कथन सही है?

A) It occurred between 1825 to 1830 and caused the death of 5 million people

in Ireland. यह अकाल 1825 से 1830 के बीच हुआ और इसके कारण

आयरलैंड में 50 लाख लोगों की मृत्यु हुई।

B) It occurred between 1845 to 1849, causing around 1 million deaths due to

starvation and forcing another 2 million to emigrate. यह अकाल 1845 से

1849 के बीच हुआ, जिसके कारण लगभग 10 लाख लोगों की भुखमरी से मृत्यु हुई और 20 लाख

लोगों को पलायन करने के लिए मजबूर होना पड़ा।

C) It was caused by drought in Ireland and led only to food shortage, not migration. यह आयरलैंड में सूखे के कारण हुआ और इससे केवल खाद्यान्न की कमी हुई, प्रवास की नहीं।

D) It occurred between 1900 to 1910, and was confined only to rural villages in Ireland. यह अकाल 1900 से 1910 के बीच हुआ और आयरलैंड के केवल ग्रामीण गाँवों तक ही सीमित था।



**Note: The following question is for visually impaired candidates only in lieu of Q.No. 1**

**नोट: निम्नलिखित प्रश्न केवल दृष्टिबाधित उम्मीदवारों के लिए प्रश्न संख्या 1 के स्थान पर है।**

The Silk Routes are considered significant in world history mainly because they रेशम मार्गों को विश्व इतिहास में मुख्यतः इसलिए महत्वपूर्ण माना जाता है क्योंकि वे::

A) Linked only China with India. केवल चीन को भारत से जोड़ते थे।

B) Served as exclusive routes for Buddhist monks. बौद्ध भिक्षुओं के लिए विशेष मार्ग के रूप में कार्य करते थे।

C) Promoted both trade and cultural exchange across Asia, Europe, and Africa. एशिया, यूरोप और

अफ्रीका में व्यापार और सांस्कृतिक आदान-प्रदान को बढ़ावा दिया।

D) Were discovered only in the fifteenth century. पंद्रहवीं शताब्दी में ही खोजे गए थे।

2. Noodles from China are believed to have influenced which European dish through long-distance cultural exchange? माना जाता है कि चीन के नूडल्स ने लंबी दूरी के सांस्कृतिक आदान-प्रदान के माध्यम से किस यूरोपीय व्यंजन को प्रभावित किया?

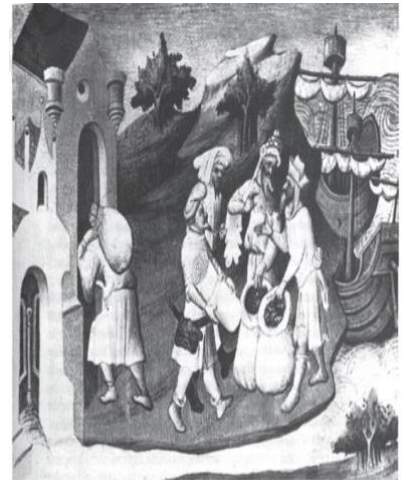
A) Pizza पिज़्ज़ा

B) Spaghetti स्पेगेटी

C) Sandwich सैंडविच

D) Croissant क्रोइसैन्ट

3. In the image titled "Merchants from Venice and the Orient exchanging goods" (Book of Marvels, 15th century), what does this scene primarily illustrate? "वेनिस और पूर्व के व्यापारी वस्तुओं का आदान-प्रदान करते हुए" (बुक ऑफ़ मार्वल्स, 15वीं शताब्दी) शीर्षक वाली छवि में, यह दृश्य मुख्य रूप से क्या दर्शाता है?



A) The religious preaching of Buddhist monks. बौद्ध भिक्षुओं का

धार्मिक उपदेश।

B) The cultural and commercial interaction between Europe and Asia.

यूरोप और एशिया के बीच सांस्कृतिक और वाणिज्यिक संपर्क।

C) The introduction of maize and potatoes into Europe.

यूरोप में मक्का और आलू का आगमन।

D) The travels of Christopher Columbus. क्रिस्टोफर कोलंबस की यात्राएँ।

**Note: The following question is for visually impaired candidates only in lieu of Q.No. 3**

**नोट: निम्नलिखित प्रश्न केवल दृष्टिबाधित उम्मीदवारों के लिए प्रश्न संख्या 3 के स्थान पर है।**

Which of the following statements best explains the cultural role of the Silk Routes? निम्नलिखित में से कौन सा कथन रेशम मार्गों की सांस्कृतिक भूमिका को सबसे अच्छी तरह से समझाता है?

A) They were used only for transporting gold and silver. इनका उपयोग केवल सोने और चाँदी के परिवहन के लिए किया जाता था।

B) They facilitated the spread of religions such as Buddhism and Christianity. उन्होंने बौद्ध धर्म और ईसाई धर्म जैसे धर्मों के प्रसार में सहायता की।

C) They were restricted to land-based trade in Asia. वे एशिया में भूमि-आधारित व्यापार तक ही सीमित थे।

D) They were created after the fifteenth century. उनका निर्माण पंद्रहवीं शताब्दी के बाद हुआ।

4. Which was the first book printed by Gutenberg? गुटेनबर्ग द्वारा मुद्रित पहली पुस्तक कौन सी थी?

a. Diamond Sutra डायमंड सूत्र

b. Arthshastra अर्थशास्त्र

c. Ramcharitmanas रामचरितमानस

d. Bible बाइबिल

5. Why did thousands of people flee Europe for America in the 19<sup>th</sup> century? 19वीं शताब्दी में हजारों लोग यूरोप से अमेरिका क्यों भाग गए? (2)

6 A. "It was essential to preserve folk traditions in order to Discover one's national identity and restore a sense of pride in one's past." Support the statement in reference to India. (3)

6क. "अपनी राष्ट्रीय पहचान की खोज और अपने अतीत में गौरव की भावना को पुनः स्थापित करने के लिए लोक परंपराओं का संरक्षण आवश्यक था।" भारत के संदर्भ में इस कथन का समर्थन कीजिए।

ORअथवा

6 B. Explain the idea of Satyagraha according to Mahatma Gandhi.

6ख. महात्मा गांधी के अनुसार सत्याग्रह के विचार की व्याख्या कीजिए।

7 A. "The first Clear expression of nationalism came with the French Revolution in 1789." Examine the statement. (5)

7 क. "राष्ट्रवाद की पहली स्पष्ट अभिव्यक्ति 1789 में फ्रांसीसी क्रांति के साथ हुई।" इस कथन का परीक्षण कीजिए।

ORअथवा

7 B. Discuss the role played by the women in nationalist struggles in Europe.

7 ख. यूरोप में राष्ट्रवादी संघर्षों में महिलाओं द्वारा निभाई गई भूमिका पर चर्चा कीजिए।

8. Read the following text and answer the questions: (1+2+1)

From the late nineteenth century, issues of caste discrimination began to be written about in many printed tracts and essays. Jyotiba Phule, the Maratha pioneer of 'low caste' protest movements, wrote about the injustices of the caste system in his *Gulamgiri* (1871). In the twentieth century, B.R. Ambedkar in Maharashtra and E.V. Ramaswamy Naicker in Madras, better known as Periyar, wrote powerfully on caste and their writings were read by people all over India. Local protest movements and sects also created a lot of popular journals and tracts criticising ancient scriptures and envisioning a new and just future. Workers in factories were too overworked and lacked the education to write much about their experiences. But Kashibaba, a Kanpur millworker, wrote and published *Chhote Aur Bade Ka Sawal* in 1938 to show the links between caste and class exploitation. The poems of another Kanpur millworker, who wrote under the name of Sudarshan Chakr between 1935 and 1955, were brought together and published in a collection called *Sacchi Kavita*. By the 1930s, Bangalore cotton millworkers set up libraries to educate themselves, following the example of Bombay workers. These were sponsored by social reformers who tried to restrict excessive drinking among them, to bring literacy and, sometimes, to propagate the message of nationalism.

- a) Who was the author of *Gulamgiri* (1871)? (1)
- b) Write a short note on the contribution of Jyotiba Phule against caste discrimination. (2)
- c) What issues did Kashibaba highlight in his *Chhote Aur Bade Ka Sawal* (1938)? (1)

8. निम्नलिखित पाठ को पढ़ें और प्रश्नों के उत्तर दें: (1+2+1)

उन्नीसवीं सदी के उत्तरार्ध से, जातिगत भेदभाव के मुद्दों पर कई मुद्रित ग्रंथों और निबंधों में लिखा जाने लगा। 'निम्न जाति' विरोधी आंदोलनों के मराठा अग्रदूत ज्योतिबा फुले ने अपनी रचना गुलामगिरी (1871) में जाति व्यवस्था के अन्याय के बारे में लिखा। बीसवीं सदी में, महाराष्ट्र में बी.आर. अंबेडकर और मद्रास में ई.वी. रामास्वामी नायकर, जिन्हें पेरियार के नाम से जाना जाता है, ने जाति पर सशक्त लेखन किया और उनके लेखन को पूरे भारत में लोगों ने पढ़ा। स्थानीय विरोधी आंदोलनों और संप्रदायों ने भी प्राचीन धर्मग्रंथों की आलोचना करते हुए और एक नए और न्यायपूर्ण भविष्य की कल्पना करते हुए कई लोकप्रिय पत्रिकाएँ और ग्रंथ प्रकाशित किए। कारखानों में काम करने वाले मजदूरों पर बहुत अधिक काम का बोझ था और उनके पास अपने अनुभवों के बारे में ज्यादा लिखने के लिए शिक्षा का अभाव था। लेकिन कानपुर के एक मिल मजदूर काशीबाबा ने जाति और वर्ग शोषण के बीच संबंधों को दर्शाने के लिए 1938 में "छोटे और बड़े का सवाल" लिखा और प्रकाशित किया। 1935 और 1955 के बीच सुदर्शन चक्र के नाम से लिखने वाले कानपुर के एक अन्य मिल मजदूर की कविताओं को एकत्रित

करके सच्ची कविताएँ नामक एक संग्रह में प्रकाशित किया गया। 1930 के दशक तक, बंगलौर के सूती मिल मजदूरों ने बंबई के मजदूरों की तरह, खुद को शिक्षित करने के लिए पुस्तकालय स्थापित किए। ये पुस्तकालय समाज सुधारकों द्वारा प्रायोजित थे, जिन्होंने उनमें अत्यधिक शराब पीने पर प्रतिबंध लगाने, साक्षरता लाने और कभी-कभी राष्ट्रवाद के संदेश का प्रचार करने का प्रयास किया।

क) गुलामगिरी (1871) के लेखक कौन थे? (1)

ख) जातिगत भेदभाव के विरुद्ध ज्योतिबा फुले के योगदान पर एक संक्षिप्त टिप्पणी लिखिए। (2)

ग) काशीबाबा ने अपने छोटे और बड़े का सवाल (1938) में किन मुद्दों पर प्रकाश डाला? (1)

### MAP SKILL-BASED QUESTION मानचित्र कौशल-आधारित प्रश्न (2)

9. Label and locate the following on the political map of India.

- I) A place where a congress session was held where Mahatma Gandhi convinced other leaders to start the Non-cooperation movement in September 1920.
- II) A place where Gandhiji began Civil Disobedience Movement by breaking the salt law.

9. भारत के राजनीतिक मानचित्र पर निम्नलिखित को नामांकित करें और उनकी स्थिति ज्ञात करें।

I) वह स्थान जहाँ कांग्रेस का अधिवेशन हुआ था जहाँ महात्मा गांधी ने अन्य नेताओं को सितंबर 1920 में असहयोग आंदोलन शुरू करने के लिए राजी किया था।

II) वह स्थान जहाँ गांधीजी ने नमक कानून तोड़कर सविनय अवज्ञा आंदोलन शुरू किया था।

**Note: The following question is for visually impaired candidates only in lieu of Q.No. 9.**

**नोट: निम्नलिखित प्रश्न केवल दृष्टिबाधित अभ्यर्थियों के लिए प्रश्न संख्या 9 के स्थान पर है।**

Question:

- I) Write the name of the congress session where a compromise was worked out between congress leaders in December 1920 and Non-cooperation movement was adopted.
- II) Mention the place where infamous Jallianwala Bagh incident happened.

प्रश्न:

I) उस कांग्रेस अधिवेशन का नाम लिखिए जहाँ दिसंबर 1920 में कांग्रेस नेताओं के बीच समझौता हुआ और असहयोग आंदोलन अपनाया गया।

II) उस स्थान का उल्लेख कीजिए जहाँ कुख्यात जलियाँवाला बाग कांड हुआ था।

## SECTION B- GEOGRAPHY खंड B- भूगोल

Question: Observe the column-I and column-II and choose the correct option of matching:

प्रश्न: स्तंभ-I और स्तंभ-II का अवलोकन कीजिए और मिलान का सही विकल्प चुनिए:

| Column-I |                                   | Column-II |                                                                                                                                                                                                                                |
|----------|-----------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A.       | Reserved Forests<br>आरक्षित वन    | 1.        | Forests and wastelands belonging to both government and private individuals and communities.<br>वन और बंजर भूमि जो सरकार और निजी व्यक्तियों एवं समुदायों दोनों के स्वामित्व में हैं।                                           |
| B.       | Protected forests<br>संरक्षित वन  | 2.        | Forests that are regarded as the most valuable as far as the conservation of forest and wildlife resources are concerned.<br>जहां तक वन एवं वन्यजीव संसाधनों के संरक्षण का प्रश्न है, वनों को सबसे अधिक मूल्यवान माना जाता है। |
| C.       | Unclassed forests<br>अवर्गीकृत वन | 3.        | Forest land that are protected from any further depletion.<br>वन भूमि को और अधिक क्षरण से सुरक्षित रखा गया है।                                                                                                                 |

A      B      C

- a) 2      3      1  
b) 3      2      1  
c) 1      3      2  
d) 1      2      3

11. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Resource planning in India requires matching resource development plans with national development strategies.

अभिकथन (A): भारत में संसाधन नियोजन के लिए संसाधन विकास योजनाओं का राष्ट्रीय विकास रणनीतियों के साथ मिलान आवश्यक है।

Reason (R): Resource planning is limited to identifying and mapping resources without integrating technology or institutional frameworks.

कारण (R): संसाधन नियोजन, प्रौद्योगिकी या संस्थागत ढाँचे को एकीकृत किए बिना संसाधनों की पहचान और मानचित्रण तक सीमित है।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

12. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Irrigation has also changed the cropping pattern of many regions with farmers shifting to water intensive and commercial crops. सिंचाई ने कई क्षेत्रों के फसल पैटर्न को भी बदल दिया है और किसान अधिक पानी की खपत वाली और व्यावसायिक फसलों की ओर रुख कर रहे हैं।

Reason (R): This has great ecological consequences like salinisation of the soil. इससे मिट्टी के लवणीकरण जैसे बड़े पारिस्थितिक परिणाम होते हैं।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

13. Identify the crop with the help of the following information and choose the correct option.

निम्नलिखित जानकारी की सहायता से फसल की पहचान करें और सही विकल्प चुनें।

- It is the second most important cereal crop.
- It is a Rabi crop.
- It requires a cool growing season and bright sunshine at the time of ripening.
- It requires 50 to 75 cm annual rainfall.
- यह दूसरी सबसे महत्वपूर्ण अनाज की फसल है।
- यह रबी की फसल है।
- इसे पकने के समय ठंडे मौसम और तेज धूप की आवश्यकता होती है।
- इसे 50 से 75 सेमी वार्षिक वर्षा की आवश्यकता होती है।

- a) Wheat गेहूं
- b) Maize मक्का
- c) Rice चावल
- d) Sugarcane गन्ना

14. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Firewood and Cattle dung cake energy are the example of non-conventional source of energy. जलाऊ लकड़ी और गोबर के उपले ऊर्जा, ऊर्जा के गैर-परंपरागत स्रोत के उदाहरण हैं।

Reason (R): According to one estimate more than 70 per cent energy requirement in rural households is met by these two. एक अनुमान के अनुसार ग्रामीण घरों में 70 प्रतिशत से अधिक ऊर्जा आवश्यकता इन दोनों से पूरी होती है।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

15. Which of the following is an example of a private sector industry? निम्नलिखित में से कौन सा निजी क्षेत्र के उद्योग का उदाहरण है?

- a) BHEL
- b) TISCO
- c) SAIL
- d) CIL

16 A. What were the objectives of Indian Wildlife Protection Act implemented in 1972? (3)

16 अ. 1972 में लागू भारतीय वन्यजीव संरक्षण अधिनियम के उद्देश्य क्या थे?

ORअथवा

16 B. Imagine you are a wildlife scientist tasked with saving a vulnerable species. What steps would you take to prevent it from becoming endangered or extinct, and why?"

16ख. कल्पना कीजिए कि आप एक वन्यजीव वैज्ञानिक हैं और आपको एक संकटग्रस्त प्रजाति को बचाने का काम सौंपा गया है। आप इसे संकटग्रस्त या विलुप्त होने से बचाने के लिए क्या कदम उठाएँगे और क्यों?

17 A. Suggest the initiatives taken by the government to ensure the increase in agricultural production. (5)

17 अ. कृषि उत्पादन में वृद्धि सुनिश्चित करने के लिए सरकार द्वारा उठाए गए कदमों का सुझाव दीजिए।

ORअथवा

17 B. How can digital technology and modern irrigation methods transform traditional rice farming in regions with suitable geography? Evaluate their role in improving yield and efficiency.

17 ख. डिजिटल तकनीक और आधुनिक सिंचाई विधियाँ उपयुक्त भौगोलिक क्षेत्रों में पारंपरिक चावल की खेती को कैसे बदल सकती हैं? उपज और दक्षता में सुधार लाने में उनकी भूमिका का मूल्यांकन कीजिए।

18. Read the following text and answer the questions: (1+2+1)

In June 1992, more than 100 heads of states met in Rio de Janeiro in Brazil, for the first International Earth Summit. The Summit was convened for addressing urgent problems of environmental protection and socioeconomic development at the global level. The assembled leaders signed the Declaration on Global Climatic Change and Biological Diversity. The Rio Convention endorsed the global Forest Principles and adopted Agenda 21 for achieving Sustainable Development in the 21st century.

It is the declaration signed by world leaders in 1992 at the United Nations Conference on Environment and Development (UNCED), which took place at Rio de Janeiro, Brazil. It aims at achieving global sustainable development. It is an agenda to combat environmental damage, poverty, disease through global co-operation on common interests, mutual needs and shared responsibilities. One major objective of the Agenda 21 is that every local government should draw its own local Agenda 21.

1. When was first International Earth Summit took place? (1)
2. What is sustainable development? (2)
3. What is Agenda 21? (1)

18. निम्नलिखित पाठ को पढ़ें और प्रश्नों के उत्तर दें: (1+2+1)

जून 1992 में, ब्राज़ील के रियो डी जेनेरियो में 100 से अधिक राष्ट्राध्यक्ष पहले अंतर्राष्ट्रीय पृथ्वी शिखर सम्मेलन के लिए एकत्रित हुए। यह शिखर सम्मेलन वैश्विक स्तर पर पर्यावरण संरक्षण और सामाजिक-आर्थिक विकास की तात्कालिक समस्याओं के समाधान के लिए आयोजित किया गया था। एकत्रित नेताओं ने वैश्विक जलवायु परिवर्तन और जैविक विविधता पर घोषणापत्र पर हस्ताक्षर किए। रियो सम्मेलन ने वैश्विक वन सिद्धांतों का समर्थन किया और 21वीं सदी में सतत विकास प्राप्त करने के लिए एजेंडा 21 को अपनाया।

यह 1992 में ब्राज़ील के रियो डी जेनेरियो में आयोजित पर्यावरण और विकास पर संयुक्त राष्ट्र सम्मेलन (UNCED) में विश्व नेताओं द्वारा हस्ताक्षरित घोषणापत्र है। इसका उद्देश्य वैश्विक सतत विकास प्राप्त करना है। यह साझा हितों, पारस्परिक आवश्यकताओं और साझा जिम्मेदारियों पर वैश्विक

सहयोग के माध्यम से पर्यावरणीय क्षति, गरीबी और बीमारी से निपटने का एक एजेंडा है। एजेंडा 21 का एक प्रमुख उद्देश्य यह है कि प्रत्येक स्थानीय सरकार अपना स्वयं का स्थानीय एजेंडा 21 तैयार करे।

1. पहला अंतर्राष्ट्रीय पृथ्वी शिखर सम्मेलन कब हुआ था? (1)

2. सतत विकास क्या है? (2)

3. एजेंडा 21 क्या है? (1)

19. Locate and label the following on the outline map of India. भारत के रेखा मानचित्र पर निम्नलिखित को चिह्नित करें और नामांकित करें।

19.1 Salal Dam सलाल बाँध

19.2 Mumbai High Bassien oil field मुंबई हाई बेसिन तेल क्षेत्र

19.3 Sri Guru Ram Das Jee International Airport श्री गुरु रामदास जी अंतर्राष्ट्रीय हवाई अड्डा

**Note: The following question is for visually impaired candidates only in lieu of Q.No. 19.**

**नोट: निम्नलिखित प्रश्न केवल दृष्टिबाधित अभ्यर्थियों के लिए प्रश्न संख्या 19 के स्थान पर है।**

Answer the following: निम्नलिखित के उत्तर दीजिए:

19.1 Name the highest Dam of India. भारत के सबसे ऊँचे बाँध का नाम बताइए।

19.2 What is Kudremukh site famous for? कुद्रेमुख स्थल किस लिए प्रसिद्ध है?

19.3 Name one sea port of West Bengal state. पश्चिम बंगाल राज्य के एक समुद्री बंदरगाह का नाम बताइए।

## **SECTION C-DEMOCRATIC POLITICS लोकतांत्रिक राजनीति**

20. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Power-Sharing is good. सत्ता की साझेदारी अच्छी बात है।

Reason (R): It helps to reduce the possibility of conflicts between social groups. इससे सामाजिक समूहों के बीच संघर्ष की संभावना को कम करने में मदद मिलती है।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

21. Which level of government in India has the power to legislate on the 'residuary' subjects? भारत में सरकार के किस स्तर को 'अवशिष्ट' विषयों पर कानून बनाने की शक्ति प्राप्त है?

- a) Union Government केंद्र सरकार
- b) State Government राज्य सरकार
- c) Local Government स्थानीय सरकार
- d) Both (a) and (b) (a) और (b) दोनों

22. Read the given statements:

- i) India has no official religion.
- ii) All the communities have the freedom to profess and practice any religion in India.

22. दिए गए कथनों को पढ़ें:

- i) भारत का कोई आधिकारिक धर्म नहीं है।
- ii) भारत में सभी समुदायों को किसी भी धर्म को मानने और उसका पालन करने की स्वतंत्रता है।

Which one of the following constitutional terms is used for the above statements:

- a) Republic                      b) Secular                      c) Sovereign                      d) Socialist

उपरोक्त कथनों के लिए निम्नलिखित में से कौन सा संवैधानिक शब्द प्रयोग किया गया है:

- a) गणराज्य                      b) धर्मनिरपेक्ष                      c) संप्रभु                      d) समाजवादी

23. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Communist party of India-Marxist supports the Socialism and opposes Imperialism.

भारतीय कम्युनिस्ट पार्टी-माक्सवादी समाजवाद का समर्थन करती है और साम्राज्यवाद का विरोध करती है।

Reason (R): It secures the objective of socio-economic justice and opposes the new economic policy that allow free flow of foreign capital and goods. यह सामाजिक-आर्थिक न्याय के उद्देश्य को सुरक्षित करता है और विदेशी पूंजी और वस्तुओं के मुक्त प्रवाह की अनुमति देने वाली नई आर्थिक नीति का विरोध करता है।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

24. 'Caste has not still disappeared from contemporary India.' Justify the statement. (2)

‘समकालीन भारत से जाति अभी भी गायब नहीं हुई है।’ कथन का औचित्य सिद्ध कीजिए।

25. "Democracy is very important for promoting dignity and freedom of the citizens." Support the statement with arguments. (2)

“नागरिकों की गरिमा और स्वतंत्रता को बढ़ावा देने के लिए लोकतंत्र बहुत महत्वपूर्ण है।” तर्कों के साथ इस कथन का समर्थन कीजिए।

26. "In a democracy, political expression of social division is very normal and can be healthy." Justify the statement with suitable examples in context with power-sharing. (3)

“लोकतंत्र में, सामाजिक विभाजन की राजनीतिक अभिव्यक्ति बहुत सामान्य है और स्वस्थ हो सकती है।” सत्ता-बंटवारे के संदर्भ में उपयुक्त उदाहरणों के साथ इस कथन की पुष्टि कीजिए।

ORअथवा

Describe Belgium model of power-sharing. सत्ता-बंटवारे के बेल्जियम मॉडल का वर्णन करें।

27. What is the meaning of Decentralisation? Explain any four provisions that have been made towards decentralisation in India after the constitutional amendments in 1992. (5)

विकेंद्रीकरण का क्या अर्थ है? 1992 के संवैधानिक संशोधनों के बाद भारत में विकेंद्रीकरण की दिशा में किए गए किन्हीं चार प्रावधानों की व्याख्या कीजिए।

ORअथवा

“The creation of linguistic States was the first and a major test for democratic politics in our country.” Justify the statement. “भाषाई राज्यों का निर्माण हमारे देश में लोकतांत्रिक राजनीति की पहली और बड़ी परीक्षा थी।” इस कथन का औचित्य सिद्ध कीजिए।

28. Read the following text and answer the questions: (1+2+1)

Bhartiya Janata party (BJP): founded in 1980 by drawing inspiration from India's ancient culture and values and Deendayal Upadhyaya's ideas of integral humanism and Antyodaya. Cultural nationalism (or Hindutva) is an important element in its conception of Indian nationhood and politics. It wants full territorial and political integration of Jammu and Kashmir with India, a uniform civil code for all people living in country irrespective of their religion and ban on religious conversions. Its support base increase substantially in the 1990s. Earlier limited to North and West and to urban areas, party expanded its support in the south, east, the North-east and to rural areas. It came to power in 1998 as a leader of the National Democratic Alliance (NDA) including several regional parties. It emerged as the largest party with 303 members in the 2019 Lok Sabha election. Currently leads the ruling NDA government at the centre.

- i) What was the idea of Deendayal Upadhyaya? (1)
- ii) What is guiding philosophy of the BJP? (2)
- iii) BJP was founded in 1980 by reviving Bhartiya Jana Sangh. Who was the founder of Bhartiya Jana Sangh? (1)

28. निम्नलिखित पाठ को पढ़ें और प्रश्नों के उत्तर दें: (1+2+1)

भारतीय जनता पार्टी (भाजपा): इसकी स्थापना 1980 में भारत की प्राचीन संस्कृति और मूल्यों तथा दीनदयाल उपाध्याय के एकात्म मानववाद और अंत्योदय के विचारों से प्रेरणा लेकर हुई थी। सांस्कृतिक राष्ट्रवाद (या हिंदुत्व) भारतीय राष्ट्रवाद और राजनीति की इसकी अवधारणा का एक महत्वपूर्ण तत्व है। यह जम्मू-कश्मीर का भारत में पूर्ण क्षेत्रीय और राजनीतिक एकीकरण, देश में रहने वाले सभी लोगों के लिए, चाहे उनका धर्म कुछ भी हो, एक समान नागरिक संहिता और धर्मांतरण पर प्रतिबंध चाहता है। 1990 के दशक में इसका जनाधार काफी बढ़ा। पहले उत्तर और पश्चिम तथा शहरी क्षेत्रों तक सीमित रही पार्टी ने दक्षिण, पूर्व, उत्तर-पूर्व और ग्रामीण क्षेत्रों में भी अपना समर्थन बढ़ाया। यह 1998 में कई क्षेत्रीय दलों वाले राष्ट्रीय जनतांत्रिक गठबंधन (NDA) के नेतृत्व में सत्ता में आई। 2019 के लोकसभा चुनाव में 303 सदस्यों के साथ यह सबसे बड़ी पार्टी बनकर उभरी। वर्तमान में केंद्र में सत्तारूढ़ NDA सरकार का नेतृत्व कर रही है।

28.1 दीनदयाल उपाध्याय के विचार क्या थे? (1)

28.2 भाजपा का मार्गदर्शक दर्शन क्या है? (2)

28.3 भाजपा की स्थापना 1980 में भारतीय जनसंघ को पुनर्जीवित करके की गई थी। भारतीय जनसंघ के संस्थापक कौन थे? (1)

## SECTION D-ECONOMICS अर्थशास्त्र

29. Two statements are given as Assertion (A) and Reason (R). Study the statements carefully and identify the correct alternative. दो कथन अभिकथन (A) और कारण (R) दिए गए हैं। कथनों का ध्यानपूर्वक अध्ययन कीजिए और सही विकल्प चुनिए।

Assertion (A): Kerala has low Infant Mortality Rate. केरल में शिशु मृत्यु दर कम है

Reason (R): Kerala has adequate provisions of basic health and education facilities. केरल में बुनियादी स्वास्थ्य और शिक्षा सुविधाओं का पर्याप्त प्रावधान है।

Options:

A. Both A and R are true and R is the correct explanation of A. A और R दोनों सत्य हैं और R, A की सही व्याख्या है।

B. Both A and R are true but R is not the correct explanation of A. A और R दोनों सत्य हैं लेकिन R, A की सही व्याख्या नहीं है।

C. A is true but R is false. A सत्य है लेकिन R असत्य है।

D. A is false but R is true. A असत्य है लेकिन R सत्य है।

30. Which of the following is **NOT** a developmental goal for factory workers? निम्नलिखित में से कौन सा कारखाना श्रमिकों के लिए विकासात्मक लक्ष्य नहीं है?

- a) Better wages बेहतर मजदूरी
- b) Better technologies बेहतर प्रौद्योगिकियां
- c) Proper facilities for safety and security सुरक्षा और संरक्षा के लिए उचित सुविधाएं
- d) More labour of work. अत्याधिक श्रम

31. Match the columns मिलन करो:

|   | Column A                             |   | Column B                                                                                                                                                                           |
|---|--------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A | Public Sector<br>सार्वजनिक क्षेत्र   | 1 | This sector transforms one Good into another by adding more value and utility.<br>यह क्षेत्र अधिक मूल्य और उपयोगिता जोड़कर एक वस्तु को दूसरी वस्तु में परिवर्तित करता है।          |
| B | Primary Sector<br>प्राथमिक क्षेत्र   | 2 | This sector provides useful services for other sectors.<br>यह क्षेत्र अन्य क्षेत्रों के लिए उपयोगी सेवाएं प्रदान करता है।                                                          |
| C | Secondary Sector<br>द्वितीयक क्षेत्र | 3 | This sector produces goods by exploiting natural resources.<br>यह क्षेत्र प्राकृतिक संसाधनों का दोहन करके वस्तुओं का उत्पादन करता है।                                              |
| D | Tertiary Sector<br>तृतीयक क्षेत्र    | 4 | This is managed and controlled by the government to provide facilities for the people.<br>लोगों को सुविधाएं प्रदान करने के लिए इसका प्रबंधन और नियंत्रण सरकार द्वारा किया जाता है। |

Options:

- a. A-1, B-2, C-3, D-4
- b. A-4, B-1, C-3, D-2

- c. A-3, B-2, C-1 D-4
- d. A-4, B-3, C-1, D-2

32. Read the information given below and select the correct option

Rohan has taken a loan of rupees 500000 from the bank to purchase a house on 12% rate of interest. He has to submit papers of new house and salary record to the bank. What is this process called as?

नीचे दी गई जानकारी को पढ़ें और सही विकल्प चुनें।

रोहन ने 12% ब्याज दर पर घर खरीदने के लिए बैंक से 500000 रुपये का ऋण लिया है। उसे नए घर के कागजात और वेतन रिकॉर्ड बैंक में जमा करने हैं। इस प्रक्रिया को क्या कहते हैं?

- a) Interest Rate ब्याज दर
- b) Principal Amount मूल राशि
- c) Instalments किश्तें
- d) Collateral संपाश्विक

33. What is the full form of MNCs? MNCs का पूर्ण रूप क्या है?

- a) Multi-National Company बहुराष्ट्रीय कंपनी
- b) Multi-Name Company बहु-नाम कंपनी
- c) Multi-National Corporation बहुराष्ट्रीय निगम
- d) Multi-Notional Corporation बहु-काल्पनिक निगम

34. Globalisation means \_\_\_\_\_ of the domestic economy to the rest of the world. वैश्वीकरण का अर्थ है घरेलू अर्थव्यवस्था का शेष विश्व के साथ \_\_\_\_\_।

- a) Disintegration विघटन
- b) Integration एकीकरण
- c) Inviting आमंत्रण
- d) Degrading अवनति

35. "What may be development for one may not be development for the other. It may even be destructive for the other." Analyse the statement with suitable examples.

(3)

"जो एक के लिए विकास हो सकता है, वह दूसरे के लिए विकास नहीं हो सकता। यह दूसरे के लिए विनाशकारी भी हो सकता है।" उपयुक्त उदाहरणों के साथ इस कथन का विश्लेषण कीजिए।

ORअथवा

Define the following terms: निम्नलिखित शब्दों को परिभाषित करें: (1\*3=3)

- i. Infant Mortality Rate शिशु मृत्यु दर (1)
- ii. Literacy Rate and साक्षरता दर और (1)
- iii. Net Attendance Raio शुद्ध उपस्थिति अनुपात (1)

36. Describe the factors that have enabled Globalisation. वैश्वीकरण को संभव बनाने वाले कारकों का वर्णन कीजिए। (3)

ORअथवा

What are the main features of Globalisation? वैश्वीकरण की मुख्य विशेषताएँ क्या हैं?

37. Explain the role of banks regarding money which they accept from the public. जनता से स्वीकार किए जाने वाले धन के संबंध में बैंकों की भूमिका की व्याख्या कीजिए। (3)

ORअथवा

Explain the three important terms of credit. ऋण की तीन महत्वपूर्ण शर्तों की व्याख्या करें।

38. Describe any five provisions of MGNREGA 2005. मनरेगा 2005 के किन्हीं पाँच प्रावधानों का वर्णन कीजिए। (5)

ORअथवा

Compare the Employment Conditions prevailing in Organised Sector and Unorganised Sector. संगठित क्षेत्र और असंगठित क्षेत्र में प्रचलित रोजगार स्थितियों की तुलना करें।

**Pre-Board Examination (2025-26)****Class:10****Subject & Subject Code: Science Theory, (086)****Time:3hours****Max. Marks: 80****Instructions:**

(i) This question paper consists of 39 questions in 3 sections. Section A is Biology; Section B is Chemistry and Section C is Physics.

(ii) All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

| Section – A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Marks |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1           | <p>The breakdown of glucose has taken the following pathway:</p> <p style="text-align: center;"><b>Glucose <math>\xrightarrow{(a)}</math> Pyruvate + Energy <math>\xrightarrow{(b)}</math> Lactic acid + Energy</b></p> <p>The sites 'a' and 'b' respectively are:</p> <p>A. Mitochondria and Oxygen deficient muscle cells<br/>           B. Cytoplasm and Oxygen rich muscle cells<br/>           C. Cytoplasm and Yeast cells<br/>           D. Cytoplasm and Oxygen deficient muscle cells</p>                                                                  | 1     |
| 2           | <p>The process in which transport of soluble products of photosynthesis takes place in plants is known as:</p> <p>A. Transpiration      B. Evaporation      C. Conduction      D. Translocation</p>                                                                                                                                                                                                                                                                                                                                                                 | 1     |
| 3           | <p>The growth of the pollen tubes towards ovules is an example of:</p> <p>A. Phototropism      B. Hydrotropism      C. Geotropism      D. Chemotropism</p>                                                                                                                                                                                                                                                                                                                                                                                                          | 1     |
| 4           | <p>While doing yoga and exercise, which part of the brain is primarily responsible for coordinating body movements and maintaining balance?</p> <p>A. Cerebrum      B. Cerebellum      C. Medulla Oblongata      D. Thalamus</p>                                                                                                                                                                                                                                                                                                                                    | 1     |
| 5           | <p>In a classic experiment, Gregor Mendel crossed pea plants with round green seeds and wrinkled yellow seeds to study the inheritance of two traits. In the F<sub>2</sub> generation, four different phenotypic combinations of seeds appeared.</p> <p>According to Mendel's dihybrid cross, what is the expected phenotypic ratio in the F<sub>2</sub> generation?</p> <p>A. 3:1      B. 1:2:1      C. 9:3:3:1      D. 1:1:1:1</p>                                                                                                                                | 1     |
| 6           | <p>Consider the following statements:</p> <p>I. Every step in a food chain is called a trophic level.<br/>           II. Decomposers convert complex inorganic matter in dead remains of organisms into simple substances that go into the soil.<br/>           III. In a food chain, energy level increases from lower trophic level to higher trophic level.<br/>           IV. Linkages between various food chains constitute a food web.</p> <p>The correct statements is/are:</p> <p>A. I only      (B) I and IV      (C) I, II and IV      (D) II and IV</p> | 1     |
| 7           | <p>Consider the following food chain:</p> <p><b>Grass → Grasshopper → Frog → Snake → Eagle</b></p> <p>In this food chain, which organism will have the highest concentration of harmful substances due to biological magnification?</p> <p>A. Grass      B. Grasshopper      C. Frog      D. Eagle</p>                                                                                                                                                                                                                                                              | 1     |

**The following two questions consist of two statements – Assertion (A) and Reason (R).**

**Answer these questions by selecting the appropriate option given below:**

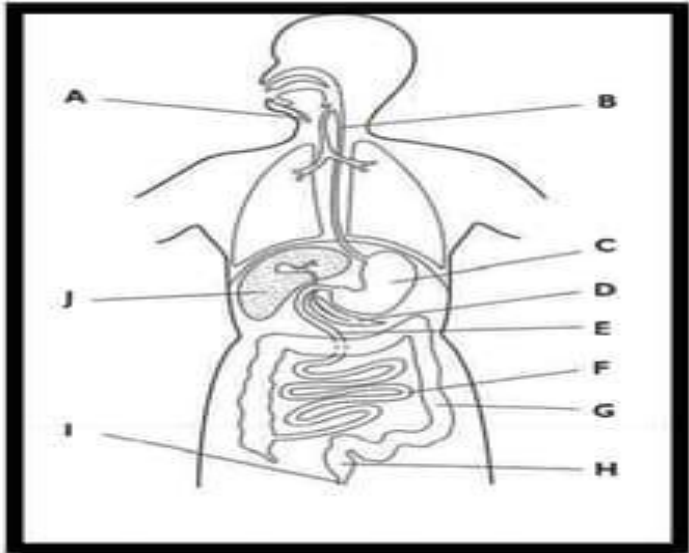
**A. Both A and R are true, and R is the correct explanation of A.**

**B. Both A and R are true, and R is not the correct explanation of A.**

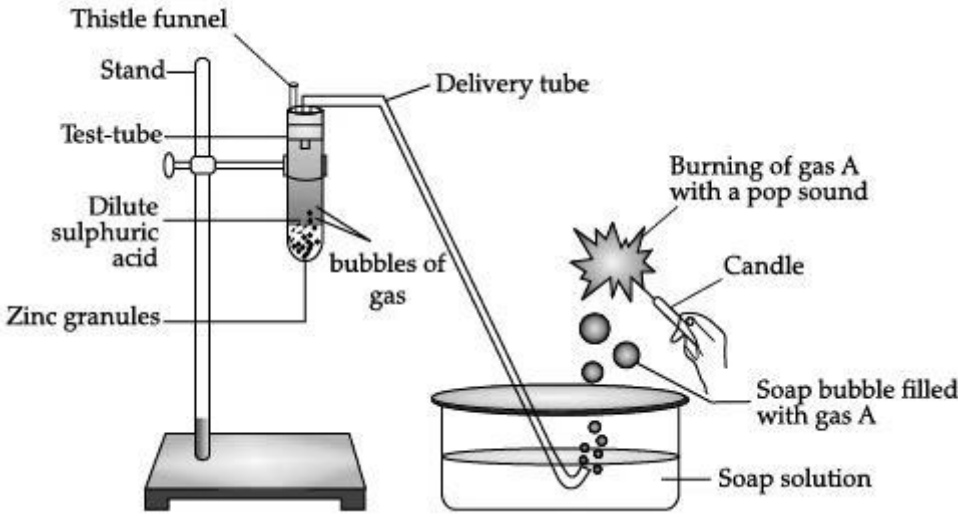
**C. A is true, but R is false.**

**D. A is false, but R is true.**

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 8  | <p><b>Assertion (A):</b> Green plants trap only 10% of the energy of sunlight that falls on their leaves.</p> <p><b>Reason (R):</b> All green plants are the producers in a food chain.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1 |
| 9  | <p><b>Assertion (A):</b> In Mendel's experiments, the dominant trait always appeared in the F<sub>1</sub> generation, while the recessive trait was hidden but reappeared in the F<sub>2</sub> generation.</p> <p><b>Reason (R):</b> The dominant allele masks the expression of the recessive allele in a heterozygous organism.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 |
| 10 | Justify the statement – <b><i>“Separation of oxygenated and deoxygenated blood is necessary in mammals and birds.”</i></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2 |
| 11 | <p>(i) Name two substances other than water that are reabsorbed during urine formation.</p> <p>(ii) What are the two parameters that decide the amount of water that is reabsorbed in the kidney.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2 |
| 12 | <p><b><u>Students to attempt either option A or B</u></b></p> <p><b>A.</b> In recent decades, scientists have observed that the ozone layer in the stratosphere is becoming thinner, especially over the polar regions, raising serious concerns about its impact on life on the Earth.</p> <p>Answer the following questions:</p> <p>(i) What is the primary function of the ozone layer in the Earth's atmosphere?</p> <p>(ii) Identify one major human activity responsible for the depletion of the ozone layer.</p> <p>(iii) Explain one harmful effect of increased ultraviolet (UV) radiation on living organisms.</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.</b> A student observes that the aquarium at her home needs to be cleaned regularly to keep the fishes healthy. However, she notices that natural ponds are not cleaned manually and still remain maintained.</p> <p>Answer the following questions:</p> <p><b>(a)</b> Why does an aquarium need regular cleaning?</p> <p><b>(b)</b> How does a pond manage to stay clean without human intervention?</p> | 2 |
| 13 | <p>Rahul noticed that his grandfather takes an insulin injection every day before meals. Curious, he asked why it was necessary. His grandfather explained that he has a condition in which his body cannot regulate blood sugar levels properly because a certain hormone is either not produced or not used effectively.</p> <p><b>Answer the following questions based on the case:</b></p> <p>(i) Which hormone is not being produced or not working properly in this condition, leading to unregulated blood sugar levels?</p> <p>(ii) Which gland is responsible for secreting this hormone?</p> <p>(iii) Name the condition Rahul's grandfather is suffering from.</p>                                                                                                                                                                                                                                                                                                                                                                                                                | 3 |
| 14 | <p>In humans, the sex of a baby is determined at the time of fertilisation. However, in other organisms sex determination may depend on environmental factors or the number of chromosomes.</p> <p><b>Answer the following:</b></p> <p>(i) How is sex determined in humans?</p> <p>(ii) Why is it said that the father is responsible for determining the sex of the child in humans?</p> <p>(iii) Name one organism in which environmental factors like temperature determine the sex of the offspring.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3 |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 15 | <p>Riya observed a diagram of the human alimentary canal in her science textbook and was curious about how different parts of this system work together to digest the food we eat. She asked her teacher why some organs digest food chemically, some mechanically, and others only transport or absorb the food. Her teacher explained that the alimentary canal is a complex system where each part has a specific function and that a disturbance in any part can affect the overall digestion.</p> <p>Based on this context and your understanding of the human digestive system, answer the following questions:</p>  <p>(i) Suppose a person's salivary glands are not functioning properly. What initial digestive process would be affected and why?</p> <p>(ii) In the given diagram of the alimentary canal, which part contains villi? Mention the letter marked against that part and its name.</p> <p>(iii) Which part, labelled in the diagram, secretes hydrochloric acid? Mention the letter and name of this part. What is the role of acid produced in the digestion?</p> <p style="text-align: center;"><b>OR</b></p> <p>(iii) Which part, labelled in the diagram, produces bile? Mention the letter and name of this part. What is the role of bile produced in digestion?</p> | 4 |
| 16 | <p><b><u>Students to attempt either option A or B</u></b></p> <p><b>A.</b> Sneha is learning about the female reproductive system and the process of fertilisation. She is curious about what happens after an egg is released during ovulation, and how the body responds if fertilisation does or does not occur. She also wants to understand the role of the placenta during pregnancy. Answer the following question based on your understanding</p> <p>(i) After ovulation, the egg either gets fertilised or disintegrates if fertilisation does not occur. Explain why the uterus lining thickens every month and justify what happens to this lining in both cases.</p> <p>(ii) What role does the placenta play during pregnancy? Explain two functions.</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.</b> In a freshwater pond, many simple organisms like Hydra, Amoeba, Plasmodium, and Leishmania thrive and multiply rapidly. All these organisms reproduce by asexual modes. Answer the following question based on your understanding</p> <p>(i) Amoeba and Plasmodium both reproduce by fission but in different ways. Name the types of fission they undergo, explain the key difference between their modes of division.</p> <p>(ii) Explain how Hydra reproduces asexually by budding.</p>                                                           | 5 |

### Section – B

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 17 | <p>A student places an iron piece in copper sulphate solution. What observations would he make? Which of the following statements are correct?</p> <ol style="list-style-type: none"> <li>1. The blue colour of the copper sulphate solution fades.</li> <li>2. A reddish-brown deposit forms on the iron piece.</li> <li>3. No reaction takes place and the blue colour remains.</li> <li>4. The solution turns greenish due to formation of iron sulphate.</li> </ol> <p><b>Choose the correct option:</b></p> <p>A. 1 and 2 only      B. 3 only      C. 1, 2 and 4 only      D. 2 and 3 only</p> | 1 |
| 18 | <p>Identify the gas A in the following experiment.</p>  <p>A. Nitrogen      B. Hydrogen<br/>C. Oxygen      D. Carbon dioxide</p>                                                                                                                                                                                                                                                                                                                                                                                 | 1 |
| 19 | <p>Which of the following pairs contains only amphoteric oxides?</p> <p>A. ZnO and Al<sub>2</sub>O<sub>3</sub>      B. CO<sub>2</sub> and SO<sub>2</sub><br/>C. MgO and CaO      D. Na<sub>2</sub>O and K<sub>2</sub>O</p>                                                                                                                                                                                                                                                                                                                                                                          | 1 |
| 20 | <p>When hydrogen chloride (HCl) gas is passed over dry blue litmus paper and wet blue litmus paper, what observations are made?</p> <p>A. Dry blue litmus paper turns red; wet blue litmus paper shows no change.<br/>B. Dry blue litmus paper shows no change; wet blue litmus paper turns red.<br/>C. Both dry and wet blue litmus papers turn red.<br/>D. Neither dry nor wet blue litmus paper changes colour.</p>                                                                                                                                                                              | 1 |
| 21 | <p>The products of the chlor-alkali process are:</p> <p>A. Hydrogen, Oxygen, and Sodium hydroxide<br/>B. Chlorine, Hydrogen, and Sodium hydroxide<br/>C. Chlorine, Oxygen, and Potassium hydroxide<br/>D. Sodium, Hydrogen, and Chlorine</p>                                                                                                                                                                                                                                                                                                                                                        | 1 |
| 22 | <p>A metal ribbon X burns in oxygen with a white, dazzling flame, forming a white solid Y. Identify the metal X, the compound Y formed, and the type of chemical reaction that occurs.</p> <p>A) X= Ca, Y= CaO; Type of reaction= Decomposition<br/>B) X= Mg, Y= MgO; Type of reaction=Combination<br/>C) X=Al, Y= Al<sub>2</sub>O<sub>3</sub>; Type of reaction=Thermal decomposition<br/>D) X=Zn, Y= ZnO; Type of reaction= Endothermic</p>                                                                                                                                                       | 1 |
| 23 | <p>What is the ratio of hydrogen to oxygen gases collected during electrolysis of water?</p> <p>A. 1:1      B. 2:1<br/>C. 1:2      D. 3:1</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1 |

The following question consists of two statements – Assertion (A) and Reason (R).

Answer these questions by selecting the appropriate option given below:

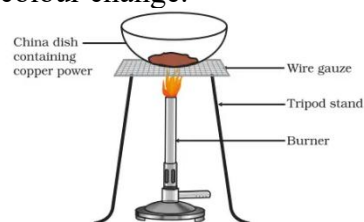
A. Both A and R are true, and R is the correct explanation of A.

B. Both A and R are true, and R is not the correct explanation of A.

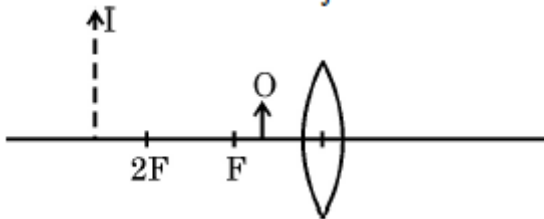
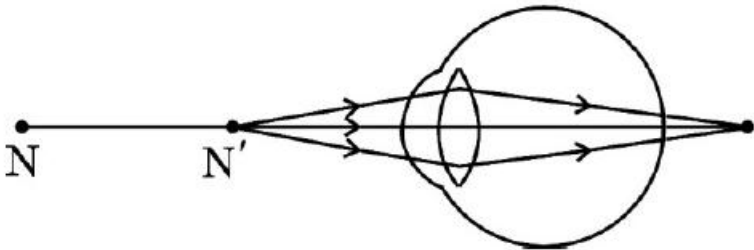
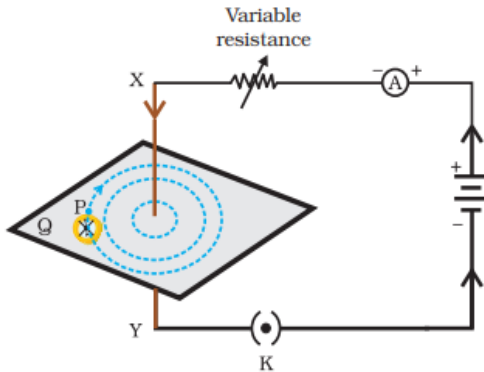
C. A is true, but R is false.

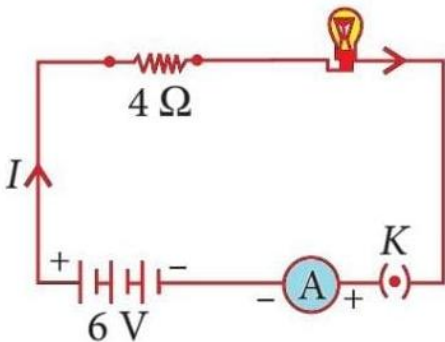
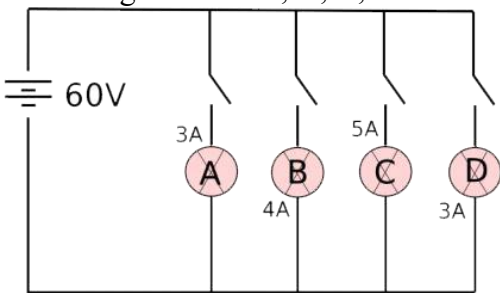
D. A is false, but R is true.

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 24 | <p><b>Assertion (A):</b> The third member of the homologous series of alkanes is propane.</p> <p><b>Reason (R):</b> The general formula of alkane is <math>C_nH_{2n-2}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1 |
| 25 | <p><b>The following activity is set up in the science laboratory by the teacher:</b></p> <p>Different metals such as calcium, magnesium, and manganese are reacted with water and dilute nitric acid (<math>HNO_3</math>). It is observed that calcium floats on water, magnesium and manganese react with dilute nitric acid to evolve hydrogen gas, but most other metals do not produce hydrogen gas with nitric acid.</p> <p>Give reason for the following observations:</p> <ol style="list-style-type: none"> <li>Why does calcium float when it reacts with water?</li> <li>Why is hydrogen gas not evolved when most metals react with nitric acid?</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2 |
| 26 | <p><b><u>Attempt either option A or B.</u></b></p> <p><b>A.</b></p> <p>Metals that are moderately reactive are often found as carbonates or sulphides in nature. Before these metals can be extracted, their ores are first converted into oxides through specific processes.</p> <ol style="list-style-type: none"> <li>Name the processes used to convert sulphide and carbonate ores into their oxides respectively.</li> <li>State the conditions under which zinc carbonate is heated during its conversion to zinc oxide. Also, write a balanced chemical equation for this conversion.</li> <li>State the conditions under which zinc sulphide is heated during its conversion to zinc oxide. Also, write a balanced chemical equation for this conversion.</li> </ol> <p style="text-align: center;"><b>OR</b></p> <p><b>B.</b></p> <p>Copper is an important metal extracted from its ore through roasting, reduction, and refining processes. Given below are the steps of extraction of copper from its ore. Write the chemical equation of reactions involved in each case.</p> <ol style="list-style-type: none"> <li>Roasting of copper(I) sulphide</li> <li>Reduction of copper(I)oxide with copper (I) sulphide</li> </ol> <p>Electrolytic refining</p> | 3 |
| 27 | <p>Pragya heats copper powder in a China dish. She observes a colour change.</p> <p>Answer the following:</p> <ol style="list-style-type: none"> <li>What is the colour change observed and why does it occur?</li> <li>Write the balanced chemical equation for this reaction.</li> <li>How can this colour change be reversed? Write the reaction.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 |
| 28 | <p>During a chemistry lab activity, four unlabelled white powders — X, Y, Z, and W — are given to students. Each is a commonly used salt: baking soda, bleaching powder, Plaster of Paris (POP), and common salt. The teacher provides some clues and demonstrations to help identify each.</p> <p>Observations:</p> <ul style="list-style-type: none"> <li><b>Sample X</b> releases a strong chlorine-like smell when exposed to air.</li> <li><b>Sample Y</b> is mixed with water and sets into a hard solid within minutes.</li> <li><b>Sample Z</b> is used in the kitchen to make pakoras crispy and fluffy.</li> <li><b>Sample W</b> has a salty taste and is used in oral rehydration solutions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4 |





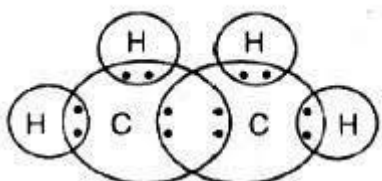
|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 32 | <p><b>Assertion (A):</b> When an object is placed at the centre of curvature of a concave mirror, the image is also formed at the centre of curvature.</p> <p><b>Reason (R):</b> In this case, the image formed is highly enlarged, real, and inverted.</p>                                                                                                                                                                                                                                                                                                                                                                   | 1 |
| 33 | <p>The diagram below shows an object <b>O</b> and its image <b>I</b> formed by a lens. Without actually drawing the ray diagram, answer the following questions:</p>  <p>(i) Identify the type of lens used to form the image shown in the above diagram.</p> <p>(ii) Name any one optical instrument where such an image is formed.</p> <p>(iii) If this lens is replaced by a concave mirror and an object is placed at a distance of <math>f/2</math> in front of the mirror, describe the nature and position, of the image formed.</p> | 2 |
| 34 | <p><b><u>Attempt either option A or B.</u></b></p> <p><b>A.</b> What are two key factors that influence the resistance of a conductor shaped like a wire, and how do they affect it?</p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.</b> State Ohm's Law. Derive the mathematical expression for it.</p>                                                                                                                                                                                                                                                                                                            | 2 |
| 35 | <p>Study the diagram given below and answer the questions that follow:</p>  <p>(i) Name the defect of vision depicted in this diagram.</p> <p>(ii) List two causes of this defect.</p> <p>(iii) Name the type of lens used to correct this defect and state its role in this case.</p>                                                                                                                                                                                                                                                    | 3 |
| 36 | <p>What is solenoid? Draw the field lines of the magnetic field produced on passing current through and around a current carrying solenoid. What will happen to the strength of the magnetic field if the number of turns in the solenoid is increased?</p>                                                                                                                                                                                                                                                                                                                                                                   | 3 |
| 37 | <p>In an experiment, a compass needle is placed near current-carrying straight conductor.</p> <p>i) What will happen to the compass needle when it is brought near the conductor?</p> <p>ii) Name and state the rule used to determine the direction of the magnetic field around the conductor.</p> <p>iii) What will happen to the direction of the magnetic field if the polarity of the battery is reversed?</p>                                                                                                                      | 3 |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |   |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 38 | <p>A student studies how light refracts through a rectangular glass slab. She observes that when light enters obliquely from air, it bends, travels through the slab, and emerges parallel to the incident ray but slightly shifted. She also examines what happens when the light enters normally and explores how light speed changes in different media.</p> <p><b>Answer the following questions:</b></p> <p>i) A ray of light travelling in air enters obliquely into water. Does the light ray bend towards the normal or away from the normal? Why?</p> <p>ii) Light enters from air to glass having a refractive index of 1.50. What is the speed of light in the glass?</p> <p>iii) In the refraction of light through a rectangular glass slab, the emergent ray is always parallel to the incident ray. Explain why this happens, with the help of a labelled ray diagram.</p> <p style="text-align: center;"><b>OR</b></p> <p>iii) What happens when a ray of light falls normally (perpendicularly) on one of the faces of a rectangular glass slab? Show it through a ray diagram</p>                                                                                                                                                                                                                              | 4 |
| 39 | <p><b><u>Attempt either option A or B.</u></b></p> <p><b>A.</b> An electric lamp of the resistance <math>20\Omega</math> and a conductor of the resistance <math>4\Omega</math> are connected to a <math>6V</math> battery as shown in the circuit. Calculate:</p> <p>(i) The total resistance of the circuit</p> <p>(ii) The current through the circuit</p> <p>(iii) The potential difference across the (a) electric lamp and (b) conductor and</p> <p>(iv) Power of the lamp</p> <div style="text-align: center;">  </div> <p style="text-align: center;"><b>Or</b></p> <p><b>B.</b> In the given circuit, A, B, C and D are four lamps connected with a battery of <math>60V</math>.</p> <div style="text-align: center;">  </div> <p>Analyse the circuit to answer the following questions:</p> <p>(i) What kind of combination are the lamps arranged in (series or parallel)?</p> <p>(ii) Explain with reference to your above answer, what are the advantages (any two) of this combination of lamps?</p> <p>(iii) Explain with proper calculations which lamp glows the brightest?</p> <p>(iv) Find out the total resistance of the circuit.</p> | 5 |

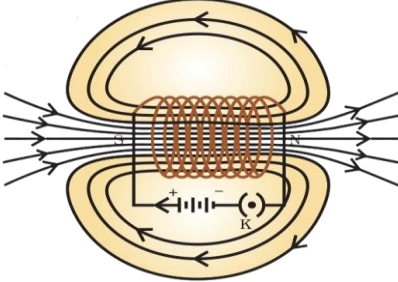
**PRE-BOARD EXAMINATION (2025-26)****Class:10****Subject & Subject Code: Science Theory, 086****Time: 3 hours****Maximum marks- 80****MARKING SCHEME**

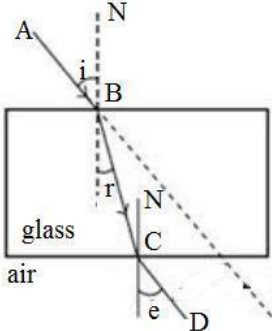
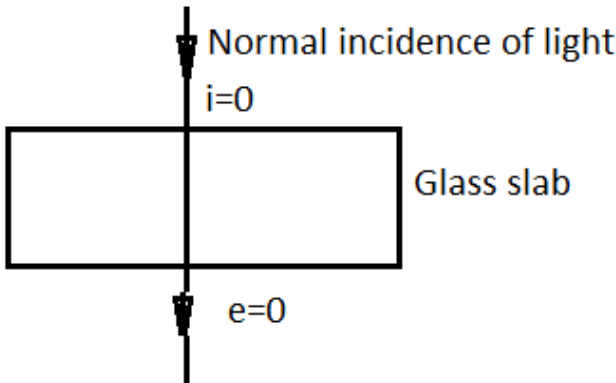
|    | <b>Section- A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                        |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| 1  | D Cytoplasm and Oxygen deficient muscle cells                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                      |
| 2  | D. Translocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1                                                      |
| 3  | D Chemotropism                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1                                                      |
| 4  | B. Cerebellum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                      |
| 5  | C. 9:3:3:1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                      |
| 6  | B. I and IV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                                      |
| 7  | D. Eagle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                      |
| 8  | D. A is false but R is true.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                                      |
| 9  | A. Both A and R are true, and R is the correct explanation of A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1                                                      |
| 10 | Justification – <ul style="list-style-type: none"> <li>Ensures efficient supply of oxygen to body tissues.</li> <li>Supports high metabolic rate needed for constant body temperature</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                        | 1+1                                                    |
| 11 | (i) Two substances reabsorbed during urine formation: <ul style="list-style-type: none"> <li>Glucose</li> <li>Amino acids</li> </ul> (ii) Two parameters that decide the amount of water reabsorbed: <ul style="list-style-type: none"> <li>Amount of excess water in the body</li> <li>Amount of dissolved waste (like urea) in the blood</li> </ul>                                                                                                                                                                                                                                                   | $\frac{1}{2}+\frac{1}{2}$<br>$\frac{1}{2}+\frac{1}{2}$ |
| 12 | (i) It absorbs most of the harmful ultraviolet (UV) radiation from the sun, protecting living organisms on Earth.<br>(ii) Use of chlorofluorocarbons (CFCs) in aerosols, refrigerators, and air conditioners.<br>(iii) Causes skin cancer and cataract in humans and can damage DNA in plants and animals, affecting growth and reproduction.<br><b>OR</b><br>(i) An aquarium is an artificial ecosystem. It lacks decomposers, so waste builds up and must be cleaned manually.<br>(ii) A pond is a natural ecosystem. It has decomposers that recycle waste, keeping it clean and balanced naturally. | 1<br>$\frac{1}{2}$<br>$\frac{1}{2}$<br>1<br>1          |
| 13 | (i) Insulin<br>(ii) Pancreas<br>(iii) Diabetes mellitus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1<br>1<br>1                                            |
| 14 | (i) Sex in humans is determined by the combination of X and Y chromosomes at fertilization. Females are XX and males are XY.<br>(Full marks to be awarded if explained through a flow chart)<br>(ii) The father determines the sex because sperm can carry either X or Y chromosome, while the egg only carries X.<br>(Full marks to be awarded if explained through a flow chart)<br>(iii) reptiles (sex depends on temperature).<br>Or any other correct example                                                                                                                                      | 1<br>1<br>1                                            |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                              |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 15                 | <p>(i) Starch digestion is affected because saliva contains amylase, which breaks down starch in the mouth.</p> <p>(ii) Letter: F, Small intestine</p> <p>(iii) Letter: C, Stomach</p> <ul style="list-style-type: none"> <li>Function: Kills germs, helps protein digestion. (any one)</li> </ul> <p style="text-align: center;"><b>OR</b></p> <p>(iii) Letter: J, Liver</p> <ul style="list-style-type: none"> <li>Function: Emulsifies fats, neutralizes acid. (any one)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | $\frac{1}{2} + \frac{1}{2}$<br>$\frac{1}{2} + \frac{1}{2}$<br>$\frac{1}{2} + \frac{1}{2}$<br>1<br><br>$\frac{1}{2} + \frac{1}{2}$<br>1       |
| 16                 | <p>(i) The uterus lining thickens every month to prepare for the implantation of a fertilised egg by becoming rich in blood vessels and nutrients.</p> <ul style="list-style-type: none"> <li>If fertilisation occurs, the fertilised egg implants in the thickened lining and the pregnancy continues.</li> <li>If fertilisation does not occur, the thickened lining breaks down and is shed during menstruation.</li> </ul> <p>(ii) Role of placenta during pregnancy:</p> <ul style="list-style-type: none"> <li>It transfers oxygen and nutrients from mother's blood to the developing foetus.</li> <li>It removes waste products like carbon dioxide from the foetus's blood to the mother's blood for disposal.</li> </ul> <p style="text-align: center;"><b>OR</b></p> <p>(i)</p> <ul style="list-style-type: none"> <li>Amoeba reproduces by binary fission</li> <li>Plasmodium reproduces by multiple fission</li> <li>Key difference: Binary fission produces two daughter cells at a time, while multiple fission produces many daughter cells simultaneously.</li> </ul> <p>(ii)</p> <ul style="list-style-type: none"> <li>Budding is a form of asexual reproduction seen in Hydra.</li> <li>A small outgrowth (bud) develops on the parent's body.</li> <li>The bud grows by mitotic cell division.</li> <li>When fully developed, the bud detaches and becomes a new, independent Hydra.</li> </ul> <p><i>(Full Marks to be awarded if well labelled diagram is drawn)</i></p> | 1<br>1<br>1<br><br>1<br>1<br><br>$\frac{1}{2}$<br>$\frac{1}{2}$<br>1+1<br><br><br>$\frac{1}{2} + \frac{1}{2}$<br>$\frac{1}{2} + \frac{1}{2}$ |
| <b>Section – B</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                              |
| 17                 | C. 1, 2 and 4 only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                                                                                                            |
| 18                 | B. Hydrogen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                            |
| 19                 | A. ZnO and Al <sub>2</sub> O <sub>3</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1                                                                                                                                            |
| 20                 | B. Dry blue litmus paper shows no change; wet blue litmus paper turns red.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                                                                                                                            |
| 21                 | B. Chlorine, Hydrogen, and Sodium hydroxide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                            |
| 22                 | B. X=Mg, Y= MgO; Type of reaction=Combination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1                                                                                                                                            |
| 23                 | B. 2:1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1                                                                                                                                            |
| 24                 | C. A is true but R is false.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1                                                                                                                                            |
| 25                 | <p>(i) Because hydrogen gas bubbles stick to calcium, making it float.</p> <p>(ii) Nitric acid is a strong oxidizing agent; it oxidizes hydrogen to water and gets reduced to nitrogen oxides (N<sub>2</sub>O, NO, or NO<sub>2</sub>).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1<br>1                                                                                                                                       |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26 | <p><b>A.</b></p> <p>(i) Sulphide ores: Roasting<br/>Carbonate ores: Calcination</p> <p>(ii) <math>ZnCO_3(s) \xrightarrow{\text{Heat}} ZnO(s) + CO_2(g)</math><br/>heating in the <b>absence of air</b> or limited air.</p> <p>(iii) <math>2ZnS + 3O_2 \xrightarrow{\text{Heat}} 2ZnO + 2SO_2</math><br/>heating in the <b>presence of excess air (oxygen).</b></p> <p style="text-align: center;"><b>OR</b></p> <p><b>B.</b></p> <p>(i) (a) <math>2Cu_2S(s) + 3O_2(g) \xrightarrow{\text{Heat}} 2Cu_2O(s) + 2SO_2(g)</math> (1)</p> <p>(b) <math>2Cu_2O(s) + Cu_2S(s) \xrightarrow{\text{Heat}} 6Cu(s) + SO_2(g)</math> (1)</p> <p>(c) <b>At cathode</b> <math>Cu^{2+}(aq) + 2e^- \longrightarrow Cu(s)</math> (1/2)<br/><b>At anode</b> <math>Cu(s) \longrightarrow Cu^{2+}(aq) + 2e^-</math> (1/2)</p> | <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1</p> <p>1</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p>                                      |
| 27 | <p>(i) Copper changes from reddish-brown to black due to the formation of copper (II) oxide on heating.</p> <p>(ii) <math>2Cu + O_2 \rightarrow 2CuO</math></p> <p>(iii) The black copper oxide can be reduced back to copper by passing hydrogen gas<br/><math>CuO + H_2 \rightarrow Cu + H_2O</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1</p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p>                                                                                                                         |
| 28 | <p>(i) Sample X is bleaching powder because it contains chlorine chemically combined as calcium oxychloride (<math>CaOCl_2</math>).</p> <p>(ii) Sample Y is Plaster of Paris because it sets into a hard solid called gypsum when mixed with water.</p> <p>(iii) Chemical name of baking soda: Sodium bicarbonate<br/>Formula: <math>NaHCO_3</math><br/>Baking soda is pure sodium bicarbonate (<math>NaHCO_3</math>); baking powder contains baking soda and a weak acid like tartaric acid.</p> <p style="text-align: center;"><b>OR</b></p> <p>Sample Z is baking soda (basic), and sample W is common salt (neutral).<br/>Sample Z is basic, while sample W is neutral in nature.</p>                                                                                                                | <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> |
| 29 | <p><b>A</b></p> <p><b>(i)</b></p> $  \begin{array}{ccc}  CH_3CH_2OH & \xrightarrow[443\text{ K}]{\text{Conc. } H_2SO_4} & CH_2=CH_2 + H_2O \\  \text{Ethyl alcohol} & & \text{Ethene} \quad \text{Water}  \end{array}  $ <p>Electron dot structure of ethene (<math>C_2H_4</math>):</p>                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>1</p> <p>1</p>                                                                                                                                                                                                                              |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |
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|    | <ul style="list-style-type: none"> <li>• Role of conc. <math>\text{H}_2\text{SO}_4</math>: It acts as a dehydrating agent to remove water from ethanol, promoting the formation of ethene.</li> </ul>                                                                                                                                                                                                                    | 1                              |
|    | (ii) Hydrogenation: Addition of hydrogen to unsaturated compounds (alkenes)                                                                                                                                                                                                                                                                                                                                              | $\frac{1}{2}$                  |
|    | $  \begin{array}{c} \text{H} & & \text{H} \\ & \diagdown & / \\ & \text{C} = \text{C} \\ & / & \diagdown \\ \text{H} & & \text{H} \end{array} + \text{H}_2 \xrightarrow{\text{Pd/C}} \begin{array}{c} \text{H} & \text{H} \\   &   \\ \text{H}-\text{C} & - & \text{C}-\text{H} \\   &   \\ \text{H} & \text{H} \end{array}  $ <p style="text-align: center;">Ethene <span style="margin-left: 150px;">Ethane</span></p> | 1                              |
|    | industrial role: Converts vegetable oils into vegetable ghee                                                                                                                                                                                                                                                                                                                                                             | $\frac{1}{2}$                  |
|    | <b>OR</b>                                                                                                                                                                                                                                                                                                                                                                                                                |                                |
|    | (i)                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |
|    | <ul style="list-style-type: none"> <li>• A is the carboxylic acid /ethanoic acid</li> <li>• C is the sodium salt of carboxylic acid/ethanoic acid /sodium ethanoate</li> </ul>                                                                                                                                                                                                                                           | $\frac{1}{2}$<br>$\frac{1}{2}$ |
|    | (ii) One use each of compound A and B                                                                                                                                                                                                                                                                                                                                                                                    | $\frac{1}{2}$                  |
|    | <ul style="list-style-type: none"> <li>• A (Ethanoic acid): Used as vinegar (in diluted form), as a preservative and flavouring agent in food.</li> <li>• B (Ethyl acetate): making perfumes, flavouring agents</li> </ul>                                                                                                                                                                                               | $\frac{1}{2}$<br>$\frac{1}{2}$ |
|    | iii) Esterification reaction                                                                                                                                                                                                                                                                                                                                                                                             |                                |
|    | $  \begin{array}{ccccccc}  \text{CH}_3\text{COOH} & + & \text{C}_2\text{H}_5\text{OH} & \xrightarrow{\text{conc. H}_2\text{SO}_4} & \text{CH}_3\text{COOC}_2\text{H}_5 & + & \text{H}_2\text{O} \\  \text{Ethanoic} & & \text{Ethanol} & & \text{Ethyl} & & \text{water} \\  \text{acid} & & & & \text{ethanoate} & &   \end{array}  $                                                                                   | 1                              |
|    | Saponification reaction                                                                                                                                                                                                                                                                                                                                                                                                  | $\frac{1}{2}$                  |
|    | $  \begin{array}{ccccccc}  \text{CH}_3\text{COOC}_2\text{H}_5 & + & \text{NaOH} & \xrightarrow{\text{Heat}} & \text{CH}_3\text{COONa} & + & \text{C}_2\text{H}_5\text{OH} \\  \text{Ethyl ethanoate} & & \text{Sodium hydroxide} & & \text{Sodium ethanoate} & & \text{Ethanol} \\  \text{(Ethyl acetate)} & & & & \text{(Sodium acetate)} & & \text{(Ethyl alcohol)}  \end{array}  $                                    | 1                              |
|    | <b>Section – C</b>                                                                                                                                                                                                                                                                                                                                                                                                       |                                |
| 30 | D. Only 1, 2, and 4                                                                                                                                                                                                                                                                                                                                                                                                      | 1                              |
| 31 | B.                                                                                                                                                                                                                                                                                                                                                                                                                       | 1                              |
| 32 | C. A is true but R is false.                                                                                                                                                                                                                                                                                                                                                                                             | 1                              |
| 33 | (i) Convex lens.                                                                                                                                                                                                                                                                                                                                                                                                         | $\frac{1}{2}$                  |
|    | (ii) Microscope or Telescope                                                                                                                                                                                                                                                                                                                                                                                             | $\frac{1}{2}$                  |
|    | (iii) If replaced by a concave mirror with object $f/2$                                                                                                                                                                                                                                                                                                                                                                  |                                |
|    | <ul style="list-style-type: none"> <li>• Nature: Virtual and erect</li> <li>• Position: Behind the mirror</li> </ul>                                                                                                                                                                                                                                                                                                     | $\frac{1}{2}$<br>$\frac{1}{2}$ |
| 34 | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |
|    | 1. Length of the Wire (L):                                                                                                                                                                                                                                                                                                                                                                                               | $\frac{1}{2}$                  |
|    | <ul style="list-style-type: none"> <li>• Effect: Resistance increases with length. / <math>R \propto L</math> / Resistance is directly proportional to length.</li> </ul>                                                                                                                                                                                                                                                | $\frac{1}{2}$                  |
|    | 2. Cross-sectional Area of the Wire (A):                                                                                                                                                                                                                                                                                                                                                                                 | $\frac{1}{2}$                  |
|    | <ul style="list-style-type: none"> <li>• Effect: Resistance decreases with greater area. / <math>R \propto 1/A</math> / Resistance is inversely proportional to cross-sectional area.</li> </ul>                                                                                                                                                                                                                         | $\frac{1}{2}$                  |
|    | <b>OR</b>                                                                                                                                                                                                                                                                                                                                                                                                                |                                |

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|    | <p>B.</p> <p>Ohm's Law states that the electric current (I) flowing through a conductor is directly proportional to the voltage (V) applied across its ends, provided the temperature and physical conditions remain constant.</p> <p>Mathematical Derivation:</p> <p>According to Ohm's Law:</p> <p><math>I \propto V</math></p> <p>To remove the proportionality, introduce a constant R (resistance):</p> <p><math>V = IR</math></p>                                                                                      | <p>1</p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p>                                                                 |
| 35 | <p>(i) Defect: Hypermetropia (far-sightedness)</p> <p>(ii) Cause:</p> <p>(i) the focal length of the eye lens is too long,</p> <p>(ii) the eyeball has become too small.</p> <p>(iii) Correction: Convex (converging) Lens</p> <p><b>Role of the Lens:</b></p> <p>It converges incoming light rays before they enter the eye.</p> <p>Or</p> <p>This increases the overall focusing power of the eye, allowing the light rays to focus on the retina instead of behind it, thus restoring clear near and distance vision.</p> | <p>1</p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> |
| 36 | <p>A coil of many circular turns of insulated copper wire wrapped closely in the shape of a cylinder is called a solenoid</p>  <p><i>(1 mark for diagram and <math>\frac{1}{2}</math> for directions of current and magnetic field)</i></p> <p>If the number of turns (coils) in the solenoid is increased while keeping the current constant, the strength of the magnetic field increases.</p>                                           | <p>1</p> <p><math>1\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p>                                                                |
| 37 | <p>(i) The compass needle gets deflected due to the magnetic field around the conductor.</p> <p>(ii) Right-Hand Thumb Rule: Thumb in current direction, curled fingers show magnetic field direction.</p> <p>(iii) The magnetic field direction reverses when the battery polarity is reversed.</p>                                                                                                                                                                                                                          | <p>1</p> <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p>1</p>                                                                          |
| 38 | <p>(i) The light ray bends towards the normal because it travels from a rarer (air) to a denser (water) medium.</p> <p>(ii)</p> $\eta = \frac{\text{Speed of light in (vacuum/air)}}{\text{Speed of light in medium}}$ $1.5 = \frac{3 \times 10^8}{\text{Speed of light in medium}}$ $\text{Speed of light in medium} = \frac{3 \times 10^8}{1.5} = 2 \times 10^8 \text{ ms}^{-1}.$                                                                                                                                          | <p><math>\frac{1}{2} + \frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p>                            |

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|    | <p>(iii)<br/>The emergent ray is parallel to the incident ray because the light bends towards the normal while entering the glass and away from the normal while exiting, causing equal but opposite refraction. This leads to lateral displacement but no change in direction.</p>  <p>Or</p> <p>(iii)<br/>When a ray falls normally on the glass slab, it passes straight through without bending because the angle of incidence is <math>0^\circ</math>.</p>                                                                                                                                                                                                                                                                                         | <p>1</p> <p>1</p> <p>1</p> <p>1</p>                                                                                                                                                             |
| 39 | <p>(i) The total resistance of the circuit<br/> <math>R=20+4 (R_1+R_2)</math> connected in series<br/> <math>=24 \text{ ohm}</math></p> <p>(ii) The current through the circuit:<br/>         Here voltage is given as,<br/> <math>V = 6\text{V}</math><br/>         And the total resistance<br/> <math>R = 24\Omega</math><br/>         Now current,<br/> <math>I=V/R</math><br/> <math>I= 6/24</math><br/> <math>I=0.25\text{A}</math><br/>         Hence current through the circuit is <math>0.25\text{A}</math>.</p> <p>(iii) The potential difference across the<br/>         (a) Electric lamp.<br/>         If the potential difference across the electric lamp is <math>V_e</math> and the resistance of the electric lamp <math>R_e</math> then,<br/> <math>V_e=I \times R_e</math><br/> <math>V_e=0.25 \times 20</math><br/>         Hence the potential difference across the electric lamp is <b>5V</b>.</p> | <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> |

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| <p>(b) The potential difference across the conductor.<br/>         If the potential difference across the conductor is <math>V_c</math> and resistance of the conductor is <math>R_c</math> then,<br/> <math>V_c = I \times R_c</math><br/> <math>V_c = 0.25 \times 4</math><br/>         Hence the potential difference across the electric lamp is <b>1V</b>.<br/>         (iv) Power of the lamp:<br/> <math>P = VI</math><br/> <math>P = 5 \times 0.25</math><br/> <math>= 1.25 \text{ W}</math></p> <p style="text-align: center;"><b>OR</b></p> <p>(i) The lamps are in parallel.<br/>         (ii) Advantages:<br/> <ul style="list-style-type: none"> <li>• In parallel, each lamp gets full voltage and glows brightly.</li> <li>• If one lamp fails, the others keep working independently.</li> </ul> <br/>         (iii) The lamp with the highest power will glow the brightest.<br/> <math>P = VI</math><br/>         In this case, all the bulbs have the same voltage. But lamp C has the highest current.<br/>         Hence, for Lamp C<br/> <math>P = 5 \times 60 \text{ Watt} = 300 \text{ W. (the maximum).}</math><br/>         (iv) The total current in the circuit <math>= 3 + 4 + 5 + 3 \text{ A} = 15 \text{ A}</math><br/>         The Voltage <math>= 60 \text{ V}</math><br/> <math>V = IR</math><br/> <math>R = V/I</math><br/> <math>= 60/15 \text{ A}</math><br/> <math>= 4 \text{ Ohm}</math></p> | <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p>1</p> <p>1+1</p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> <p><math>\frac{1}{2}</math></p> |
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**MATHEMATICS (STANDARD) – Code No. 041 (SET- 4)**  
**PRE-BOARD QUESTION PAPER- MARKING SCHEME**  
**CLASS - X (2025 - 26)**

| <b>SECTION – A</b><br><b>(Multiple Choice Questions)</b> |                                                                                                          |              |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------|
| <b>Q.No.</b>                                             | <b>Marking scheme</b>                                                                                    | <b>Marks</b> |
| <b>Q1.</b>                                               | B) $\cos 60^\circ$                                                                                       | <b>1</b>     |
| <b>Q2.</b>                                               | C) 5                                                                                                     | <b>1</b>     |
| <b>Q3.</b>                                               | C) $2\sqrt{2}$ units                                                                                     | <b>1</b>     |
| <b>Q4.</b>                                               | D) $ab = 6$                                                                                              | <b>1</b>     |
| <b>Q5.</b>                                               | D) infinite                                                                                              | <b>1</b>     |
| <b>Q6.</b>                                               | B) $\angle B = \angle D$                                                                                 | <b>1</b>     |
| <b>Q7.</b>                                               | C) $\frac{1}{12}$                                                                                        | <b>1</b>     |
| <b>Q8.</b>                                               | D) 5 cm                                                                                                  | <b>1</b>     |
| <b>Q9.</b>                                               | A) $30^\circ$                                                                                            | <b>1</b>     |
| <b>Q10.</b>                                              | D) 1 cm                                                                                                  | <b>1</b>     |
| <b>Q11.</b>                                              | D) -64                                                                                                   | <b>1</b>     |
| <b>Q12.</b>                                              | D) $\frac{7}{0.01}$                                                                                      | <b>1</b>     |
| <b>Q13.</b>                                              | A) $x^2 - 4x + 1 = 0$                                                                                    | <b>1</b>     |
| <b>Q14.</b>                                              | B) 21                                                                                                    | <b>1</b>     |
| <b>Q15.</b>                                              | C) 6.5cm                                                                                                 | <b>1</b>     |
| <b>Q16.</b>                                              | A) decreases by 2                                                                                        | <b>1</b>     |
| <b>Q17.</b>                                              | A) $\frac{-17}{7}$                                                                                       | <b>1</b>     |
| <b>Q18.</b>                                              | A) 3 cm                                                                                                  | <b>1</b>     |
| <b>Q19.</b>                                              | A)Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A). | <b>1</b>     |

|             |                                                   |          |
|-------------|---------------------------------------------------|----------|
| <b>Q20.</b> | C) Assertion (A) is true but reason (R) is false. | <b>1</b> |
|-------------|---------------------------------------------------|----------|

| <b>SECTION – B</b><br><b>(Very Short Answers)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Q. No.</b>                                     | <b>Marking scheme</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Marks</b> |
| <b>Q21.</b>                                       | If any number ends with the digit 0 that means it should be divisible by 5. That is, if $6^n$ ends with the digit 0, then the prime factorisation of $6^n$ would contain the prime factors 2 and 5 both.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>1</b>     |
|                                                   | Prime factorisation of $6^n = (2 \times 3)^n = (2)^n \times (3)^n$<br>We can clearly observe, 5 is not present in the prime factorisation of $6^n$ . That means $6^n$ will not be divisible by 10.<br>Therefore, $6^n$ cannot end with the digit 0 for any natural number n.                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>1</b>     |
| <b>Q22.</b>                                       | The coordinates of the point P(x, y) which divides the line segment joining the points A(x <sub>1</sub> , y <sub>1</sub> ) and B(x <sub>2</sub> , y <sub>2</sub> ), internally, in the ratio k:1 is given by the Section Formula: $P(x, y) = [(mx_2 + nx_1) / m + n, (my_2 + ny_1) / m + n]$                                                                                                                                                                                                                                                                                                                                                                                                     | <b>1</b>     |
|                                                   | The coordinates of the point of division P of AB, coordinates of A (6,-3) and coordinates of B (1, 6).are<br>$x = (k + 6) / (k + 1)$ ;<br>$y = (6k - 3) / (k + 1)$<br>P(x, y) lies on y = x<br>$\Rightarrow (k + 6) / (k + 1) = (6k - 3) / (k + 1)$<br>$\Rightarrow k + 6 = 6k - 3 \Rightarrow k = 9/5$<br>Hence, the required ratio is 9 : 5                                                                                                                                                                                                                                                                                                                                                    | <b>1</b>     |
| <b>Q23.</b>                                       | (A) $a \cos \theta + b \sin \theta = m$<br>Squaring equation, we get<br>$a^2 \cos^2 \theta + b^2 \sin^2 \theta + 2ab \cos \theta \sin \theta = m^2 \dots (1)$<br>Again square equation, $a \sin \theta - b \cos \theta = n$<br>$a^2 \sin^2 \theta + b^2 \cos^2 \theta - 2ab \cos \theta \sin \theta = n^2 \dots (2)$<br>Add (1) and (2)<br>$\Rightarrow a^2 \cos^2 \theta + b^2 \sin^2 \theta + 2ab \cos \theta \sin \theta + a^2 \sin^2 \theta + b^2 \cos^2 \theta - 2ab \cos \theta \sin \theta = m^2 + n^2$<br>$\Rightarrow a^2 (\cos^2 \theta + \sin^2 \theta) + b^2 (\cos^2 \theta + \sin^2 \theta) = m^2 + n^2$<br>(Using $\cos^2 \theta + \sin^2 \theta = 1$ )<br>$a^2 + b^2 = m^2 + n^2$ | <b>1</b>     |
|                                                   | <p style="text-align: center;"><b>OR</b></p> (B) Let $\Delta ABC$ be a right-angled triangle such that $\tan A = 1/\sqrt{3}$<br>$\tan A = \text{side opposite to } \angle A / \text{side adjacent to } \angle A = BC/AB = 1/\sqrt{3}$<br>Let $BC = k$ and $AB = \sqrt{3} k$ , where k is a positive integer.<br>By applying Pythagoras theorem in $\Delta ABC$ , we have                                                                                                                                                                                                                                                                                                                         | <b>1</b>     |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                            |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|      | $AC^2 = AB^2 + BC^2$ $= (\sqrt{3}k)^2 + (k)^2$ $= 3k^2 + k^2$ $= 4k^2$ $\therefore AC = 2k$ $\therefore \sin A \cos C + \cos A \sin C = (BC/AC)(BC/AC) + (AB/AC)(AB/AC)$ $= (1/2)(1/2) + (\sqrt{3}/2)(\sqrt{3}/2)$ $= \frac{1}{4} + \frac{3}{4} = \frac{4}{4} = 1$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>1</p> <p>1</p>                                                                          |
| Q24. | <p>Given: <math>\angle D = \angle E</math> and <math>AD/DB = AE/EC</math></p> <p>To prove: <math>\triangle BAC</math> is an isosceles triangle</p> <p>Proof: Here, <math>AD/DB = AE/EC</math> [Given]</p> <p><math>\Rightarrow DE \parallel BC</math></p> <p>[By converse of Basic Proportionality Theorem]</p> <p>Now, <math>\angle D = \angle B</math> [Corresponding angle]</p> <p><math>\angle E = \angle C</math></p> <p>But <math>\angle D = \angle E</math> [Given]</p> <p>Hence <math>\angle B = \angle C</math></p> <p><math>\therefore AB = AC</math></p> <p>[Sides opp. to equal angles of a <math>\triangle</math> are equal]</p> <p><math>\therefore \triangle BAC</math> is an isosceles <math>\triangle</math>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p>1</p> <p>1</p>                                                                          |
| Q25. | <p>(A) Distance formula is used to find distance between two given points, Distance</p> $(d) = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ <p>So, <math>AB = \sqrt{(5 - 1)^2 + (4 - 2)^2} = \sqrt{4^2 + 2^2} = \sqrt{20} = 2\sqrt{5}</math> units</p> <p><math>BC = \sqrt{(3 - 5)^2 + (8 - 4)^2} = \sqrt{(-2)^2 + 4^2} = \sqrt{20} = 2\sqrt{5}</math> units</p> <p><math>CD = \sqrt{(-1 - 3)^2 + (6 - 8)^2} = \sqrt{(-4)^2 + (-2)^2} = \sqrt{20} = 2\sqrt{5}</math> units</p> <p><math>DA = \sqrt{(1 + 1)^2 + (2 - 6)^2} = \sqrt{2^2 + (-4)^2} = \sqrt{20} = 2\sqrt{5}</math> units</p> <p>Now, <math>AC = \sqrt{(3 - 1)^2 + (8 - 2)^2} = \sqrt{2^2 + 6^2} = \sqrt{40} = 2\sqrt{10}</math> units</p> <p><math>BD = \sqrt{(-1 - 5)^2 + (6 - 4)^2} = \sqrt{(-6)^2 + 2^2} = \sqrt{40} = 2\sqrt{10}</math> units</p> <p>As, we can see that <math>AB = BC = CD = DA</math> and <math>AC = BD</math>. Since, all the sides are equal and both the diagonals are equal to each other, so given points are the vertices of a square.</p> <p style="text-align: center;"><b>OR</b></p> <p>(B) Here, the coordinates of A are (4, -5) and the coordinates of B are (4, 5). The ratio AP:AB is 2:5, so <math>m = 2</math> and <math>n = 3</math> (since <math>AP:PB = 2:3</math>)</p> <p>By the Section Formula: <math>P(x, y) = [(mx_2 + nx_1) / m + n, (my_2 + ny_1) / m + n]</math></p> $= [(2 \times 4 + 3 \times 4) / 2 + 3, \{2 \times 5 + 3 \times (-5)\} / 2 + 3]$ $= [(8 + 12) / 5, (10 - 15) / 5] = [20 / 5, -5 / 5] = (4, -1)$ <p>The coordinates of point P are (4, -1)</p> | <p><math>\frac{1}{2}</math></p> <p>1</p> <p><math>\frac{1}{2}</math></p> <p>1</p> <p>1</p> |

**SECTION – C**  
**(Short Answers)**

| Q. No.      | Marking scheme                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Marks                                                                                                                                                                                                     |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Q26.</b> | <p>(A) <math>2x + 3y = 7</math><br/>and <math>2ax + (a + b)y = 28</math><br/>For the system to have infinite solutions, the ratios of the coefficients must be equal:</p> $\frac{a1}{a2} = \frac{b1}{b2} = \frac{c1}{c2}$ <p><math>\Rightarrow 2/2a = 3/(a + b) = 7/28</math> (<math>7/28 = 1/4</math>)<br/> <math>\Rightarrow 2/2a = 1/4 \Rightarrow 4 = 2a \Rightarrow a = 2</math><br/> And <math>3/(a + b) = 1/4 \Rightarrow 12 = a + b \Rightarrow 12 = 2 + b \Rightarrow b = 10</math><br/> The values of a and b are <math>a=2</math> and <math>b=10</math>.</p> <p style="text-align: center;"><b>OR</b></p> <p><math>217x + 131y = 913</math> .....(1)<br/> <math>131x + 217y = 827</math> .....(2)<br/> Add equations (1) and (2)<br/> <math>348x + 348y = 1740</math><br/> <math>\Rightarrow 348(x + y) = 1740 \Rightarrow x + y = 5</math>.....(3)<br/> Subtract the equation (2) from equation (1)<br/> <math>(217x + 131y) - (131x + 217y) = 913 - 827</math><br/> <math>\Rightarrow 86x - 86y = 86 \Rightarrow 86(x - y) = 86 \Rightarrow x - y = 1</math>.....(4)<br/> Add equations (3) and (4)<br/> <math>\Rightarrow 2x = 6 \Rightarrow x = 3</math><br/> Substitute <math>x = 3</math> into <math>x + y = 5 \Rightarrow 3 + y = 5 \Rightarrow y = 2</math><br/> <math>\therefore x = 3, y = 2</math></p> | <p style="text-align: center;"><b>1</b><br/><b>1</b><br/><b>1</b></p> <p style="text-align: center;"><b>1</b></p> <p style="text-align: center;"><b>1</b></p> <p style="text-align: center;"><b>1</b></p> |
| <b>Q27.</b> | <p>Given, <math>S_n = 6n - n^2</math>.<br/> So, sum of <math>(n - 1)</math> terms will be<br/> <math>\Rightarrow S_{n-1} = 6(n - 1) - (n - 1)^2</math><br/> <math>\Rightarrow S_{n-1} = 6n - 6 - (n^2 + 1 - 2n)</math><br/> <math>\Rightarrow S_{n-1} = 6n - 6 - n^2 - 1 + 2n</math><br/> <math>\Rightarrow S_{n-1} = 8n - n^2 - 7</math>.<br/> By formula, <math>a_n = S_n - S_{n-1}</math><br/> <math>\Rightarrow a_n = 6n - n^2 - (8n - n^2 - 7)</math><br/> <math>\Rightarrow a_n = 6n - 8n - n^2 + n^2 + 7</math><br/> <math>\Rightarrow a_n = -2n + 7</math>.<br/> <math>\therefore a_{30} = -2(30) + 7 = -60 + 7 = -53</math>.<br/> Hence, the 25th term of the A.P. is -53.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p style="text-align: center;"><b>1</b></p> <p style="text-align: center;"><b>1</b></p> <p style="text-align: center;"><b>1</b></p>                                                                       |
| <b>Q28.</b> | <p>Given: CD is the perpendicular bisector of AB(i.e. <math>AD=BD</math>) . EF is perpendicular to CD. AE intersects CD at G.<br/> To prove : <math>\frac{CF}{CD} = \frac{FG}{DG}</math><br/> Proof: In <math>\triangle EFC</math> and <math>\triangle BDC</math>,<br/> <math>\angle EFC = \angle BDC</math> (<math>90^\circ</math> each)<br/> <math>\angle ECF = \angle BCD</math> (Common)<br/> By AA Similarity, <math>\triangle EFC \sim \triangle BDC</math><br/> <math>EF/BD = FC/DC</math> ( C.P.S.T.)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p style="text-align: center;"><b>1</b></p>                                                                                                                                                               |

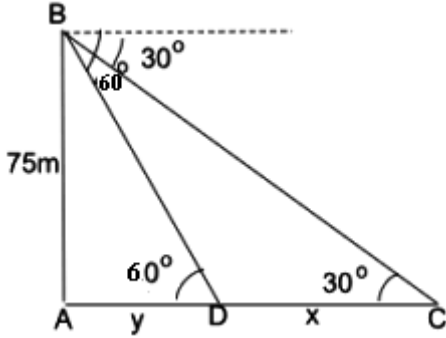
|      |                                                                                                                                                                                      |       |       |       |        |        |       |                                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|--------|--------|-------|--------------------------------|
|      | In ΔEFG and ΔDGA,<br>∠EGF = ∠DGA (V.O.A.)<br>∠EFG = ∠GDA (Each 90°)<br>By AA Similarity, ΔEFG~ ΔADG<br>EF/AD=FG/DG (C.P.S.T.)<br>As, AD=BD, EF/BD=FG/DG<br>FG/DG=CF/CD ,Hence Proved |       |       |       |        |        |       | 1<br><br><br><br><br><br><br>1 |
| Q29. | Classes                                                                                                                                                                              | 0-15  | 15-30 | 30-45 | 45-60  | 60-75  | 75-90 | 1 ½                            |
|      | Frequency                                                                                                                                                                            | 17    | 20    | 18    | 21     | 15     | 9     |                                |
|      | Class-mark x <sub>i</sub>                                                                                                                                                            | 7.5   | 22.5  | 37.5  | 52.5   | 67.5   | 82.5  |                                |
|      | f <sub>i</sub> x <sub>i</sub>                                                                                                                                                        | 127.5 | 450   | 675   | 1102.5 | 1012.5 | 742.5 |                                |
|      | Σ fix <sub>i</sub> = 4110 ,                                                                                                                                                          |       |       |       |        |        |       |                                |

|                                                                                                                                                                                                                                             |          |
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| $= \frac{\sec A - 1}{\tan A} + \frac{\sec A + 1}{\tan A} = \frac{\sec A - 1 + \sec A + 1}{\tan A}$ $= \frac{2 \sec A}{\tan A} = \frac{2}{\cos A} \times \frac{\cos A}{\sin A}$ $= \frac{2}{\sin A} = 2 \operatorname{cosec} A = \text{RHS}$ | <b>1</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

| <b>SECTION – D</b><br><b>(Long Answers)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Q. No.                                      | Marking scheme                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Marks    |
| <b>Q32.</b>                                 | <p>The horse can graze an area of a sector of a circle with radius (r) 5m and an angle with a degree measure <math>90^\circ</math> [Since its a square field]</p> <p>Length of the rope, <math>r = 5</math> m</p> <p>Area of the field the horse can graze = Area of the sector with <math>\theta = 90^\circ</math> and <math>r = 5</math></p> $= \frac{\theta}{360^\circ} \times \pi r^2$ $= \frac{90^\circ}{360^\circ} \times \pi r^2 = \frac{1}{4} \times \pi \times (5 \text{ m})^2$ $= \frac{25}{4} \times 3.14 \text{ m}^2 = 19.625 \text{ m}^2$ <p>The area that can be grazed by the horse when the length of the rope is 10m, is the area of the sector of a circle with a radius (r) 10 m and an angle with a degree measure <math>90^\circ</math>.</p> <p>Area of the field the horse can graze = Area of the sector with <math>\theta = 90^\circ</math> and <math>r = 10</math></p> $= \frac{90^\circ}{360^\circ} \times \pi r^2 = \frac{1}{4} \times 3.14 \times 100 \text{ m}^2$ $= 78.5 \text{ m}^2$ <p>Increase in the grazing area</p> $= 78.5 \text{ m}^2 - 19.625 \text{ m}^2 = 58.875 \text{ m}^2$ | <b>2</b> |
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>2</b> |
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>1</b> |
| <b>Q33.</b>                                 | <p>(A) Total journey completed in 3 hours.</p> <p>We know, distance = speed/time</p> <p>Given, a train travels a distance of 54km at an average speed of <math>x</math> km/hr,</p> <p>Time = <math>54/x</math></p> <p>Given, same train travels a distance of 63km at an average speed of <math>(x+6)</math>km/hr,</p> <p>Time = <math>63/(x+6)</math></p> <p>So, Total time taken, <math>3 = (54/x) + 63/(x+6)</math></p> <p>Dividing by 3 on both sides,</p> $1 = 18/x + 21/(x+6)$ $\Rightarrow x(x+6) = 18(x+6) + 21(x)$ $\Rightarrow x^2 + 6x = 18x + 108 + 21x$ $\Rightarrow x^2 + 6x - 21x - 108 = 0$ $\Rightarrow x^2 - 15x - 108 = 0$ $\Rightarrow x^2 - 18x + 3x - 108 = 0$ $\Rightarrow x(x - 18) + 3(x - 36) = 0$ $\Rightarrow (x - 18)(x + 3) = 0$                                                                                                                                                                                                                                                                                                                                                         | <b>1</b> |
|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>2</b> |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                    | <p>Now, <math>x - 36 = 0 \Rightarrow x = 36</math><br/> Also, <math>x + 3 = 0 \Rightarrow x = -3</math><br/> Since the average speed <math>x</math> cannot be negative, <math>x = 36</math> km/hr<br/> Therefore, the original average speed of the train is 36km/hr.</p> <p style="text-align: center;"><b>OR</b></p> <p>(B) Let the tap of smaller diameter fill the tank in <math>x</math> hours.<br/> The tap of larger diameter takes <math>(x - 2)</math> hours.<br/> Given, the two water taps can fill the tank together in <math>15/8</math> hours = <math>15/8</math> hours<br/> The smaller tap fills the tank in <math>x</math> hours.<br/> Therefore, in one hour, the part of the tank filled by the smaller tap = <math>1/x</math><br/> Also, the larger tap fills the tank in <math>(x - 2)</math> hours.<br/> Thus, in one hour, the part of the tank filled by the larger tap = <math>1/(x - 2)</math><br/> Now, considering both the pipes working together we have,<br/> In 1 hour, the part of the tank filled by the smaller and larger tap together is,<br/> <math>1/x + 1/(x - 2) = 8/15</math> [ Since, the two water taps can fill the tank together in <math>15/8</math> hours]<br/> By taking LCM and solving,<br/> <math>(x - 2 + x) / x(x - 2) = 8/15</math><br/> <math>\Rightarrow (2x - 2) / (x^2 - 2x) = 8/15</math><br/> <math>\Rightarrow 15(2x - 2) = 8(x^2 - 2x)</math><br/> <math>\Rightarrow 30x - 30 = 8x^2 - 16x</math><br/> <math>\Rightarrow 8x^2 - 16x - 30x + 30 = 0</math><br/> <math>\Rightarrow 8x^2 - 46x + 30 = 0</math><br/> <math>\Rightarrow 4x^2 - 23x + 15 = 0</math><br/> <math>\Rightarrow 4x^2 - 20x - 3x + 15 = 0</math><br/> <math>\Rightarrow 4x(x - 5) - 3(x - 5) = 0</math><br/> <math>\Rightarrow (x - 5)(4x - 3) = 0</math><br/> Now, <math>x - 5 = 0 \Rightarrow x = 5</math><br/> Also, <math>4x - 3 = 0 \Rightarrow x = 3/4</math><br/> If <math>x = 3/4</math> hours, then the time taken by the larger pipe would be <math>x - 2 = 3/4 - 2 = -5/4</math> hours, which is not possible as time cannot be negative.<br/> Therefore, <math>x = 5</math> hours is the valid solution for the time taken by the smaller pipe. The time taken by the larger pipe is <math>x - 2 = 5 - 2 = 3</math> hours.</p> | <p style="text-align: center;">2</p> <p style="text-align: center;">1</p> <p style="text-align: center;">2</p> <p style="text-align: center;">2</p> |
| <p><b>Q34.</b></p> | <div data-bbox="327 1429 922 1825" data-label="Image"> </div> <p>(A)<br/> Let, <math>AE = AF = x</math> (The lengths of tangents drawn from an external point to a circle are equal)<br/> <math>CD = CE = 8</math> cm (Tangents from point C)<br/> <math>BD = BF = 10</math> cm (Tangents from point B)<br/> Using Heron's formula, area of the triangle = <math>\sqrt{s(s - a)(s - b)(s - c)}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p style="text-align: center;">1</p>                                                                                                                |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                       |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|  | <p>where<br/> <math>s = \frac{1}{2} (AB + BC + CA)</math><br/> a, b and c are sides of a triangle<br/> <math>AB = x + 10</math><br/> <math>BC = 8 + 10 = 18</math><br/> <math>CA = 8 + x</math><br/> <math>s = \frac{1}{2} (x + 10 + 18 + 8 + x) = \frac{1}{2} (2x + 36) = x + 18</math><br/> Area of <math>\triangle ABC = \sqrt{s(s-a)(s-b)(s-c)}</math><br/> <math>= \sqrt{(x+18)(x+18-x-10)(x+18-18)(x+18-x-8)}</math><br/> <math>= \sqrt{(x+18)(8)(x)(10)} = \sqrt{80x(x+18)}</math><br/> <math>\sqrt{80x(x+18)} = 90</math> (given that area of <math>\triangle ABC = 90 \text{ cm}^2</math>)<br/> Squaring both sides, <math>80x(x+18) = 8100</math><br/> <math>4x(x+18) = 405</math><br/> <math>4x^2 + 72x - 405 = 0 \quad = 4x^2 + 90x - 18x + 405</math><br/> <math>= 2x(2x + 45) - 9(2x + 45) = (2x + 45)(2x - 9)</math><br/> <math>x = -22.5</math> and <math>x = 4.5</math>, Length of side cannot be negative, <math>x = 4.5 \text{ cm}</math><br/> <math>AB = x + 10 = 10 + 4.5 = 14.5 \text{ cm}</math><br/> <math>AC = 8 + x = 8 + 4.5 = 12.5 \text{ cm}</math></p> <p style="text-align: center;"><b>OR</b></p> <p>(B) Given: A circle touches the side BC of a triangle ABC at P<br/> The circle touches the extended sides AB and AC of the triangle at Q and R.<br/> To prove: <math>AQ = \frac{1}{2} (BC + CA + AB)</math><br/> Proof: We know that the tangents drawn through an external point to a circle are equal.<br/> So, <math>BP = BQ</math> ----- (1)<br/> <math>CP = CR</math> ----- (2)<br/> <math>AQ = AR</math> ----- (3)<br/> From the figure,<br/> <math>BC = BP + PC</math><br/> So, <math>AB + BC + AC = AB + (BP + PC) + AC</math><br/> From (1) and (2),<br/> <math>AB + BC + AC = AB + BQ + CR + AC</math><br/> From the figure,<br/> <math>AB + BQ = AQ</math><br/> <math>CR + AC = AR</math><br/> So, <math>AB + BC + AC = AQ + AR</math><br/> From (3),<br/> <math>AB + BC + AC = AQ + AQ</math><br/> <math>AB + BC + AC = 2AQ</math><br/> So, <math>AQ = \frac{1}{2}(AB + BC + AC)</math></p> | <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>2</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Q35. |  <p>Let the height of the lighthouse from the sea level be AB and the ship is at C and D.</p> <p>The angles of depression of the ship at C and D from the top B of the lighthouse are <math>30^\circ</math> and <math>60^\circ</math> respectively.</p> <p>In <math>\triangle ABD</math>,<br/> <math>\tan 60^\circ = AB/AD \Rightarrow \sqrt{3} = 75/AD</math><br/> <math>\Rightarrow AD = 75/\sqrt{3}</math></p> <p>In <math>\triangle ABC</math>,<br/> <math>\tan 30^\circ = AB/AC \Rightarrow 1/\sqrt{3} = 75/AC</math><br/> <math>\Rightarrow AC = 75\sqrt{3}</math></p> <p>Distance between the position of the ship = <math>CD = AC - AD</math><br/> <math>CD = 75\sqrt{3} - 75/\sqrt{3} = 75(\sqrt{3} - 1/\sqrt{3}) = 75 \times 2/\sqrt{3} = 150/\sqrt{3}</math><br/> <math>= 50\sqrt{3} = 50 \times 1.73 = 86.5 \text{ m}</math></p> <p>Distance between two positions, CD is 86.5 m.</p> <p>Hence speed = 2.55 m/s</p> | <p>1</p> <p>1</p> <p>1</p> <p>2</p> |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|

| <b>SECTION - E</b><br><b>(Case-study Based Questions)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                       |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Q. No.                                                    | Marking scheme                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Marks                                                 |
| Q36.                                                      | <p>(i) The mallet is cylindrical in shape. The formula to calculate the volume of a cylinder = <math>\pi r^2 h</math>, where r is the radius and h is the height.<br/> <math>= 3.14 \times 2^2 \times 10 = 3.14 \times 4 \times 10 = 125.6 \text{ cm}^3</math></p> <p>(ii) The bowl is hemispherical in shape. The formula to calculate the curved surface area of a hemisphere = <math>2\pi r^2</math>, where r is the inner radius.<br/> <math>= 2 \times 3.14 \times 5^2 = 2 \times 3.14 \times 25 = 157 \text{ cm}^2</math></p> <p>(iii) (a) Volume of metal used = Volume of the outer hemisphere from the volume of the inner hemisphere = <math>(2/3)\pi R^3 - (2/3)\pi r^3</math><br/> <math>(2/3)\pi(6)^3 - (2/3)\pi(5)^3 = (2/3) \times 3.14 \times (216 - 125)</math><br/> <math>= (2/3) \times 3.14 \times 91 = 190.49 \text{ cm}^3</math></p> <p style="text-align: center;"><b>OR</b></p> <p>(iii) (b) Total surface area of mallet = Total surface area of cylinder<br/> <math>= 2\pi r(r + h) = 2 \times 3.14 \times 2(2 + 10)</math><br/> <math>= 2 \times 3.14 \times 2 \times 12 = 150.72 \text{ cm}^2</math></p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> |
| Q37.                                                      | <p>(i) P (the probability of drawing the eight ball)<br/> <math>= \frac{\text{Number of favourable balls to the event}}{\text{total number of balls}} = \frac{1}{15}</math></p> <p>(ii) Since no ball has numbered more than 15, then P(the probability of drawing a</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>1</p>                                              |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                 |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|             | <p>number greater than fifteen)</p> $= \frac{\text{Number of favourable balls to the event}}{\text{total number of balls}} = \frac{0}{15} = 0$ <p>(iii) (a) There are 4 balls solid coloured and bears an even number (2,4,6,8), then P(the probability of drawing a ball solid coloured and bears an even number)</p> $= \frac{\text{Number of favourable balls to the event}}{\text{total number of balls}} = \frac{4}{15}$ <p>(iii) (b) There are 5 balls having number multiple of 3, then P( the probability of drawing a multiple of three) = <math>\frac{\text{Number of favourable balls to the event}}{\text{total number of balls}} = \frac{5}{15} = \frac{1}{3}</math></p>                                                                                                                                                                                                                                        | <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p>                                                 |
| <b>Q38.</b> | <p>(i) The number of zeroes of the curve is equal to the number of times the parabola intersects the x-axis. Here, it intersects at two points, so the number of zeroes is 2.</p> <p>(ii) If the graph does not intersect the x-axis but intersects the y-axis at one point, then the parabola has no real zeroes (zero real roots).</p> <p>(iii) (a) <math>x^2 + (a + 1)x + b</math><br/> The sum of the zeroes<br/> <math>2 + (-3) = a + 1 \Rightarrow a = -1 - 1 \Rightarrow a = -2</math><br/> The product of the zeroes:<br/> <math>2 \times (-3) = b \Rightarrow b = -6</math><br/> <math>\therefore a = -2, b = -6</math></p> <p style="text-align: center;"><b>OR</b></p> <p>(iii) (b) Substitute <math>x = -4</math> in the polynomial:<br/> <math>(-4)^2 - 2 \times (-4) - (7p + 3) = 0 \Rightarrow 16 + 8 - 7p - 3 = 0</math><br/> <math>\Rightarrow 24 - 3 = 7p \Rightarrow 21 = 7p \Rightarrow p = 3</math></p> | <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> |

**PRE-BOARD EXAMINATION (2025-26)**  
**CLASS - X**  
**MATHEMATICS (STANDARD) – Code No. 041**

Maximum marks:80

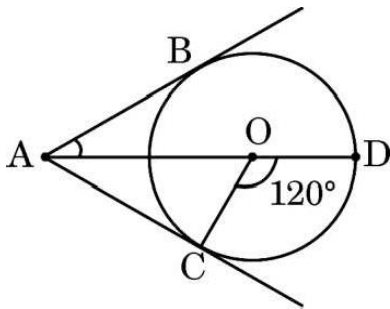
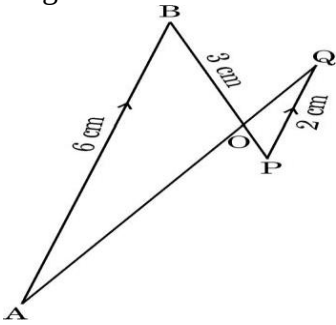
Time :3 hours

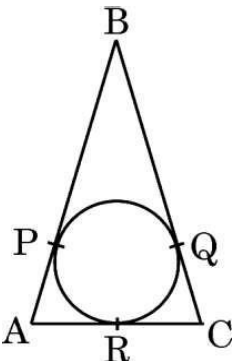
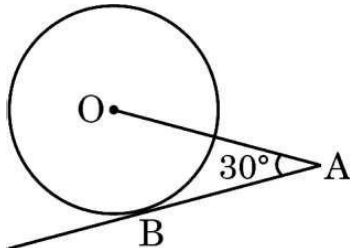
**General Instructions: -**

**Read the following instructions carefully and follow them: -**

1. This question paper contains 38 questions. All Questions are compulsory.
2. This Question Paper is divided into 5 Sections A, B, C, D and E.
3. In Section A, Question numbers 1-18 are multiple choice questions (MCQs) and question no.19 and 20 are Assertion- Reason based questions of 1 mark each.
4. In Section B, Question numbers 21-25 are very short answer (VSA) type questions, carrying 02 marks each.
5. In Section C, Question numbers 26-31 are short answer (SA) type questions, carrying 03 marks each.
6. In Section D, Question numbers 32-35 are long answer (LA) type questions, carrying 05 marks each.
7. In Section E, Question numbers 36-38 are case study-based questions carrying 4 marks each with sub parts of the values of 1, 1 and 2 marks each respectively.
8. There is no overall choice. However, an internal choice in 2 questions of Section B, 2 questions of Section C and 2 questions of Section D has been provided. An internal choice has been provided in all the 2 marks questions of Section E.
9. Draw neat and clean figures wherever required. Take  $\pi = 227$  wherever required if not stated.
10. Use of calculators is not allowed.

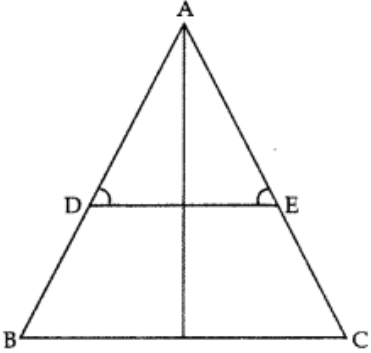
| SECTION – A<br>(Multiple Choice Questions)                                                  |                                                                                                                                                                                                                                           |       |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Each MCQ of 1mark, has four options with only one correct option, choose the correct option |                                                                                                                                                                                                                                           |       |
| Q.No.                                                                                       | Question                                                                                                                                                                                                                                  | Marks |
| Q1.                                                                                         | $\frac{1 - \tan^2 30^\circ}{1 + \tan^2 30^\circ}$ is equal to :<br>A) $\sin 60^\circ$ B) $\cos 60^\circ$ C) $\tan 60^\circ$ D) $\cos 30^\circ$                                                                                            | 1     |
| Q2.                                                                                         | The common difference of the A.P. whose nth term is given by $a_n = 5n - 7$ is :<br>A) -7    B) 7C) 5    D) -2                                                                                                                            | 1     |
| Q3.                                                                                         | If end points of a diameter of a circle are ( 5, 4) and (1, 0), then the radius of the circle is :<br>A) $2\sqrt{13}$ units    B) $4\sqrt{2}$ units    C) $2\sqrt{2}$ units    D) $\sqrt{13}$ units                                       | 1     |
| Q4.                                                                                         | The pair of equations $ax + 2y = 9$ and $3x + by = 18$ represent parallel lines, where a, b are integers, if :<br>A) $a = b$ B) $3a = 2b$ C) $2a = 3b$ D) $ab = 6$                                                                        | 1     |
| Q5.                                                                                         | The number of polynomials having zeroes 1 and 2 is :<br>A) exactly 2    B) only 1    C) at most 2    D) infinite                                                                                                                          | 1     |
| Q6.                                                                                         | In $\triangle ABC$ and $\triangle DEF$ , $\frac{AB}{DE} = \frac{BC}{FD}$ . Which of the following makes the twotriangles similar ?<br>A) $\angle A = \angle D$ B) $\angle B = \angle D$ C) $\angle B = \angle E$ D) $\angle A = \angle F$ | 1     |

|             |                                                                                                                                                                                                                                                                                                            |          |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q7.</b>  | Two dice are rolled together. What is the probability of getting a sum greater than 10 ?<br>A) $\frac{1}{9}$ B) $\frac{1}{6}$ C) $\frac{1}{12}$ D) $\frac{5}{18}$                                                                                                                                          | <b>1</b> |
| <b>Q8.</b>  | If the area of the base of a cone is $51\text{m}^2$ and its volume is $85\text{cm}^3$ , then the vertical height of the cone is :<br>A) $\frac{5}{6}$ cm                      B) $\frac{5}{3}$ cm                      C) $\frac{5}{2}$ cm                      D) 5 cm                                    | <b>1</b> |
| <b>Q9.</b>  | In the given figure, AC and AB are tangents to a circle centred at O. If $\angle COD = 120^\circ$ , then $\angle BAO$ is equal to:<br><br>A) $30^\circ$ B) $60^\circ$ C) $45^\circ$ D) $90^\circ$                         | <b>1</b> |
| <b>Q10.</b> | In the given figure, $AB \parallel PQ$ . If $AB = 6$ cm, $PQ = 2$ cm and $OB = 3$ cm, then the length of $OP$ is :<br><br>A) 9 cm                      B) 3 cm                      C) 4 cm                      D) 1 cm | <b>1</b> |
| <b>Q11.</b> | The 13th term from the end of the A.P. : 20, 13, 6, -1, ....., -148 is :<br>A) 57                      B) -57                      C) 64                      D) -64                                                                                                                                       | <b>1</b> |
| <b>Q12.</b> | Which of the following numbers cannot be the probability of happening of an event ?<br>A) 0                      B) 0.07                      C) $\frac{0.07}{3}$ D) $\frac{7}{0.01}$                                                                                                                      | <b>1</b> |
| <b>Q13.</b> | A quadratic equation whose roots are $(2 + \sqrt{3})$ and $(2 - \sqrt{3})$ is :<br>A) $x^2 - 4x + 1 = 0$ B) $x^2 + 4x + 1 = 0$<br>C) $4x^2 - 3 = 0$ D) $x^2 - 1 = 0$                                                                                                                                       | <b>1</b> |
| <b>Q14.</b> | If the mean and the median of a data are 12 and 15 respectively, then its mode is :<br>A) 13.5                      B) 21                      C) 6                      D) 14                                                                                                                             | <b>1</b> |
| <b>Q15.</b> | In the given figure, $AB = BC = 10$ cm. If $AC = 7$ cm, then the length of $BP$ is :                                                                                                                                                                                                                       | <b>1</b> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                 |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  <p>A) 3.5cm      B) 7cm      C) 6.5cm      D) 5cm</p>                                                                                                                                                                                                         |          |
| <b>Q16.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>If every term of the statistical data consisting of n terms is decreased by 2, then the mean of the data :</p> <p>A) decreases by 2      B) remains unchanged<br/>C) decreases by 2n      D) decreases by 1</p>                                                                                                                              | <b>1</b> |
| <b>Q17.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>If <math>\tan \theta = \frac{5}{12}</math>, then value of <math>\frac{\sin \theta + \cos \theta}{\sin \theta - \cos \theta}</math></p> <p>A) <math>\frac{-17}{7}</math>      B) <math>\frac{17}{7}</math>      C) <math>\frac{-7}{13}</math>      D) <math>\frac{17}{13}</math></p>                                                          | <b>1</b> |
| <b>Q18.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>In the given figure, AB is a tangent to the circle centred at O. If OA = 6 cm and <math>\angle OAB = 30^\circ</math>, then the radius of the circle is :</p>  <p>A) 3 cm      B) <math>\sqrt{3}</math>cm      C) 2 cm      D) <math>3\sqrt{3}</math>cm</p> | <b>1</b> |
| <p><b>Each of the following questions contains two statements i.e., ASSERTION and REASON, and has following four choices.</b></p> <p>A) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).<br/>B) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).<br/>C) Assertion (A) is true but reason (R) is false.<br/>D) Assertion (A) is false but reason (R) is true.</p> <p><b>Only one of which is the correct answer.</b></p> |                                                                                                                                                                                                                                                                                                                                                 |          |
| <b>Q19.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>ASSERTION (A):</b> The number <math>5^n</math> cannot end with the digit 0, where n is a natural number.<br/><b>REASON (R):</b> Prime factorisation of 5 has only two factors, 1 and 5.</p>                                                                                                                                               | <b>1</b> |
| <b>Q20.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>ASSERTION (A):</b> If the points A(4, 3) and B(x, 5) lie on a circle with centre O(2, 3), then the value of x is 2.<br/><b>REASON (R):</b> Centre of a circle is the mid-point of each chord of the circle.</p>                                                                                                                           | <b>1</b> |

**SECTION – B**  
**(Very Short Answers)**

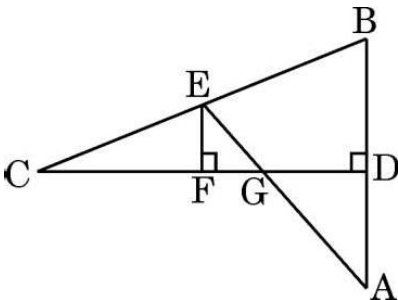
This section comprises of VSA of 2 marks each

| Q. No. | Question                                                                                                                                                                                                                                                               | Marks |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Q21.   | Show that $6^n$ can not end with the digit 0 for any natural number n.                                                                                                                                                                                                 | 2     |
| Q22.   | Find the ratio in which line $y = x$ divides the line segment joining the points (6,-3) and (1, 6).                                                                                                                                                                    | 2     |
| Q23.   | (A) If $a \cos \theta + b \sin \theta = m$ and $a \sin \theta - b \cos \theta = n$ , then prove that $a^2 + b^2 = m^2 + n^2$ .<br><b>OR</b><br>(B) In triangle ABC, right angled at B, if $\tan A = 1/\sqrt{3}$ , find the value of: $\sin A \cos C + \cos A \sin C$ . | 2     |
| Q24.   | In the fig. $\angle D = \angle E$ and $AD/DB = AE/EC$ . Prove that $\triangle BAC$ is an isosceles triangle.<br>                                                                     | 2     |
| Q25.   | (A) The line segment joining the points A(4, -5) and B(4, 5) is divided by the point P such that $AP: AB = 2 : 5$ . Find the coordinates of P.<br><b>OR</b><br>(B) Show that A(1,2), B(5,4), C(3,8) and D(-1,6) are vertices of a square ABCD.                         | 2     |

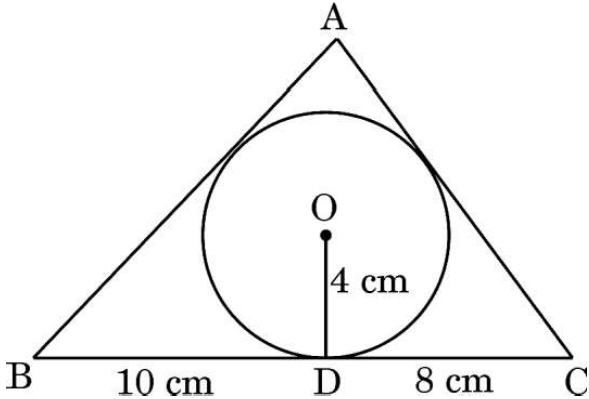
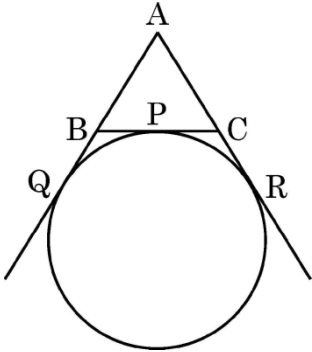
**SECTION – C**  
**(Short Answers)**

This section comprises of SA of 3 marks each

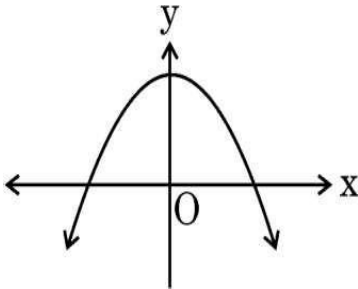
| Q. No. | Question                                                                                                                                                                                                                                                                              | Marks |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Q26.   | (A) If the system of linear equations:<br>$2x + 3y = 7$ and $2ax + (a + b)y = 28$<br>have infinite number of solutions, then find the values of 'a' and 'b'.<br><b>OR</b><br>(B) If $217x + 131y = 913$ and $131x + 217y = 827$ , then solve the equations for the values of x and y. | 3     |
| Q27.   | In an A.P., the sum of the first n terms is given by $S_n = 6n - n^2$ . Find its 30th term.                                                                                                                                                                                           | 3     |

|           |                                                                                                                                                                                                                                                                                                                                                            |         |       |       |       |       |       |       |           |    |    |    |    |    |   |   |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|-------|-------|-------|-------|-------|-----------|----|----|----|----|----|---|---|
| Q28.      | <p>In the given figure, CD is the perpendicular bisector of AB. EF is perpendicular to CD. AE intersects CD at G. Prove that <math>\frac{CF}{CD} = \frac{FG}{DG}</math></p>                                                                                               | 3       |       |       |       |       |       |       |           |    |    |    |    |    |   |   |
| Q29.      | <p>Find the mean of the following distribution :</p> <table><tr><td>Classes</td><td>0-15</td><td>15-30</td><td>30-45</td><td>45-60</td><td>60-75</td><td>75-90</td></tr><tr><td>Frequency</td><td>17</td><td>20</td><td>18</td><td>21</td><td>15</td><td>9</td></tr></table>                                                                               | Classes | 0-15  | 15-30 | 30-45 | 45-60 | 60-75 | 75-90 | Frequency | 17 | 20 | 18 | 21 | 15 | 9 | 3 |
| Classes   | 0-15                                                                                                                                                                                                                                                                                                                                                       | 15-30   | 30-45 | 45-60 | 60-75 | 75-90 |       |       |           |    |    |    |    |    |   |   |
| Frequency | 17                                                                                                                                                                                                                                                                                                                                                         | 20      | 18    | 21    | 15    | 9     |       |       |           |    |    |    |    |    |   |   |
| Q30.      | <p>(A) Prove that <math>\sqrt{3} + \sqrt{5}</math> is an irrational number.</p> <p style="text-align: center;"><b>OR</b></p> <p>(B) The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they change simultaneously at 7 a.m. at what time will they change together next ?</p> | 3       |       |       |       |       |       |       |           |    |    |    |    |    |   |   |
| Q31.      | <p>Prove that: <math>\frac{\sqrt{\sec A - 1}}{\sqrt{\sec A + 1}} + \frac{\sqrt{\sec A + 1}}{\sqrt{\sec A - 1}} = 2\operatorname{cosec} A</math></p>                                                                                                                                                                                                        | 3       |       |       |       |       |       |       |           |    |    |    |    |    |   |   |

| <p style="text-align: center;"><b>SECTION – D</b><br/><b>(Long Answers)</b><br/>This section comprises of LA type questions of 5 marks each</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Q. No.</b>                                                                                                                                   | <b>Question</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Marks</b> |
| <b>Q32.</b>                                                                                                                                     | <p>A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. Find the area of that part of the field in which the horse can graze. Also, find the increase in grazing area if length of rope is increased to 10 m. (Use <math>\pi = 3.14</math>)</p>                                                                                                                                                                                                                                                          | <b>5</b>     |
| <b>Q33.</b>                                                                                                                                     | <p>(A) A train travels at a certain average speed for a distance of 54 km and then travels a distance of 63 km at an average speed of 6 km/h more than the first speed. If it takes 3 hours to complete the journey, what was its first average speed ?</p> <p style="text-align: center;"><b>OR</b></p> <p>(B) Two pipes together can fill a tank in <math>15/8</math> hours. The pipe with larger diameter takes 2 hours less than the pipe with smaller diameter to fill the tank separately. Find the time in which each pipe can fill the tank separately.</p> | <b>5</b>     |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <p><b>Q34.</b></p> | <p>A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC are of lengths 10 cm and 8 cm respectively. Find the lengths of the sides AB and AC, if it is given that area of <math>\Delta ABC = 90 \text{ cm}^2</math>.</p>  <p style="text-align: center;"><b>OR</b></p> <p>If a circle touches the side BC of a triangle ABC at P and extended sides AB and AC at Q and R, respectively, prove that <math>AQ = \frac{1}{2} (BC + CA + AB)</math>. Find the perimeter of the <math>\Delta ABC</math> if <math>AQ = 15 \text{ cm}</math>.</p>  | <p><b>5</b></p> |
| <p><b>Q35.</b></p> | <p>As observed from the top of a 75 m high lighthouse from the sea-level, the angles of depression of the ship changes from <math>30^\circ</math> to <math>60^\circ</math> in 5 minutes. Find the speed of the ship if it is moving in a straight line. (Use <math>= \sqrt{3} \ 1.73</math>)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p><b>5</b></p> |

| <p style="text-align: center;"><b>SECTION - E</b><br/><b>(Case-study Based Questions)</b><br/>This section comprises of 3 case-study based questions of 4 marks each with three sub-parts.</p> |                                                                                                                                                                                                                                                                                                                                                 |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Q. No.                                                                                                                                                                                         | Question                                                                                                                                                                                                                                                                                                                                        | Marks        |
| <p><b>Q36.</b></p>                                                                                                                                                                             | <p>Singing bowls (hemispherical in shape) are commonly used in sound healing practices. Mallet (cylindrical in shape) is used to strike the bowl in a sequence to produce sound and vibration</p>  <p>One such bowl is shown here whose dimensions are :</p> | <p>1+1+2</p> |

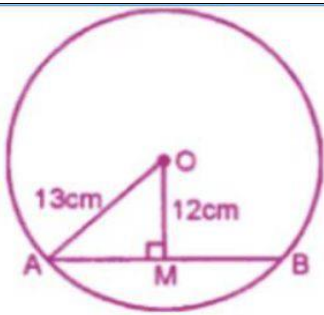
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|      | <p>Hemispherical bowl has outer radius 6 cm and inner radius 5 cm. Mallet has height of 10 cm and radius 2 cm.<br/>Based on the above, answer the following questions :</p> <p>(i) What is the volume of the material used in making the mallet ?<br/> (ii) The bowl is to be polished from inside. Find the inner surface area of the bowl.<br/> (iii) (a) Find the volume of metal used to make the bowl.</p> <p style="text-align: center;"><b>OR</b></p> <p>(iii)(b) Find total surface area of the mallet. (Use <math>\pi = 3 \cdot 14</math>)</p>                                                                                                                                                                                                                                                                                               |       |
| Q37. | <p>Eight Ball : This is a game played on a pool table with 15 balls numbered 1 through 15 and a cue ball that is solid white. Of the 15 numbered balls, 8 are a solid (non-white) colour and numbered 1 through 8 , and seven are striped balls numbered 9 through 15 .</p>  <p>The fifteen numbered pool balls (no cue ball) are placed in a large bowl and mixed, then one is drawn out.</p> <p>(i) What is the probability of drawing the eight ball ?<br/> (ii) What is the probability of drawing a number greater than fifteen ?<br/> (iii) (a) What is the probability of drawn ball is solid coloured and bears an even number ?</p> <p style="text-align: center;"><b>OR</b></p> <p>(iii) (b) What is the probability of drawing a multiple of three ?</p> | 1+1+2 |
| Q38. | <p>Rainbow is an arch of colours that is visible in the sky after rain or when water droplets are present in the atmosphere. The colours of the rainbow are generally, red, orange, yellow, green, blue, indigo and violet. Each colour of the rainbow makes a parabola. We know that any quadratic polynomial <math>p(x) = ax^2 + bx + c</math> (<math>a \neq 0</math>) represents a parabola on the graph paper.</p>                                                                                                                                                                                                                                                         | 1+1+2 |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  | <p>Based on the above, answer the following questions :</p> <p>(i) The graph of a rainbow <math>y = f(x)</math> is shown in the figure. Write the number of zeroes of the curve.</p> <p>(ii) If the graph of a rainbow does not intersect the x-axis but intersects y-axis at one point, then how many zeroes will it have ?</p> <p>(iii) (a) If a rainbow is represented by the quadratic polynomial <math>p(x) = x^2 + (a + 1)x + b</math>, whose zeroes are 2 and - 3, find the value of a and b.</p> <p style="text-align: center;"><b>OR</b></p> <p>(iii) (b) The polynomial <math>x^2 - 2x - (7p + 3)</math> represents a rainbow. If -4 is a zero of it, find the value of p.</p> |  |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

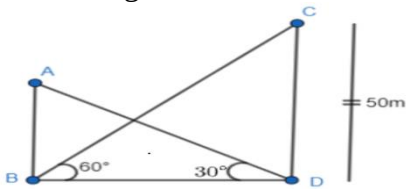
**MATHEMATICS (BASIC ) – Code No. 241**  
**PRE-BOARD QUESTION PAPER- MARKING SCHEME**  
**CLASS - X (2025 - 26)**

| <b>SECTION – A</b><br><b>(Multiple Choice Questions)</b> |                                                   |              |
|----------------------------------------------------------|---------------------------------------------------|--------------|
| <b>Q.No.</b>                                             | <b>Marking scheme</b>                             | <b>Marks</b> |
| <b>Q1.</b>                                               | (A) $k = 0$ or $k = 4$                            | <b>1</b>     |
| <b>Q2.</b>                                               | (C) $1/26$                                        | <b>1</b>     |
| <b>Q3.</b>                                               | (B) $\angle B = \angle D$                         | <b>1</b>     |
| <b>Q4.</b>                                               | (C) 5 units                                       | <b>1</b>     |
| <b>Q5.</b>                                               | (C) 55 cm                                         | <b>1</b>     |
| <b>Q6.</b>                                               | (C) ALWAYS LESS THAN 0                            | <b>1</b>     |
| <b>Q7.</b>                                               | (A) 6 cm                                          | <b>1</b>     |
| <b>Q8.</b>                                               | (B) Isosceles triangle                            | <b>1</b>     |
| <b>Q9.</b>                                               | (A) -2                                            | <b>1</b>     |
| <b>Q10.</b>                                              | (D) 10                                            | <b>1</b>     |
| <b>Q11.</b>                                              | (D) 10 m                                          | <b>1</b>     |
| <b>Q12.</b>                                              | (A) $2/3$                                         | <b>1</b>     |
| <b>Q13.</b>                                              | (C) 4                                             | <b>1</b>     |
| <b>Q14.</b>                                              | (D) $5/6$                                         | <b>1</b>     |
| <b>Q15.</b>                                              | (A) 0                                             | <b>1</b>     |
| <b>Q16.</b>                                              | (B) never                                         | <b>1</b>     |
| <b>Q17.</b>                                              | (B) $3\text{median} - \text{mode} = 2\text{mean}$ | <b>1</b>     |
| <b>Q18.</b>                                              | (D) 4.5 m                                         | <b>1</b>     |



|      |                                                                                                                                                                                                                                                                                                 |                  |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|      |                                                                                                                                                                                                                                                                                                 |                  |
| Q23. |  <p>Using, <math>OA^2 = OM^2 + AM^2</math> ( by pyth. theorem )<br/> <math>AM = 5</math> cm<br/> Length of chord = <math>2 \times 5 = 10</math> cm<br/> <b>OR</b><br/> Correct use of theorem .<br/> Proof</p> | 1<br>1<br>1<br>1 |
| Q24. | Formation of equation as<br>$a + 7d = 31$<br>$a + 14d = a + 10d + 16$<br>and $d = 4$<br>A.P = 3, 7, 11, 15, .....                                                                                                                                                                               | 1<br>1           |
| Q25. | Product of two numbers = HCF X LCM<br>Using above, LCM = 22338                                                                                                                                                                                                                                  | 1<br>1           |

### SECTION – C (Short Answers)

| Q. No. | Marking scheme                                                                                                                                                                                                                                             | Marks       |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Q26.   | <p>correct diagram</p>  <p>Use of correct concepts of trigonometry by picking the right angled triangles .<br/> To get the height of building = <math>50/3</math> m</p> | 1<br>1<br>1 |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                 |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <p><b>Q27.</b></p> | <p>(i)<br/> <math>\angle ACB = \angle FGE</math> (Given that <math>\triangle ABC \sim \triangle FEG</math>)<br/> <math>\Rightarrow \angle ACB/2 = \angle FGE/2</math><br/> <math>\Rightarrow \angle ACD = \angle FGH</math> (CD and GH are bisectors of <math>\angle C</math> and <math>\angle G</math> respectively) -----<br/> --- (1)<br/> In <math>\triangle ADC</math> and <math>\triangle FHG</math><br/> <math>\angle DAC = \angle HFG</math> [<math>\triangle ADC \sim \triangle FEG</math>]<br/> <math>\angle ACD = \angle FGH</math> [From equation (1)]<br/> Thus, <math>\triangle ADC \sim \triangle FHG</math> (AA criterion)<br/> <math>\Rightarrow CD/GH = AC/FG</math> [If two triangles are similar, then their corresponding sides are in the same ratio.]</p> <p>(ii)<br/> <math>\angle DBC = \angle HEG</math> [<math>\triangle ABC \sim \triangle FEG</math>]<br/> <math>\angle DCB = \angle HGE</math> [<math>\because \angle ACB/2 = \angle FGE/2</math>]<br/> Thus, <math>\triangle DCB \sim \triangle HGE</math> (AA criterion)</p> <p>(iii) If two angles of one triangle are respectively equal to two angles of another triangle, then the two triangles are similar.<br/> This is referred as AA similarity criterion for two triangles.<br/> In <math>\triangle DCA</math> and <math>\triangle HGF</math><br/> <math>\angle DAC = \angle HFG</math> [<math>\triangle ABC \sim \triangle FEG</math>]<br/> <math>\angle ACD = \angle FGH</math> [<math>\because \angle ACB = \angle FGE</math>]<br/> Thus, <math>\triangle DCA \sim \triangle HGF</math> (AA criterion)</p> <p><b>OR</b><br/> correct use of theorems<br/> Proof</p> | <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>2</b></p>                 |
| <p><b>Q28.</b></p> | <p><math>l = 15</math>, <math>c = 11</math>, <math>f = 15</math>, <math>h = 5</math><br/> Median formula <math>= l + \left( \frac{\frac{n}{2} - cf}{f} \right) \times h</math><br/> Calculation to get Median = 19.5</p> <p><b>OR</b></p> <p><math>L = 30</math>, <math>f_1 = 16</math>, <math>f_0 = f</math>, <math>f_2 = 12</math>, <math>h = 10</math><br/> Mode <math>= l + \left( \frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h</math><br/> Calculation to get <math>f = 10</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> |
| <p><b>Q29.</b></p> | <p>Formation of linear equation<br/> <math>9x - 4y = 2000</math> ...(i) and <math>7x - 3y = 2000</math> ...(2)<br/> Applying correct method to solve linear equations<br/> Calculation to get correct answer as 18000 rupees and 14000 rupees respectively.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p>                                                 |
| <p><b>Q30.</b></p> | <p>Section formula –<br/> <math>x = \frac{m_1x_2 + m_2x_1}{m_1 + m_2}</math>, <math>y = \frac{m_1y_2 + m_2y_1}{m_1 + m_2}</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>1</b></p>                                                                                 |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|             | Putting correct values in formula<br>Calculation to get Required point as (2 , -3)                                                                                                                                                                                                                                                                                                                                                                          | 1<br>1                                 |
| <b>Q31.</b> | Using Pythagoras theorem ,calculation of AC=25 cm<br>Sin A=7/25<br>Cos C =7/25<br><br><b>OR</b><br>LHS=secA(1-sinA)(secA+tanA)<br><br>SecA=1/ cosA and tanA=sinA/ cosA<br><br>Substitute these into the equation:<br>LHS=1/ cosA(1-sinA)(1/ cosA+sinA/ cosA<br>LHS=(1-sinA)(1+sinA)/ cosA·cosA<br>LHS=(1-sinA)(1+sinA)/cos <sup>2</sup> A<br><br>Now we 1-sin <sup>2</sup> A =cos <sup>2</sup> A<br><br>LHS=cos <sup>2</sup> A/ cos <sup>2</sup> A= 1 = RHS | 1<br>1<br>1<br><br>1<br><br>1<br><br>1 |

| <b>SECTION – D</b><br><b>(Long Answers)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                              |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Q. No.</b>                               | <b>Marking scheme</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Marks</b>                                 |
| <b>Q32.</b>                                 | Setting a relation between sides using Pythagoras<br>$(x+60)^2=(x+30)^2+(x)^2$<br>Formation of quadratic equation, $x^2 - 60x - 2700 = 0$<br>Solution of equation as x= 90 and -30<br>Required dimensions of field 90m and 120 m<br><br><b>OR</b><br>Setting an equation using speed,time and distance relation<br>Formation of quadratic equation, $x^2 - 100x - 300000 = 0$<br>Solution of equation as x= 600 and -500<br>Required average speed of plane 600km/h | 1<br><br>2<br>1<br>1<br><br>1<br>2<br>1<br>1 |
| <b>Q33.</b>                                 | Use identity $\sin^2 A + \cos^2 A = 1$<br><br>Correct use of algebraic and trigonometric identities<br><br>Correct Proof                                                                                                                                                                                                                                                                                                                                            | 1<br><br>2<br>2                              |

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <p><b>Q34.</b></p> | <p>i) Length of arc = <math>\frac{2\pi r \theta}{360} = 22</math> cm</p> <p>ii) area of minor sector = <math>\frac{\pi r^2 \theta}{360} = 231</math> sq. cm</p> <p>iii) Area of major sector = 1155 sq. cm</p> <p>iv) Area of minor segment = <math>\frac{\pi r^2 \theta}{360}</math> - area of corresponding triangle = 231 - <math>441\sqrt{3}/4</math></p> <p><b>OR</b></p> <p>i) Area where horse can graze = <math>\frac{\pi r^2 \theta}{360} = 19.62</math> sq. m</p> <p>ii) Difference in the area = 58.87 sq. m</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>3</p> |
| <p><b>Q35.</b></p> | <div data-bbox="255 672 941 1344" data-label="Image"> </div> <p>In the above figure, P, Q, R, S are points of contact<br/> AS = AP (The tangents drawn from an external point to a circle are equal.)<br/> <math>\angle SOA = \angle POA = \angle 1 = \angle 2</math> (Tangents drawn from a point outside of the circle, subtend equal angles at the centre)<br/> Similarly,<br/> <math>\angle 3 = \angle 4, \angle 5 = \angle 6, \angle 7 = \angle 8</math><br/> Since complete angle is <math>360^\circ</math> at the centre,<br/> We have,<br/> <math>\angle 1 + \angle 2 + \angle 3 + \angle 4 + \angle 5 + \angle 6 + \angle 7 + \angle 8 = 360^\circ</math><br/> <math>2(\angle 1 + \angle 3 + \angle 5 + \angle 7) = 360^\circ</math> (or) <math>2(\angle 2 + \angle 4 + \angle 6 + \angle 8) = 360^\circ</math><br/> <math>\angle 1 + \angle 3 + \angle 5 + \angle 7 = 180^\circ</math> (or) <math>\angle 2 + \angle 4 + \angle 6 + \angle 8 = 180^\circ</math><br/> From above figure,<br/> <math>\angle 1 + \angle 8 = \angle AOD, \angle 4 + \angle 5 = \angle BOC</math> and <math>\angle 2 + \angle 3 = \angle AOB, \angle 6 + \angle 7 = \angle COD</math><br/> Thus we have,<br/> <math>\angle AOD + \angle BOC = 180^\circ</math> (or) <math>\angle AOB + \angle COD = 180^\circ</math><br/> <math>\angle AOD</math> and <math>\angle BOC</math> are angles subtended by opposite sides of quadrilateral circumscribing a circle and the sum of the two is <math>180^\circ</math>.</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>          |

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**SECTION - E**  
**(Case-study Based Questions)**

| <b>Q. No.</b> | <b>Marking scheme</b>                                                                                                                                                                                                                                                                                                                                                         | <b>Marks</b>                                 |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Q36.</b>   | (i) Apparent capacity of glass= $\pi r^2 h$ =785 cubic cm<br>(ii) Actual capacity of glass = $\pi r^2 h - \frac{2}{3} \pi r^3$ =1570/3 cubic cm or 523.33 cu. cm<br>(iii) Capacity of container= 62800 cubic cm or 62.8 litre<br><b>Or</b><br>iv) Number of glasses =120 glasses                                                                                              | <b>1</b><br><b>1</b><br><b>2</b><br><b>2</b> |
| <b>Q37.</b>   | (i) Total number of rows of candies, by using formula $S_n = \frac{n}{2} (2a + (n-1)d)$ =18 row<br>(ii) candies are placed in last row( $a_{18}$ ) = $a + 17d$ = 37candies<br>(iii)The number of candies in 12th row. =25 candies<br><b>OR</b><br>If Aditya decides to make 15 rows, total candies will be placed by him with the same arrangement= $S_{15}$<br>= 255 candies | <b>1</b><br><b>1</b><br><b>2</b><br><b>2</b> |
| <b>Q38.</b>   | (i) The probability of drawing a ball having prime number is= 6/15 or 2/5<br>(ii) The probability of drawing an composite numbered ball is =8/15<br>(iii) The probability of drawing a ball having a multiple of three or an even number on it =10/15=2/3<br><b>OR</b><br>The probability of drawing a ball numbered at most 5 = 1/3                                          | <b>1</b><br><b>1</b><br><b>2</b><br><b>2</b> |

**PRE-BOARD EXAMINATION (2025-26)**  
**CLASS - X**  
**MATHEMATICS (BASIC) – Code No. 241**

**Maximum marks:80 Time:3 hours**

**General Instructions: -**

**Read the following instructions carefully and follow them: -**

1. This question paper contains 38 questions. All Questions are compulsory.
2. This Question Paper is divided into 5 Sections A, B, C, D and E.
3. In Section A, Question numbers 1-18 are multiple choice questions (MCQs) and question no.19 and 20 are Assertion- Reason based questions of 1 mark each.
4. In Section B, Question numbers 21-25 are very short answer (VSA) type questions, carrying 02 marks each.
5. In Section C, Question numbers 26-31 are short answer (SA) type questions, carrying 03 marks each.
6. In Section D, Question numbers 32-35 are long answer (LA) type questions, carrying 05 marks each.
7. In Section E, Question numbers 36-38 are case study-based questions carrying 4 marks each with sub parts of the values of 1, 1 and 2 marks each respectively.
8. There is no overall choice. However, an internal choice in 2 questions of Section B, 2 questions of Section C and 2 questions of Section D has been provided. An internal choice has been provided in all the 2 marks questions of Section E.
9. Draw neat and clean figures wherever required. Take  $\pi = 22/7$  wherever required if not stated.
10. Use of calculators is not allowed.

| <b>SECTION – A</b><br><b>(Multiple Choice Questions)</b><br>Each MCQ of 1mark, has four options with only one correct option, choose the correct option |                                                                                                                                                                                                    |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Q.No.</b>                                                                                                                                            | <b>Question</b>                                                                                                                                                                                    | <b>Marks</b> |
| <b>Q1.</b>                                                                                                                                              | Find the values of k for which the quadratic equation $kx(x - 3) + 9 = 0$ has real and equal roots<br>A) $k = 0$ or $k = 4$ B) $k = 1$ or $k = 4$<br>C) $k = -3$ or $k = 3$ D) $k = -4$ or $k = 4$ | <b>1</b>     |
| <b>Q2.</b>                                                                                                                                              | One card is drawn at random from a well-shuffled deck of 52 cards. What is the probability of getting a red Jack?<br><br>A) 1/52      B) 2/52      C) 1/26      D) 1/13                            | <b>1</b>     |
| <b>Q3.</b>                                                                                                                                              | If ABC and DEF are two triangles and $AB/DE=BC/FD$ , then the two triangles are similar if<br>A) $\angle A = \angle F$ B) $\angle B = \angle D$ C) $\angle A = \angle D$ D) $\angle B = \angle E$  | <b>1</b>     |
| <b>Q4.</b>                                                                                                                                              | The distance of the point P(4, -3) from the origin is<br>A) 1 unit      B) 7 units      C) 5 units      D) $\sqrt{7}$ units                                                                        | <b>1</b>     |

|             |                                                                                                                                                                                                                                                                                     |          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q5.</b>  | A sector is cut from a circle of radius 21 cm. The angle of the sector is $150^\circ$ . Find the length of the arc.<br>A) 56 cm      B) 57 cm      C) 55 cm      D) 58 cm                                                                                                           | <b>1</b> |
| <b>Q6.</b>  | The length of the tangent from an external point A on a circle with centre O is<br>A) always greater than OA      B) equal to OA<br>C) always less than OA      D) cannot be estimated                                                                                              | <b>1</b> |
| <b>Q7.</b>  | The length of a tangent from a point A at distance 10 cm from the center of the circle is 8cm. Find the radius of the circle.<br>A) 6 cm    B) 9cm      C) $\sqrt{164}$ cm      D) 5 cm                                                                                             | <b>1</b> |
| <b>Q8.</b>  | The points $(-4, 0)$ , $(4, 0)$ , $(0, 3)$ are the vertices of a:<br>A ) Right triangle      B) Isosceles triangle<br>C ) Equilateral triangle      D) Scalene triangle                                                                                                             | <b>1</b> |
| <b>Q9.</b>  | If $\alpha$ and $\beta$ are the zeroes of the polynomial $6x^2 + 12x - 18$ , then $\alpha + \beta$ is equal to<br>A ) -2      B) 2      C) 3      D) -3                                                                                                                             | <b>1</b> |
| <b>Q10.</b> | The value of k for which the system of linear equations $x + 2y = 3$ , $5x + ky + 7 = 0$ , has no solution is<br>A ) 3      B) 5      C) 5      D) 10                                                                                                                               | <b>1</b> |
| <b>Q11.</b> | A circle artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground, then the height of pole, if the angle made by the rope with the ground level is $30^\circ$ , is<br>A ) 5 m      B ) 20 m      C) 15 m      D) 10 m | <b>1</b> |
| <b>Q12.</b> | When a die is thrown, the probability of getting a number at least 3 is<br>A) $\frac{2}{3}$ B) $\frac{1}{3}$ C) $\frac{1}{2}$ D) $\frac{3}{6}$                                                                                                                                      | <b>1</b> |
| <b>Q13.</b> | The sum of exponents of prime factors in the prime-factorization of 196 is<br>A) 3      B) 5      C) 4      D) 2                                                                                                                                                                    | <b>1</b> |
| <b>Q14.</b> | Two dice are thrown at the same time. Find the probability of getting different numbers on both dice.<br>A ) $\frac{25}{36}$ B) $\frac{1}{36}$ C) $\frac{1}{6}$ D) $\frac{5}{6}$                                                                                                    | <b>1</b> |
| <b>Q15.</b> | If the points A $(4, 3)$ and B $(x, 5)$ are the two ends of diameter of the circle with center O $(2, 4)$ then the value of x is<br>A) 0      B) 1      C) 2      D) 3                                                                                                              | <b>1</b> |
| <b>Q16.</b> | The LCM of two numbers is 2400. Which of the following cannot be their HCF?<br>A) 300      B) 400      C) 500      D) 600                                                                                                                                                           | <b>1</b> |
| <b>Q17.</b> | Relationship between mean, mode and median is<br>A) $3\text{median} = 2\text{mode} + \text{mean}$ B) $3\text{median} - \text{mode} = 2\text{mean}$<br>C) $\text{median} = 2\text{mode} + 3\text{mean}$ D) $2\text{median} = 3\text{mode} + \text{mean}$                             | <b>1</b> |

|             |                                                                                                                                                                                                                   |          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q18.</b> | Two trees AB and CD are standing parallel to each other. The bigger tree 8 m high cast a shadow of 6 m. If height of smaller tree is 6m then shadow cast by it is<br>A) 2 m      B) 3.5m      C) 4m      D) 4.5 m | <b>1</b> |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

**Each of the following questions contains two statements i.e., ASSERTION and REASON, and has following four choices.**

- A) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 B) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).  
 C) Assertion (A) is true but reason (R) is false.  
 D) Assertion (A) is false but reason (R) is true.

**Only one of which is the correct answer.**

|             |                                                                                                                                                                                                                                                                      |          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q19.</b> | <b>ASSERTION (A):</b> If in a circle, the radius of the circle is 3 cm and distance of a point from the center of a circle is 5 cm, then length of the tangent will be 4 cm.<br><br><b>REASON (R):</b> $(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$ | <b>1</b> |
| <b>Q20.</b> | <b>ASSERTION (A):</b> The equation $x^2 + 3x + 1 = (x - 1)^2$ is a quadratic equation.<br><b>REASON (R):</b> Any equation of the form $ax^2 + bx + c = 0$ , where a is not 0, is called a quadratic equation.                                                        | <b>1</b> |

### SECTION – B (Very Short Answers)

This section comprises of VSA of 2 marks each

| <b>Q. No.</b> | <b>Question</b>                                                                                                                                                                                                                                                  | <b>Marks</b> |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Q21.</b>   | Explain why $3 \times 5 \times 7 + 7$ , is a composite number?                                                                                                                                                                                                   | <b>2</b>     |
| <b>Q22.</b>   | If one zero of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other. Find the value of a.<br><br><b>OR</b><br>If $\alpha$ and $\beta$ are the zeros of the polynomial $f(x) = x^2 + 5x + k$ such that $\alpha - \beta = 1$ , find the value of k. | <b>2</b>     |
| <b>Q23.</b>   | Find the length of a chord which is at a distance of 12 cm from the center of a circle of radius 13 cm.<br><br><b>OR</b><br>A circle touches all the four sides of a quadrilateral ABCD from inside. Prove that $AB + CD = BC + DA$                              | <b>2</b>     |

|             |                                                                                                                                     |          |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q24.</b> | If the 8 <sup>th</sup> term of an AP is 31 and its 15 <sup>th</sup> term is 16 more than the 11 <sup>th</sup> term.<br>Find the AP. | <b>2</b> |
| <b>Q25.</b> | Given that HCF (306, 1314) is 18. Find LCM (306,1314)                                                                               | <b>2</b> |

**SECTION – C**  
**(Short Answers)**

This section comprises of SA of 3 marks each

This section comprises of SA or S marks each

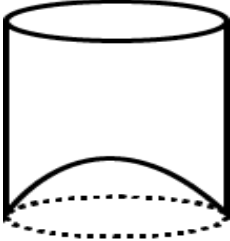
| Q. No.         | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Marks   |         |         |         |         |         |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|---|---|----|----|---|---|---|----------------|-------|-------|-------|-------|-------|-------|-------|-----------|---|----|---|----|----|---|---|---|
| Q26.           | The angle of elevation of the top of a building from the foot of the tower is $30^\circ$ and the angle of elevation of the top of the tower from the foot of the building is $60^\circ$ . If the tower is 50 m high, find the height of the building.                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3       |         |         |         |         |         |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Q27.           | CD and GH are respectively the bisectors of $\angle ACB$ and $\angle EGF$ such that D and H lie on sides AB and FE of $\triangle ABC$ and $\triangle EFG$ respectively. If $\triangle ABC \sim \triangle FEG$ , show that:<br>(i) $CD / GH = AC / FG$<br>(ii) $\triangle DCB \sim \triangle HGE$<br>(iii) $\triangle DCA \sim \triangle HGF$<br><br><b>OR</b><br>Prove that if a line divides any two sides of a triangle in the same ratio, then the line is parallel to the third side.                                                                                                                                                                                                                   | 3       |         |         |         |         |         |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Q28.           | Calculate the median from the following frequency distribution. <table border="1"><tr><td>Class</td><td>5 - 10</td><td>10 – 15</td><td>15 - 20</td><td>20 - 25</td><td>25 - 30</td><td>30 - 35</td><td>35 - 40</td></tr><tr><td>Frequency</td><td>5</td><td>6</td><td>15</td><td>10</td><td>5</td><td>4</td><td>2</td></tr></table><br><b>OR</b><br>The mode of the following frequency distribution is 36. Find the missing frequency f . <table border="1"><tr><td>Class interval</td><td>0- 10</td><td>10-20</td><td>20-30</td><td>30-40</td><td>40-50</td><td>50-60</td><td>60-70</td></tr><tr><td>Frequency</td><td>8</td><td>10</td><td>f</td><td>16</td><td>12</td><td>6</td><td>7</td></tr></table> | Class   | 5 - 10  | 10 – 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 | Frequency | 5 | 6 | 15 | 10 | 5 | 4 | 2 | Class interval | 0- 10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | Frequency | 8 | 10 | f | 16 | 12 | 6 | 7 | 3 |
| Class          | 5 - 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 – 15 | 15 - 20 | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Frequency      | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6       | 15      | 10      | 5       | 4       | 2       |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Class interval | 0- 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10-20   | 20-30   | 30-40   | 40-50   | 50-60   | 60-70   |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Frequency      | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10      | f       | 16      | 12      | 6       | 7       |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |
| Q29.           | The ratio of incomes of two persons is 9: 7 and the ratio of their expenditures is 4:3 If each of them manages to save ₹2000 per month, then find their monthly incomes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3       |         |         |         |         |         |         |         |           |   |   |    |    |   |   |   |                |       |       |       |       |       |       |       |           |   |    |   |    |    |   |   |   |

|             |                                                                                                                                                                                                                                                    |          |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q30.</b> | Find the coordinates of the point which divides the line segment joining the points A (–5, 11) and B (4, –7) in the ratio 7: 2 (i) Internally (ii) Externally.                                                                                     | <b>3</b> |
| <b>Q31.</b> | <p>In <math>\triangle ABC</math>, right-angled at B, AB = 24 cm, BC = 7 cm. Determine:</p> <p>(i) <math>\sin A</math> (ii) <math>\cos C</math></p> <p><b>OR</b></p> <p>Prove that :<br/> <math>\sec A (1 - \sin A)(\sec A + \tan A) = 1</math></p> | <b>3</b> |

| <p style="text-align: center;"><b>SECTION – D</b><br/> <b>(Long Answers)</b><br/> <i>This section comprises of LA type questions of 5 marks each</i></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Q. No.</b>                                                                                                                                            | <b>Question</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Marks</b> |
| <b>Q32.</b>                                                                                                                                              | <p>The diagonal of a rectangular field is 60 meters more than the shorter side. If, the longer side is 30 meters more than the shorter side, find the sides of the field.</p> <p><b>OR</b></p> <p>In a flight for 3000 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 100 km/hr and consequently time of flight increased by one hour. Find the original duration of flight</p>                                                                                                                                                                                 | <b>5</b>     |
| <b>Q33.</b>                                                                                                                                              | Prove that: $\frac{\sin A - \cos A + 1}{\sin A + \cos A - 1} = \frac{1}{\sec A - \tan A}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>5</b>     |
| <b>Q34.</b>                                                                                                                                              | <p>In a circle of radius 21 cm, a minor arc subtends an angle of <math>60^\circ</math> at the centre. Then find out</p> <p>i) Length of minor arc.<br/> ii) Area of minor sector<br/> iii) Area of major sector<br/> iv) Area of corresponding minor segment</p> <p><b>OR</b></p> <p>A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. Find</p> <p>(i) the area of that part of the field in which the horse can graze.<br/> (ii) the increase in the grazing area if the rope were 10 m long instead of 5 m.<br/> (Use <math>\pi = 3.14</math>)</p> | <b>5</b>     |
| <b>Q35.</b>                                                                                                                                              | Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>5</b>     |
| <b>SECTION - E</b>                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |

**(Case-study Based Questions)**

This section comprises of 3 case-study based questions of 4 marks each with three sub-parts.

| Q. No. | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Marks |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Q36.   | <p><b>Read the text carefully and answer the questions:</b></p> <p>A juice seller is serving his customers using cylindrical container with radius 20cm and height 50cm. He serves juice into a glass as shown in Fig. The inner diameter of the cylindrical glass is 5 cm, but the bottom of the glass had a hemispherical raised portion which reduced the capacity of the glass.</p>  |       |
|        | <p>i) If the height of a glass was 10 cm, find the apparent capacity of the glass.</p>                                                                                                                                                                                                                                                                                                                                                                                    | 1     |
|        | <p>ii) Find its actual capacity. (Use <math>\pi = 3.14</math>)</p>                                                                                                                                                                                                                                                                                                                                                                                                        | 1     |
|        | <p>iii) Find the capacity of the container in litre?</p>                                                                                                                                                                                                                                                                                                                                                                                                                  | 2     |
|        | <p><b>OR</b></p> <p>How many glasses he serves if the container is full?</p>                                                                                                                                                                                                                                                                                                                                                                                              | 2     |
| Q37.   | <p><b>Read the text carefully and answer the questions:</b></p> <p>Suman is celebrating his birthday. He invited his friends. He bought a packet of toffees/candies which contains 360 candies. He arranges the candies such that in the first row there are 3 candies, in second there are 5 candies, in third there are 7 candies and so on.</p>                                    |       |
|        | <p>(i) Find the total number of rows of candies.</p>                                                                                                                                                                                                                                                                                                                                                                                                                      | 1     |
|        | <p>(ii) How many candies are placed in last row?</p>                                                                                                                                                                                                                                                                                                                                                                                                                      | 1     |
|        | <p>(iii) Find the number of candies in 12th row.</p>                                                                                                                                                                                                                                                                                                                                                                                                                      | 2     |
|        | <p style="text-align: center;"><b>OR</b></p> <p>If Aditya decides to make 15 rows, then how many total candies will be placed by him with the same arrangement?</p>                                                                                                                                                                                                                                                                                                       |       |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| Q38. | <p><b>Read the text carefully and answer the questions:</b></p> <p>There are 15 balls numbered from 1 to 15 are used in a game. Players come and pick the ball randomly to play the game. Then</p>  <p>(i) What is the probability of drawing a ball having prime number?</p> <p>(ii) What is the probability of drawing a composite number?</p> <p>(iii) What is the probability of drawing a multiple of three or an even number on it?</p> <p style="text-align: center;">OR</p> <p>What is the probability of drawing a ball numbered at most 5?</p> <p>*****</p> | <p>1</p> <p>1</p> <p>2</p> <p>2</p> |

**सेट: 4**  
प्रथम पूर्व परिषदीय परीक्षा (2025-26)  
हिन्दी(पाठ्यक्रम-अ) विषय कोड-002  
कक्षा: दसवीं  
विषय- हिंदी

निर्धारित समय: 3 घंटे

अधिकतम अंक : 80

सामान्य निर्देश :

निम्नलिखित निर्देशों को बहुत सावधानी से पढ़िए और उनका अनुपालन कीजिए:

- (i) इस प्रश्नपत्र में कुल चार खंड हैं- क, ख, ग, घ ।
- (ii) इस प्रश्नपत्र में कुल 15 प्रश्न हैं, सभी प्रश्न अनिवार्य हैं।
- (iii) प्रश्नपत्र में आंतरिक विकल्प दिए गए हैं।
- (iv) सभी प्रश्नों के उत्तर दिए गए निर्देशों का पालन करते हुए लिखें ।

| प्रश्न संख्या | खंड – क<br>(अपठित बोध)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | अंक<br>(14) |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 1             | <p>निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर उस पर आधारित पूछे गए प्रश्नों के उत्तर लिखिए:</p> <p>'जननी जन्मभूमिश्च स्वर्गादपि गरीयसी' अर्थात् जन्म देने वाली माता और जन्म-भूमि स्वर्ग से भी बढ़कर है। जन्म देने वाली माँ जननी कहलाती है। जिस परिश्रम व स्नेह से एक माता अपनी संतान का पालन करती है, वह कोई नहीं कर सकता। वह उसे अपने अमृतमय दुग्ध का पान कराती है। उसे अच्छी शिक्षा और अच्छे संस्कार देती है, समाज में रहने योग्य बनाती है।</p> <p>संतान का सुख ही उसके लिए सर्वोपरि होता है। माता के इस उपकार का ऋण उसकी संतान आजीवन नहीं चुका सकती। जिस प्रकार व्यक्ति अपनी माता के ऋण को नहीं चुका सकता है, उसी प्रकार हम जन्म-भूमि के ऋण को भी नहीं चुका सकते हैं। इस जन्म-भूमि के हम पर अनेक उपकार हैं। हम इसकी ममतामयी गोद में खेलकर बड़े होते हैं। हमारा शरीर इसके उगाए हुए अन्न, फल, मेवे आदि खाकर पुष्ट होता है।</p> <p>मातृ-भूमि पर बहने वाली नदियों के अमृतमय जल का हम सेवन करते हैं। यह ऐसी ममतामयी माँ है, जो जन्म से लेकर मृत्यु तक, पापी, पुण्यात्मा, धनी, निर्धन, स्त्री-पुरुष, पशु-पक्षी, कीट-पतंगें आदि सभी को बिना किसी भेद-भाव के आश्रय देती है। इसलिए हमारा भी कर्तव्य है कि हम अपनी मातृ-भूमि की सेवा तन-मन-धन से करें। अब यहाँ विचारणीय यह है कि स्वर्ग क्या है? पृथ्वी-लोक पर रहने वाले लोगों के लिए तो यह एक काल्पनिक स्थान है, जो अक्षुण्ण सुखों और आनंद का मनोरम स्थल है। जहाँ केवल सुख-ही-सुख हैं, जहाँ व्यक्ति को भूख-प्यास नहीं लगती, जहाँ हमेशा वसंत ऋतु ही रहती है।</p> | 7           |

|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |   |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|     | हमारे यहाँ के पुरोहित, पंडित इसी काल्पनिक सुख की दुहाई दे-देकर व्यक्तियों को दान-पुण्य के लिए प्रेरित करते हैं। एक ओर स्वर्ग का आकर्षण दिखाकर और दूसरी ओर नरक के भयावह दृश्य दिखाकर - पंडितों ने लोगों की कल्पना को मूर्तरूप देने का प्रयास किया है। यदि हम स्वर्ग का अस्तित्व मान भी लें, तो भी जननी और जन्म-भूमि के महत्व के समक्ष स्वर्ग का सुख कुछ नहीं है। देवता भी भारत-भूमि पर जन्म लेने के लिए लालायित रहते हैं। ऐसी महान संस्कृति वाले देश में जन्म लेना वस्तुतः गौरव की बात है। अपनी जन्म-भूमि को वर्तमान संकटों से भी मुक्ति दिलवाना हम सबका प्रण है। |   |
| (क) | जन्म देने वाली माता और जन्म-भूमि स्वर्ग से भी बढ़कर है। कथन के लिए उचित विकल्प का चयन कीजिए-<br>1. जननी परिश्रम व स्नेह से अपनी संतान का पालन करती है<br>2. माता का ऋण उसकी संतान चुका सकती है।<br>3. माता अपनी संतान को अच्छी शिक्षा व अच्छे संस्कार देती है।<br>4. जन्मभूमि की ममतामयी गोद में खेलकर हम बड़े होते हैं।<br>(i) कथन 1 सही है।<br>(ii) कथन 1 और 2 सही हैं।<br>(iii) कथन 1, 3 और 4 सही हैं।<br>(iv) 1, 2 और 3 सही हैं।                                                                                                                             | 1 |
| (ख) | कथन और कारण को पढ़कर उपयुक्त विकल्प चुनिए-<br><b>कथन</b> : भारत जैसे महान संस्कृति वाले देश में जन्म लेना गौरव की बात है।<br><b>कारण</b> : देवता भी भारत-भूमि पर जन्म लेने के लिए लालायित रहते हैं।<br><b>विकल्प</b><br>(i) कथन गलत है, किंतु कारण सही है।<br>(ii) कथन और कारण दोनों गलत हैं।<br>(iii) कथन सही है और कारण, कथन की सही व्याख्या है।<br>(iv) कथन सही है, किंतु कारण, कथन की सही व्याख्या नहीं है।                                                                                                                                                  | 1 |
| (ग) | किस प्रकार के ऋण को चुकाया नहीं जा सकता है?<br>(i) मातृ-ऋण को<br>(ii) पितृ-ऋण को<br>(iii) गुरु-ऋण को<br>(iv) भ्रातृ-ऋण को                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 |
| (घ) | स्वर्ग से भी सर्वोच्च स्थान किसे और क्यों दिया गया है?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2 |
| (ङ) | जननी व जन्मभूमि के प्रति हमारा क्या कर्तव्य है?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2 |

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| 2   | निम्नलिखित काव्यांश को ध्यानपूर्वक पढ़कर उस पर आधारित पूछे गए प्रश्नों के उत्तर लिखिए:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 7 |
|     | <p>निर्मल तेरा नीर, अमृत के सम उत्तम है,<br/> शीतल मंद सुगंध पवन हर लेता श्रम है,<br/> षट्क्रतुओं का विविध दृश्य युत अद्भुत क्रम है,<br/> हरियाली फर्श नहीं मखमल से कम है,<br/> शुचि-सुधा सींचता रात में, तुझ पर चंद्रप्रकाश है।<br/> हे मातृभूमि, दिन में तरणि, करता तम का नाश है।</p> <p>सुरभित, सुंदर सुखद सुमन तुझ पर खिलते हैं,<br/> भाँति-भाँति के सरस, सुधोपम फल मिलते हैं,<br/> औषधियाँ हैं प्राप्त एक से एक निराली,<br/> खानें शोभित कहीं धातु वर रत्नों वाली,<br/> जो आवश्यक होते हमें, मिलते सभी पदार्थ हैं।</p> <p>हे मातृभूमि वसुधा ! धरा, तेरे नाम यथार्थ हैं।<br/> क्षमामयी, दयामयी है, तू क्षेममयी है,<br/> सुधामयी, वात्सल्यमयी तू प्रेममयी है,<br/> विभवशालिनी, विश्वपालिनी, दुखहीं है,<br/> हे शरणदायिनी देवी! तू करती सबका त्राण है।<br/> हे मातृभूमि ! संतान हम, तू जननी, तू प्राण है।</p> |   |
| (क) | <p>शीतल-सुगंधित पवन व्यक्ति पर क्या प्रभाव डालती है?</p> <p>(i) वह उसकी श्रम करने की क्षमता हर लेती है।<br/> (ii) वह उसे श्रम करने से रोक लेती है।<br/> (iii) वह उसे विश्राम करने पर विवश कर देती है।<br/> (iv) वह उसकी थकान को दूर भगा देती है।</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1 |
| (ख) | <p>धरती की 'हरियाली' की तुलना किससे की गई है?</p> <p>(i) कोमल-मखमली कपड़े से<br/> (ii) कोमल-समतल धरा से<br/> (iii) रंग-बिरंगे कपड़े से<br/> (iv) हरी-भरी धरा से</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 |

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| (ग) | कथन और कारण पर विचार करते हुए सही विकल्प चुनिए<br><b>कथन:</b> धरती को जननी कहा गया है।<br><b>कारण:</b> धरती से प्राप्त जल अमृत समान होता है।<br>(i) कथन सही है, किंतु कारण गलत है।<br>(ii) कथन गलत है, किंतु कारण सही है।<br>(iii) कथन और कारण दोनों सही हैं और कथन कारण की सही व्याख्या है।<br>(iv) कथन और कारण दोनों सही हैं, परंतु कारण कथन की सही व्याख्या नहीं है। | 1         |
| (घ) | 'दिन में तरणि, करता तम का नाश है। पंक्ति में 'तरणि' से क्या तात्पर्य है?                                                                                                                                                                                                                                                                                                | 2         |
| (ङ) | पद्यांश में मातृभूमि की किस विशेषता का उल्लेख है?                                                                                                                                                                                                                                                                                                                       | 2         |
|     | <b>खंड - ख ( व्यावहारिक व्याकरण)</b>                                                                                                                                                                                                                                                                                                                                    | <b>16</b> |
| 3   | <b>निर्देशानुसार 'रचना के आधार पर वाक्य भेद' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए:</b>                                                                                                                                                                                                                                                    | (4x1=4)   |
| (क) | सिक्किम के स्वतंत्र रजवाड़ा बनने के समय टूरिस्ट उद्योग इतना नहीं फला-फूला था।<br>(मिश्र वाक्य में बदलिए)                                                                                                                                                                                                                                                                | 1         |
| (ख) | जापान जाने का जब अवसर मिला, तब मैं हिरोशिमा गया।<br>(संयुक्त वाक्य में रूपांतरित कीजिए)                                                                                                                                                                                                                                                                                 | 1         |
| (ग) | नेताजी की आँखों पर चश्मा तो था, लेकिन संगमरमर का नहीं था।<br>(सरल-वाक्य में रूपांतरित कीजिए)                                                                                                                                                                                                                                                                            | 1         |
| (घ) | विज्ञान के दुरुपयोग के प्रति बुद्धि का विद्रोह स्वाभाविक था।<br>(रचना के आधार पर वाक्य का भेद लिखिए)                                                                                                                                                                                                                                                                    | 1         |
| (ङ) | जब बालगोबिन भगत खेतों में रोपाई कर रहे थे, तब लोग उन्हें कनखियों से देख रहे थे।<br>(आश्रित उपवाक्य छाँटकर उसका भेद भी लिखिए)                                                                                                                                                                                                                                            | 1         |

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| 4   | <b>निर्देशानुसार 'वाच्य' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए:</b>               | (4x1=4) |
| (क) | एक संस्कृत व्यक्ति किसी नई चीज़ की खोज करता है।<br>(वाच्य पहचानकर वाच्य भेद का नाम लिखिए)                      | 1       |
| (ख) | हम सभी सैलानियों द्वारा अब जीप से उतरकर बर्फ पर कूदा जा रहा था।<br>(कर्तृवाच्य में बदलिए)                      | 1       |
| (ग) | हमने मइयाँ के आँचल की - प्रेम और शांति के चंदोवे की छाया न छोड़ी...।<br>(वाच्य पहचानकर वाच्य भेद का नाम लिखिए) | 1       |

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| (घ) | छुट्टी में देर तक सोएँगे। (भाव वाच्य में बदलिए)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1         |
| (ङ) | जिस वाक्य में क्रिया का केंद्र बिंदु कर्ता हो, उसमें कौन-सा वाच्य होता है?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1         |
| 5   | <b>निर्देशानुसार 'पद परिचय' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के रेखांकित पदों का पद-परिचय लिखिए:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | (4x1=4)   |
| (क) | <u>अच्छे-अच्छों</u> ने इस सवाल का हल ढूँढ़ने का प्रयास किया।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1         |
| (ख) | शशि <u>दसवीं</u> कक्षा में पढ़ती है।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1         |
| (ग) | वे गृहस्थ थे, <u>लेकिन</u> उनकी सब चीज़ साहब की थी।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1         |
| (घ) | मोहन उसकी बातें सुनकर <u>ठहाके मारकर</u> हंसने लगा।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1         |
| (ङ) | मैं बचपन में <u>दुबली</u> और मरियल भी थी।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1         |
| 6   | <b>निर्देशानुसार 'अलंकार' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों की रेखांकित काव्य पंक्तियों में अलंकार पहचान कर लिखिए :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (4x1=4)   |
| (क) | 'छोड़कर तालाब मेरी झोपड़ी में <u>खिल रहे जलजात</u> '<br>(रेखांकित पंक्ति में अलंकार पहचानकर लिखिए)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1         |
| (ख) | "सिर फट गया उसका <u>मानो अरुण रंग का घड़ा हो।</u> "<br>(रेखांकित पंक्ति में अलंकार पहचानकर लिखिए)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1         |
| (ग) | <u>कोटि कुलिस सम वचनु तुम्हारा।</u><br>(रेखांकित पंक्ति में अलंकार पहचानकर लिखिए)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1         |
| (घ) | " <u>अंबर-पनघट में डुबो रही तारा-घट उषा नागरी।</u> "<br>(रेखांकित पंक्ति में अलंकार पहचानकर लिखिए)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1         |
| (ङ) | अतिशयोक्ति अलंकार का एक उदहारण लिखिए।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1         |
|     | <b>खंड - ग (पाठ्यपुस्तक एवं पूरक पाठ्यपुस्तक)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>30</b> |
| 7   | निम्नलिखित पठित गद्यांश पर आधारित बहुविकल्पीय प्रश्नों के सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए:<br>बालगोबिन भगत की संगीत-साधना का चरम उत्कर्ष उस दिन देखा गया जिस दिन उनका बेटा मरा। इकलौता बेटा था वह! कुछ सुस्त और बोदा-सा था, किंतु इसी कारण बालगोबिन भगत उसे और भी मानते। उनकी समझ में ऐसे आदमियों पर ही ज्यादा नज़र रखनी चाहिए या प्यार करना चाहिए, क्योंकि ये निगरानी और मुहब्बत के ज्यादा हकदार होते हैं।<br><br>बड़ी साध से उसकी शादी कराई थी, पतोहू बड़ी ही सुभग और सुशील मिली थी। घर की पूरी प्रबंधिका बनकर भगत को बहुत कुछ दुनियादारी से निवृत्त कर दिया था उसने। उनका बेटा बीमार | (5x1=5)   |

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|  | है, इसकी खबर रखने की लोगों को कहाँ फुरसत ! किंतु मौत तो अपनी ओर सबका ध्यान खींचकर ही रहती है। हमने सुना, बालगोबिन भगत का बेटा मर गया। कुतूहलवश उनके घर गया। देखकर दंग रह गया।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|  | <p>बेटे को आँगन में एक चटाई पर लिटाकर एक सफ़ेद कपड़े से ढाँक रखा है। वह कुछ फूल तो हमेशा ही रोपते रहते, उन फूलों में से कुछ तोड़कर उस पर बिखरा दिए हैं; फूल और तुलसीदल भी। सिरहाने एक चिराग जला रखा है। और, उसके सामने ज़मीन पर ही आसन जमाए गीत गाए चले जा रहे हैं! वही पुराना स्वर, वही पुरानी तल्लीनता। घर में पतोहू रो रही है जिसे गाँव की स्त्रियाँ चुप कराने की कोशिश कर रही हैं। किंतु, बालगोबिन भगत गाए जा रहे हैं! हाँ, गाते-गाते कभी-कभी पतोहू के नज़दीक भी जाते और उसे रोने के बदले उत्सव मनाने को कहते।</p> <p>आत्मा परमात्मा के पास चली गई, विरहिनी अपने प्रेमी से जा मिली, भला इससे बढ़कर आनंद की कौन बात? मैं कभी-कभी सोचता, यह पागल तो नहीं हो गए। किंतु नहीं, वह जो कुछ कह रहे थे उसमें उनका विश्वास बोल रहा था-वह चरम विश्वास जो हमेशा ही मृत्यु पर विजयी होता आया है।</p> |  |

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| (क) | <p>भगत जी की पुत्रवधू की विशेषता/विशेषताएँ है/हैं-</p> <ol style="list-style-type: none"> <li>1. वह सुंदर थी।</li> <li>2. वह सुशील थी।</li> <li>3. वह बुद्धिमान थी।</li> <li>4. वह घमंडी थी।</li> </ol> <p>विकल्प</p> <ol style="list-style-type: none"> <li>(i) कथन 1,2 और 3 सही हैं।</li> <li>(ii) कथन 1, 3 और 4 सही हैं।</li> <li>(iii) केवल कथन 3 सही है।</li> <li>(iv) कथन 1, 2 और 4 सही हैं।</li> </ol>                                             | 1 |
| (ख) | <p>बालगोबिन भगत अपने बेटे को ज़्यादा मानते थे क्योंकि-</p> <ol style="list-style-type: none"> <li>1. वह बुद्धिमान और सुशील था।</li> <li>2. वह मेहनती और ईमानदार था।</li> <li>3. वह बलवान और परिश्रमी था।</li> <li>4. वह सुस्त और कमजोर था।</li> </ol> <p>विकल्प</p> <ol style="list-style-type: none"> <li>(i) कथन 1 और 2 सही हैं।</li> <li>(ii) कथन 1, 3 और 4 सही हैं।</li> <li>(iii) केवल कथन 4 सही है।</li> <li>(iv) कथन 1, 2 और 4 सही हैं।</li> </ol> | 1 |

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| (ग) | (ग) कथन और कारण को पढ़कर उपयुक्त विकल्प चुनिए-<br><b>कथन</b> : मृत्यु आनंद का विषय है।<br><b>कारण</b> : आत्मा का परमात्मा में विलय हो जाता है।<br><b>विकल्प</b><br>(i) कथन गलत है, किंतु कारण सही है।<br>(ii) कथन और कारण दोनों ही गलत हैं।<br>(iii) कथन सही है और कारण, कथन की सही व्याख्या है।<br>(iv) कथन सही है, किंतु कारण, कथन की सही व्याख्या नहीं है।                                                     | 1       |
| (घ) | गद्यांश में 'विरहिनी' और 'प्रेमी' शब्द प्रतीक हैं-<br>(i) स्त्री और पुरुष का<br>(ii) लड़की और लड़का का<br>(iii) पत्नी और पति का<br>(iv) आत्मा और परमात्मा का                                                                                                                                                                                                                                                      | 1       |
| (ङ) | बालगोबिन भगत के अनुसार निगरानी और प्यार के ज़्यादा हकदार कौन होते हैं?<br>(i) बुद्धिमान लोग<br>(ii) अमीर लोग<br>(iii) गरीब लोग<br>(iv) मानसिक रूप से कमज़ोर                                                                                                                                                                                                                                                       | 1       |
| 8   | <b>निर्धारित गद्य पाठों के आधार पर निम्नलिखित चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए:</b>                                                                                                                                                                                                                                                                                  | (3x2=6) |
| (क) | क्या 'लखनवी अंदाज' पाठ में नवाबी परंपरा यानि पतनशील सामंती वर्ग पर व्यंग्य किया गया है? स्पष्ट कीजिए।                                                                                                                                                                                                                                                                                                             | 2       |
| (ख) | लेखक की दृष्टि में 'सभ्यता' और 'संस्कृति' की सही समझ अब तक क्यों नहीं बन पाई है?                                                                                                                                                                                                                                                                                                                                  | 2       |
| (ग) | लेखक रामवृक्ष बेनीपुरी जी के अनुसार बालगोबिन भगत ने किस प्रकार प्रचलित सामाजिक मान्यताओं का खंडन किया? विचार करके लिखिए।                                                                                                                                                                                                                                                                                          | 2       |
| (घ) | नेताजी की मूर्ति देखने में कैसी लगती थी और उसमें क्या बड़ी कमी थी?                                                                                                                                                                                                                                                                                                                                                | 2       |
| 9   | <b>निम्नलिखित पठित काव्यांश पर आधारित बहुविकल्पीय प्रश्नों के सर्वाधिक उपयुक्त उत्तर वाले विकल्प चुनकर लिखिए:</b><br>मिला कहाँ वह सुख जिसका मैं स्वप्न देखकर जाग गया।<br>आलिंगन में आते-आते मुसक्या कर जो भाग गया।<br>जिसके अरुण-कपोलों की मतवाली सुंदर छाया में।<br>अनुरागिनी उषा लेती थी निज सुहाग मधुमाया में।<br>उसकी स्मृति पाथेय बनी है थके पथिक की पंथा की।<br>सीवन को उधेड़ कर देखोगे क्यों मेरी कंथा की? | (5x1=5) |

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| (क) | <p>(क) कवि की प्रेयसी के कपोलों की क्या विशेषता थी? उचित विकल्प का चयन कीजिए-</p> <ol style="list-style-type: none"> <li>1. अत्यंत गोल तथा कालिमा से भरपूर</li> <li>2. अत्यंत सुंदर व लालिमा लिए हुए</li> <li>3. गोरे तथा सुंदर</li> <li>4. गुलाबी तथा गोल मटोल</li> </ol> <p><b>विकल्प</b></p> <p>(i) कथन 2 सही है।<br/> (ii) कथन 1 और 2 सही हैं।<br/> (iii) कथन 2 और 3 सही हैं।<br/> (iv) कथन 3 और 4 सही हैं।</p>                                        | 1 |
| (ख) | <p>कवि किसकी स्मृति ताज़ा कर रहे हैं</p> <ol style="list-style-type: none"> <li>(i) अपनी माँ की स्मृति को</li> <li>(ii) अपनी पत्नी की स्मृति को</li> <li>(iii) अपने मित्रों की स्मृति को</li> <li>(iv) अपनी प्रेयसी की स्मृति को</li> </ol>                                                                                                                                                                                                                | 1 |
| (ग) | <p>कवि शेष जीवन यात्रा किसके सहारे व्यतीत करना चाहते हैं?</p> <ol style="list-style-type: none"> <li>(i) अपने मित्रों के सहारे</li> <li>(ii) अपने सपनों के सहारे</li> <li>(iii) प्रेयसी के मधुर प्रेम और सौंदर्य के सहारे</li> <li>(iv) अपने सुखों के सहारे</li> </ol>                                                                                                                                                                                     | 1 |
| (घ) | <p>(ग) कथन और कारण को पढ़कर उपयुक्त विकल्प चुनिए-</p> <p><b>कथन :</b> कवि की प्रेयसी अत्यंत सुंदर थी।<br/> <b>कारण :</b> वह उषा की लालिमा से अपनी सुंदरता लेती थी।</p> <p><b>विकल्प</b></p> <ol style="list-style-type: none"> <li>(i) कथन गलत है, किंतु कारण सही है।</li> <li>(ii) कथन और कारण दोनों ही गलत हैं।</li> <li>(iii) कथन सही है और कारण, कथन की सही व्याख्या है।</li> <li>(iv) कथन सही है, किंतु कारण, कथन की सही व्याख्या नहीं है।</li> </ol> | 1 |
| (ङ) | <p>काव्यांश में किस बात को सच्चाई के साथ अभिव्यक्त किया गया है? उचित विकल्प का चयन कीजिए।</p> <ol style="list-style-type: none"> <li>1. प्रेयसी की सुंदरता को</li> <li>2. कवि के सपनों को</li> <li>3. कवि के जीवन के यथार्थ को</li> <li>4. जीवन की यात्रा को</li> </ol> <p><b>विकल्प</b></p> <p>(A) कथन 1 और 2 सही हैं।<br/> (B) कथन 2 और 3 सही हैं।<br/> (C) केवल कथन 3 सही है।<br/> (D) कथन 1, 3 और 4 सही हैं।</p>                                       | 1 |

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| 10  | निर्धारित कविताओं के आधार पर निम्नलिखित चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | (3x2=6)   |
| (क) | लक्ष्मण ने वीर योद्धा की क्या-क्या विशेषता बताई?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2         |
| (ख) | सूरदास द्वारा प्रस्तुत पदों के आधार पर गोपियों का योग साधना के प्रति दृष्टिकोण स्पष्ट कीजिए।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2         |
| (ग) | संगतकार की आवाज में दिखाई देने वाली हिचक क्या प्रदर्शित करती है ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2         |
| (घ) | बच्चे का परिचय संसार से करवाने में किसकी मुख्य भूमिका होती है? स्पष्ट कीजिए।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2         |
| 11  | पूरक पाठ्य पुस्तक के पाठों पर आधारित निम्नलिखित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर लगभग 50-60 शब्दों में लिखिए:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | (2x4=8)   |
| (क) | आपके विचार से भोलानाथ अपने साथियों को देखकर सिसकना क्यों भूल जाता है?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4         |
| (ख) | कभी श्वेत तो कभी रंगीन पताकाओं का फहराना किन अलग-अलग अवसरों की ओर संकेत करता है ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4         |
| (ग) | एक संवेदनशील युवा नागरिक की हैसियत से विज्ञान का दुरुपयोग रोकने में आपकी क्या भूमिका है?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4         |
|     | <b>खंड-घ (रचनात्मक लेखन)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>20</b> |
| 12  | निम्नलिखित तीन विषयों में से किसी एक विषय पर संकेत बिन्दुओं के आधार पर लगभग 120 शब्दों में एक अनुच्छेद लिखिए।<br><br>(क) आधुनिक जीवन-शैली एवं स्वास्थ्य समस्याएँ<br><b>संकेत-बिंदु –</b><br><br><ul style="list-style-type: none"> <li>• आधुनिक युग एवं जीवन शैली</li> <li>• बदलता परिवेश</li> <li>• समय की कमी</li> <li>• कार्य की अधिकता</li> <li>• विभिन्न रोगों से पीड़ित</li> <li>• इनसे बचने के उपाय</li> </ul><br>(ख) भारतीय किसान<br><b>संकेत-बिंदु –</b><br><br><ul style="list-style-type: none"> <li>• भारत : एक कृषि प्रधान देश</li> <li>• अधिसंख्य आबादी कृषि पर निर्भर</li> <li>• दुर्दशा के प्रमुख कारण</li> <li>• जीवन-स्तर में सुधार के उपाय</li> </ul> | (1x6=6)   |

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|    | <p style="text-align: center;"><b>(ग) राष्ट्रीय एकता<br/>संकेत-बिंदु –</b></p> <ul style="list-style-type: none"> <li>• राष्ट्रीय एकता का अर्थ एवं उसका महत्व</li> <li>• राष्ट्र के सशक्तीकरण का प्रतीक</li> <li>• विश्व-मंच पर देश की सकारात्मक छवि</li> <li>• देश के निर्माण में सहायक</li> </ul>                                                                                                                                                                                                                                                             |         |
| 13 | <p>आप मोहन /राधिका हैं। विद्यालय के पुस्तकालय में छात्रों को समसामयिक विषयों पर पुस्तकों का आभाव खटकता है। प्रधानाचार्य जी को लगभग 100 शब्दों में पत्र लिखकर इस विषय से सम्बंधित पुस्तके मंगवाने के लिए प्रार्थना पत्र लिखिए।</p> <p style="text-align: center;"><b>अथवा</b></p> <p>आप डी०पी०एस० स्कूल, अ०ब०स० नगर के छात्रावास में रहने वाले रोहन गुप्ता / ईशानी गुप्ता हैं। आपके विद्यालय में खेल-दिवस का आयोजन किया गया था। यह आप सभी साथियों के लिए उत्साह एवं उल्लास से परिपूर्ण रहा। इस अवसर के अनुभव बताते हुए पिता जी को 100 शब्दों में पत्र लिखिए।</p> | (1x5=5) |
| 14 | <p>आपका नाम अंकित/अंकिता है। आपने एन०एस०डी० से अभिनय का डिप्लोमा किया है। आपको 'कला छाया' नाम की दूरदर्शन संस्था में अभिनय कर्ता रिक्त पद की पूर्ति के लिए आवेदन करना है। इसके लिए आप अपना एक संक्षिप्त स्ववृत्त (बायोडाटा) लगभग 80 शब्दों में तैयार कीजिए।</p> <p style="text-align: center;"><b>अथवा</b></p> <p>स्टेट बैंक ऑफ़ इंडिया की स्थानीय शाखा में काफी समय से लेनदेन न होने के कारण आपका बचत खाता बंद कर दिया गया है। इसे पुनः चालू कराने के लिए शाखा प्रबंधक को एक-मेल 80 शब्दों में लिखिए।</p>                                                      | (1x5=5) |
| 15 | <p>वोट डालने हेतु लोगों को जागरूक बनाने के लिए 'जागरूक नागरिक मंच' संस्था द्वारा जनहित में जारी लगभग 40 शब्दों में एक विज्ञापन तैयार कीजिये।</p> <p style="text-align: center;"><b>अथवा</b></p> <p>आपकी बड़ी बहन की पदोन्नति कैप्टन से मेजर के रूप में हुई है। उन्हें बधाई देते हुए लगभग 40 शब्दों में संदेश लिखिए।</p>                                                                                                                                                                                                                                         | (1x4=4) |

**अंक योजना सेट: 4**  
**प्रथम पूर्व परिषदीय परीक्षा (2025-26)**  
**हिन्दी(पाठ्यक्रम-अ) विषय कोड-002**  
**कक्षा: दसवीं**  
**विषय- हिंदी**

निर्धारित समय: 3 घंटे

अधिकतम अंक : 80

सामान्य निर्देश :

निम्नलिखित निर्देशों को बहुत सावधानी से पढ़िए और उनका अनुपालन कीजिए:

- (i) इस प्रश्नपत्र में कुल चार खंड हैं- क, ख, ग, घ ।
- (ii) इस प्रश्नपत्र में कुल 15 प्रश्न हैं, सभी प्रश्न अनिवार्य हैं।
- (iii) प्रश्नपत्र में आंतरिक विकल्प दिए गए हैं।
- (iv) सभी प्रश्नों के उत्तर दिए गए निर्देशों का पालन करते हुए लिखें ।

| प्रश्न संख्या | खंड - क<br>(अपठित बोध)                                                                                                                                                                                                                                                                                   | अंक<br>(14) |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>1</b>      | निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर उस पर आधारित पूछे गए प्रश्नों के उत्तर लिखिए:                                                                                                                                                                                                                    | 7           |
| (क)           | (iii) कथन 1, 3 और 4 सही हैं।                                                                                                                                                                                                                                                                             | 1           |
| (ख)           | (iii) कथन सही है और कारण, कथन की सही व्याख्या है।                                                                                                                                                                                                                                                        | 1           |
| (ग)           | (i) मातृ-ऋण को                                                                                                                                                                                                                                                                                           | 1           |
| (घ)           | स्वर्ग से भी सर्वोच्च स्थान जननी व जन्मभूमि को दिया गया है। जननी परिश्रम व स्नेह से अपनी संतान का पालन-पोषण करती है और अच्छी शिक्षा व अच्छे संस्कार देकर एक अच्छा नागरिक बनाती है। इसी तरह जन्मभूमि के ममतामयी गोद में खेलकर हम बड़े होते हैं। हमारा शरीर इसके उगाए हुए अन्न, फल आदि खाकर पुष्ट होता है। | 2           |
| (ङ)           | जननी व जन्मभूमि का उपकार व्यक्ति आजीवन नहीं चुका सकता। इसलिए हमारा कर्तव्य है कि हम अपनी जननी व मातृभूमि की सेवा तन-मन-धन से करें। ऐसा कोई काम नहीं करें जिससे उनका अपमान हो।                                                                                                                            | 2           |
| <b>2</b>      | निम्नलिखित काव्यांश को ध्यानपूर्वक पढ़कर उस पर आधारित पूछे गए प्रश्नों के उत्तर लिखिए:                                                                                                                                                                                                                   | 7           |
| (क)           | (iv) वह उसकी थकान को दूर भगा देती है।                                                                                                                                                                                                                                                                    | 1           |
| (ख)           | (i) कोमल-मखमली कपड़े से                                                                                                                                                                                                                                                                                  | 1           |
| (ग)           | (iii) कथन और कारण दोनों सही हैं, परंतु कारण कथन की सही व्याख्या है।                                                                                                                                                                                                                                      | 1           |
| (घ)           | उपर्युक्त पंक्ति में 'तरणि' से तात्पर्य सूर्य से है। यह तम अर्थात् अंधकार का नाश करता है।                                                                                                                                                                                                                | 2           |

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| (ड) | पद्यांश में मातृभूमि की विशेषता का उल्लेख किया गया है कि मातृभूमि समृद्ध, सुखदायक और उत्तम गुणों से युक्त है। इसे शुद्ध, अमृतमय, शीतल और सुगंधित बताया गया है। इसकी सजीवता, समृद्धि और उपलब्ध धरोहरों की स्तुति की गई है। इसके अतिरिक्त, मातृभूमि को क्षमामयी, दयामयी, सुधामयी, वात्सल्यमयी और प्रेममयी भी बताया गया है, जो उसके नागरिकों के प्रति उसकी प्रेमभावना और सहानुभूति को दर्शाता है यह भारत माता जो सभी की रक्षा करती हैं और संतानों के लिए जननी और प्राण है। | 2         |
|     | <b>खंड - ख ( व्यावहारिक व्याकरण)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>16</b> |
| 3   | <b>निर्देशानुसार 'रचना के आधार पर वाक्य भेद' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए:</b>                                                                                                                                                                                                                                                                                                                                                    | (4x1=4)   |
| (क) | जब सिक्किम स्वतंत्र रजवाड़ा था तब टूरिस्ट उद्योग इतना नहीं फला-फूला था।                                                                                                                                                                                                                                                                                                                                                                                                 | 1         |
| (ख) | जापान जाने का अवसर मिला और मैं हिरोशिमा गया।                                                                                                                                                                                                                                                                                                                                                                                                                            | 1         |
| (ग) | नेताजी की आँखों पर संगमरमर का चश्मा नहीं था।                                                                                                                                                                                                                                                                                                                                                                                                                            | 1         |
| (घ) | सरल वाक्य                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1         |
| (ङ) | जब बालगोबिन भगत खेतों में रोपाई कर रहे थे, क्रिया विशेषण आश्रित उपवाक्य                                                                                                                                                                                                                                                                                                                                                                                                 | 1         |

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| 4   | <b>निर्देशानुसार 'वाच्य' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए:</b>                        | (4x1=4) |
| (क) | कर्तृवाच्य                                                                                                              | 1       |
| (ख) | हम सभी सैलानी अब जीप से उतरकर बर्फ पर कूद रहे थे।                                                                       | 1       |
| (ग) | कर्तृवाच्य                                                                                                              | 1       |
| (घ) | छुट्टी में देर तक सोया जाएगा।                                                                                           | 1       |
| (ङ) | कर्तृवाच्य                                                                                                              | 1       |
| 5   | <b>निर्देशानुसार 'पद परिचय' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के रेखांकित पदों का पद-परिचय लिखिए:</b> | (4x1=4) |
| (क) | अच्छे-अच्छों ने - जातिवाचक संज्ञा, पुल्लिंग, बहुवचन, कर्ता कारक ।                                                       | 1       |
| (ख) | विशेषण, संख्यावाचक, स्त्रीलिंग, एकवचन, 'कक्षा'– विशेष्य                                                                 | 1       |
| (ग) | लेकिन - समुच्चयबोधक अव्यय, दो वाक्यों को जोड़ने का कार्य                                                                | 1       |
| (घ) | रीतिवाचक क्रियाविशेषण, ' हंसने लगे' क्रिया की विशेषता।                                                                  | 1       |
| (ङ) | गुणवाचक क्रियाविशेषण, ' स्त्रीलिंग, एकवचन में विशेष्य की विशेषता।                                                       | 1       |

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| 6   | निर्देशानुसार 'अलंकार' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों की रेखांकित काव्य पंक्तियों में अलंकार पहचान कर लिखिए :                                                                                                                                                                                                                                                                                                                                                                               | (4x1=4)   |
| (क) | रूपक अलंकार                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1         |
| (ख) | उत्प्रेक्षा                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1         |
| (ग) | उपमा अलंकार                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1         |
| (घ) | मानवीकरण                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1         |
| (ङ) | अतिशयोक्ति का कोई भी उदहारण                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1         |
|     | <b>खंड - ग (पाठ्यपुस्तक एवं पूरक पाठ्यपुस्तक)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>30</b> |
| 7   | निम्नलिखित पठित गद्यांश पर आधारित बहुविकल्पीय प्रश्नों के सर्वाधिक उपयुक्त विकल्प चुनकर लिखिए:                                                                                                                                                                                                                                                                                                                                                                                                                   | (5x1=5)   |
| (क) | (i) कथन 1,2 और 3 सही हैं।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1         |
| (ख) | (iii) केवल कथन 4 सही है।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1         |
| (ग) | (iii) कथन सही है और कारण, कथन की सही व्याख्या है।                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1         |
| (घ) | (iv) आत्मा और परमात्मा का                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1         |
| (ङ) | (iv) मानसिक रूप से कमज़ोर                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1         |
| 8   | निर्धारित गद्य पाठों के आधार पर निम्नलिखित चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए:                                                                                                                                                                                                                                                                                                                                                                                        | (3x2=6)   |
| (क) | 'लखनवी अंदाज़' पाठ में लेखक ने पतनशील सामंती वर्ग पर व्यंग्य किया है। ये लोग जीवन की वास्तविकता से दूर भागते हैं और बनावटी जीवन शैली अपनाने में गर्व की अनुभूति करते हैं, इनका यह 'जीवन-विरोधी' अंदाज़ उचित नहीं ठहराया जा सकता। भोग के स्थान पर गंध से तृप्ति जैसी बातों से सामंती होना नहीं झलकता, बल्कि उससे पतनशील स्वरूप का चिट्ठा खुलकर सामने आ जाता है।                                                                                                                                                   | 2         |
| (ख) | संकीर्ण मनोवृत्ति के कारण हम अपने व्यक्तिगत, जातिगत एवं धार्मिक हितों को सर्वोपरि मानकर उनकी रक्षा में जुट जाते हैं और उन्हें ही सभ्यता और संस्कृति मान बैठते हैं। इस कारण हम इन शब्दों का सही अर्थ समझ ही नहीं पाते। संसार परिवर्तनशील है। समय के साथ हर चीज़ बदलती है, तो संस्कृति और सभ्यता को भी पकड़ कर नहीं बैठा जा सकता। रूप बदलने के कारण इन्हें समझने में कठिनाई आती है। इन शब्दों के आगे 'भौतिक' और 'आध्यात्मिक' विशेषण जुड़ जाने से इनकी अर्थगत जटिलता बढ़ जाती है, अतः अर्थ समझने में कठिनाई आती है। | 2         |
| (ग) | लेखक रामवृक्ष बेनीपुरी जी के अनुसार बालगोबिन भगत ने अनेक प्रकार से प्रचलित सामाजिक मान्यताओं का खंडन किया। पुत्र की मृत्यु हो जाने पर उन्होंने शोक मनाने के स्थान पर भजन गाए                                                                                                                                                                                                                                                                                                                                     | 2         |

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|     | और अपनी बहू को भी समझाया कि वह दुखी न हो, क्योंकि आत्मा से परमात्मा का मिलन हो गया है। उन्होंने अपने पुत्र का दाह-संस्कार भी अपनी पुत्रवधू से ही करवाया। इसके अतिरिक्त बुढ़ापे में अपनी देखभाल का मोह छोड़कर उन्होंने पुत्रवधू के भाई को बुलाया तथा बहू का दूसरा विवाह यानी पुनर्विवाह करने के लिए उसे उसके साथ भेज दिया।                                                                           |         |
| (घ) | नेताजी की मूर्ति संगमरमर की थी, जो टोपी की नोक से कोट के दूसरे बटन तक कोई दो फुट ऊँची सुंदर मूर्ति थी। फ़ौजी वर्दी में नेताजी सुंदर, मासूम और कमसिन लग रहे थे। मूर्ति को देखते ही 'दिल्ली चलो' और 'तुम मुझे खून दो.....' आदि नारे याद आने लगते थे। इस दृष्टि से यह एक सफल और सराहनीय कोशिश थी। मूर्ति में केवल एक बड़ी कमी थी, जो देखते ही खटकती थी कि नेताजी की आँखों पर संगमरमर का चश्मा नहीं था। | 2       |
| 9   | <b>निम्नलिखित पठित काव्यांश पर आधारित बहुविकल्पीय प्रश्नों के सर्वाधिक उपयुक्त उत्तर वाले विकल्प चुनकर लिखिए:</b>                                                                                                                                                                                                                                                                                   | (5x1=5) |
| (क) | (i) कथन 2 सही है।                                                                                                                                                                                                                                                                                                                                                                                   | 1       |
| (ख) | (iv) अपनी प्रेयसी की स्मृति को                                                                                                                                                                                                                                                                                                                                                                      | 1       |
| (ग) | (iii) प्रेयसी के मधुर प्रेम और सौंदर्य के सहारे                                                                                                                                                                                                                                                                                                                                                     | 1       |
| (घ) | (iv) कथन सही है, किंतु कारण, कथन की सही व्याख्या नहीं है                                                                                                                                                                                                                                                                                                                                            | 1       |
| (ङ) | (iv) केवल कथन 1,3 और 4 सही है।                                                                                                                                                                                                                                                                                                                                                                      | 1       |
| 10  | <b>निर्धारित कविताओं के आधार पर निम्नलिखित चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए:</b>                                                                                                                                                                                                                                                                       | (3x2=6) |
| (क) | लक्ष्मण ने वीर योद्धा की निम्नलिखित विशेषताएँ बताई – <ul style="list-style-type: none"> <li>• वीर योद्धा अपनी वीरता का बखान अपने मुंह से नहीं करते।</li> <li>• अपने बल का बखान करना तो कायरों का काम है।</li> <li>• वीर व्यक्ति धैर्यवान और क्रोध रहित होता है।</li> <li>• वीर योद्धा अपशब्द नहीं बोलते हैं।</li> <li>• वीर योद्धा अपना प्रताप युद्ध में दिखाते हैं।</li> </ul>                     | 2       |
| (ख) | यहाँ गोपियों की योग साधना के प्रति नकारात्मक दृष्टिकोण दिखायी देता है , उन्हें श्री कृष्ण से प्रेम है। उनके अनुसार योग साधना नीरस व कठिन है। योग उनके लिए कड़वी ककड़ी और ऐसी बीमारी है जिसके बारे में कभी सुना न देखा।                                                                                                                                                                              | 2       |
| (ग) | वह नहीं चाहता कि मुख्य गायक से उसकी आवाज़ तेज हो ,संगीतकार के हृदय में मुख्य गायक के प्रति श्रद्धा की भावना होती है ।                                                                                                                                                                                                                                                                               | 2       |
| (घ) | बच्चे का परिचय संसार से करवाने में माँ की मुख्य भूमिका होती है। माँ बच्चे की जन्मदात्री है, उसे शिक्षित करने के कारण पहली गुरु भी है। नौ माह पूर्व से संबंध जुड़ जाने के कारण संतान से उसका गहरा रिश्ता बन जाता है। वह उसके बाल मन को समझते हुए बाहरी जगत से उसका परिचय कराती है। बच्चा माँ पर ही सर्वाधिक विश्वास कर पाने के कारण माँ द्वारा परिचित करवाए गए लोगों से संबंध                        | 2       |

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|     | का तार जोड़ता है और उसकी सूचना दंतुरित मुसकान से देता है। प्रस्तुत कविता में भी कवि से शिशु की माँ ही परिचय करवाती नज़र आती हैं।                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |           |
| 11  | <b>पूरक पाठ्य पुस्तक के पाठों पर आधारित निम्नलिखित तीन प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर लगभग 50-60 शब्दों में लिखिए:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (2x4=8)   |
| (क) | भोलानाथ अपने साथियों को देखकर सिसकना, इसलिए भूल जाता है, क्योंकि<br>(i) बच्चों का स्वभाव होता है कि वह अपनी उम्र के बच्चों के साथ ही खेलना पसंद करते हैं। भोलानाथ को भी अपने साथियों के साथ तरह-तरह के खेल खेलना अच्छा लगता था। अतः वह अपने साथियों की मस्ती देखकर उसी में मग्न हो जाता, जिससे वह सिसकना भूल जाता था।<br>(ii) दूसरा मनोवैज्ञानिक कारण यह है कि यदि वह अपने साथियों के सामने रोना-सिसकना जारी रखता, तो वे उसकी हँसी उड़ाते और उसे अपने साथ लेकर खेलने के लिए नहीं जाते। इसलिए भोलानाथ अपने साथियों को देखकर सिसकना भूल जाता था।                                                                                                                                                                            | 4         |
| (ख) | एक कतार में लगी श्वेत बौद्ध पताकाएँ शांति व अहिंसा का प्रतीक हैं, इन पर मंत्र लिखे होते हैं। जब किसी बुद्धिस्ट की मृत्यु होती है, तो उसकी आत्मा की शांति के लिए शहर से दूर किसी पवित्र स्थान पर एक सौ आठ श्वेत पताकाएँ फहरा दी जाती हैं। इन्हें उतारा नहीं जाता, ये स्वयं नष्ट हो जाती हैं। इसके अतिरिक्त किसी शुभ कार्य को आरंभ करने पर रंगीन पताकाएँ लगाई जाती हैं। यह कार्य बौद्ध धर्म को मानने वालों के द्वारा किया जाता है।                                                                                                                                                                                                                                                                                          | 4         |
| (ग) | एक संवेदनशील युवा नागरिक की हैसियत से विज्ञान का दुरुपयोग रोकने में मेरी अहम भूमिका रहेगी। मैं वैज्ञानिक उपकरणों का प्रयोग तो करूँगा, लेकिन यह भी ध्यान रखूँगा कि इससे पर्यावरण एवं किसी दूसरे को हानि न हो। मैं प्रदूषण फैलाने वाली वस्तुओं का प्रयोग कम-से-कम करूँगा। अपने तथा अपने आस-पास के वातावरण को स्वच्छ और सुंदर बनाने का प्रयत्न करूँगा। प्रकृति के निकट रहूँगा। सुख-सुविधाओं की कृत्रिम दीवारों को तोड़ूँगा। किसानों को भूमि तथा फ़सलों पर दुष्प्रभाव डालने वाली रासायनिक खाद, कीटनाशक दवाएँ आदि से सचेत करूँगा तथा वृक्ष लगाने, पॉलिथीन बैग इस्तेमाल न करने, प्रदूषण के विषय में जानकारी देने के लिए कार्यक्रम आयोजित करूँगा, रैलियाँ निकालूँगा, प्रतियोगिताएँ आयोजित करूँगा, जिससे आम जनता में जागृति आएगी। | 4         |
|     | <b>खंड-घ (रचनात्मक लेखन)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>20</b> |
| 12  | <b>निम्नलिखित तीन विषयों में से किसी एक विषय पर संकेत बिन्दुओं के आधार पर लगभग 120 शब्दों में एक अनुच्छेद लिखिए।</b><br>किसी एक विषय पर लगभग 120 शब्दों में एक अनुच्छेद लिखिए :<br><ul style="list-style-type: none"> <li>▪ भूमिका : 1 अंक</li> <li>▪ विषयवस्तु : 3 अंक</li> <li>▪ निष्कर्ष : 1 अंक</li> <li>भाषा की शुद्धता : 1 अंक</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           | (1x6=6)   |

|    |                                                                                                                                                                                                       |         |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 13 | किसी एक विषय पर लगभग 100 शब्दों में पत्र लिखिए: <ul style="list-style-type: none"> <li>▪ प्रारूप - 1 अंक</li> <li>▪ विषयवस्तु - 3 अंक</li> <li>भाषा शुद्धता - 1 अंक</li> </ul>                        | (1x5=5) |
| 14 | किसी एक विषय पर लगभग 80 शब्दों में स्ववृत्त/ ईमेल लिखिए <ul style="list-style-type: none"> <li>▪ प्रारूप- 1अंक</li> <li>▪ विषयवस्तु. 3 अंक</li> <li>भाषा शुद्धता - 1 अंक</li> </ul>                   | (1x5=5) |
| 15 | किसी एक विषय पर लगभग 40 शब्दों में विज्ञापन/ संदेश लेखन करें । <ul style="list-style-type: none"> <li>▪ रचनात्मक प्रस्तुति- 1 अंक</li> <li>▪ विषयवस्तु- 2 अंक</li> <li>भाषा शुद्धता- 1 अंक</li> </ul> | (1x4=4) |

**PRE-BOARD EXAMINATION (2025-26)**

**CLASS-X**

**ENGLISH LANGUAGE AND LITERATURE (CODE- 184)**

**Max. Time-3Hours**

**MAX. Marks 80.**

**General Instructions:**

Read the instructions very carefully and strictly follow them:

1. This question paper comprises 11 questions. All questions are compulsory
2. The question paper contains THREE sections

Section – A: Reading Skills

Section – B: Grammar and Creative Writing Skills

Section – C: Literature Textbook

3. Attempt questions based on specific instructions for each Part.

**SECTION A**

**Reading Skills (20 Marks)**

**1. Read the passage carefully and answer the questions that follow. (10)**

(1) In today's fast-paced world, lifestyle choices play a crucial role in shaping our physical and mental health. A balanced lifestyle includes regular exercise, nutritious food, adequate sleep, and stress management. Unfortunately, unhealthy habits such as irregular eating, overconsumption of fast food, lack of physical activity, and excessive screen time are becoming increasingly common.

(2) According to medical research, lifestyle-related disorders such as obesity, diabetes, hypertension, and cardiovascular diseases are on the rise. The World Health Organization reports that over 650 million adults worldwide are obese, a condition linked to unhealthy eating and sedentary living. In India, rapid urbanisation and changing diets have contributed to rising cases of lifestyle diseases even among teenagers.

(3) Mental health is also affected by lifestyle choices. Poor sleep patterns, academic pressure, and social media addiction have increased stress and anxiety levels in young people. Experts emphasise that small changes—such as maintaining a sleep schedule, practising mindfulness, and engaging in outdoor activities—can significantly improve emotional well-being.

(4) The role of diet cannot be overstated. A diet rich in fruits, vegetables, whole grains, and adequate hydration strengthens the immune system. In contrast, processed foods high in sugar, salt, and trans fats may satisfy taste buds but harm long-term health. Nutritionists recommend moderation rather than complete avoidance, encouraging people to adopt the “80-20 rule”: eat healthy most of the time, but allow occasional indulgence.

(5) Physical activity is another essential component of a healthy lifestyle. The World Health Organization suggests that teenagers should engage in at least 60 minutes of moderate to vigorous physical activity daily. Walking, cycling, yoga, and sports not only improve fitness but also reduce stress. Even simple choices, like taking the stairs instead of using an elevator, can make a difference.

(6) Importantly, lifestyle choices are not just individual concerns but also societal. Schools, workplaces, and communities play a role in promoting healthy habits. Campaigns against smoking, initiatives for clean eating, and government drives for yoga and fitness reflect growing awareness. Ultimately, health is shaped not by a single decision but by consistent choices made every day.

**Answer the following questions based on the reading of the above passage:**

- (i) Mention two unhealthy lifestyle habits cited in the passage. (1)
- (ii) Select the option that best explains the “80-20 rule” in diet. (1)
  - (A) Eating healthy 80% of the time and indulging occasionally.
  - (B) Eating only 80% of meals and skipping 20%.
  - (C) Eating processed food 80% and fresh food 20%.
  - (D) Avoiding 80% of food groups for better health.
- (iii) How do lifestyle choices affect mental health? Mention any two ways. (2)
- (iv) Fill in the blank: WHO recommends that teenagers should exercise for at least \_\_\_\_\_ daily. (1)
  - (A) 30 minutes (B) 45 minutes (C) 60 minutes (D) 90 minutes
- (v) State two societal initiatives that promote healthy habits. (2)
- (vi) True or False: Obesity and hypertension are examples of lifestyle-related diseases. (1)
- (vii) What does the writer mean by “health is shaped by consistent choices made every day”? (2)

## **2. Read the passage carefully and answer the questions that follow: (10)**

(1) Artificial Intelligence (AI) is the ability of machines to perform tasks that typically require human intelligence. It involves processes such as learning, reasoning, problem-solving, and decision-making. From healthcare to education, AI is transforming the way societies function.

(2) One of the earliest uses of AI was in chess-playing programs, where computers could calculate thousands of moves ahead. Today, AI powers self-driving cars, voice assistants, online recommendation systems, and medical imaging. Hospitals now use AI to detect diseases at early stages, helping doctors provide more accurate treatment.

(3) In education, AI platforms analyse a student’s progress and customise lessons according to their strengths and weaknesses. This ensures personalised learning and allows teachers to focus on creative and critical aspects of education rather than repetitive tasks.

(4) AI is also playing a role in solving global issues. In agriculture, AI-based tools help farmers predict weather conditions, identify soil health, and optimise crop yields. In environmental studies, AI is used to model climate change and suggest sustainable solutions.

(5) However, AI raises concerns as well. With machines performing tasks once done by humans, many fear job losses in sectors like customer service, transport, and manufacturing. Ethical issues such as data

privacy, cyber risks, and algorithmic bias remain under debate. For instance, if AI learns from biased data, its decisions may also be biased.

(6) Experts suggest that the future of AI depends on responsible use. While it has the potential to become one of humanity's greatest tools, unchecked growth may pose serious risks. Striking a balance between innovation and regulation will be the key to ensuring AI benefits all of society.

**Answer the following questions based on the reading of the above passage:**

(i) What are two current uses of AI in healthcare? (1)

(ii) In the question given below, there are two statements marked as Assertion (A) and Reason (R). Read these statements and choose one correct answer from the given options

Assertion A: AI provides personalised learning in education.

Reason R: AI analyses student progress and customises lessons.

Choose the correct option: (1)

(A) Both A and R are true, and R explains A.

(B) Both A and R are true, but R does not explain A.

(C) A is true, R is false.

(D) A is false, R is true.

(iii) What can be inferred about the role of humans in an AI-driven future? (2)

(iv) What can we infer about the impact of AI on teachers' roles in education? (1)

(A) Teachers may become completely unnecessary

B) Teachers can focus more on higher-order tasks

C) Students will not require human guidance

D) AI will replace schools entirely

(v) What is algorithmic bias, and why is it a concern? (2)

(vi) What does the passage imply about the future of work in AI-driven sectors? (1)

A) All human jobs will be eliminated

B) Only robots will be employed

C) Certain job roles may change or reduce

D) Employment will not be affected at all

(vii) What do experts mean by saying "the future of AI depends on responsible use"? (2)

## SECTION-B

### Grammar & Creative Writing Skills (20 Marks)

#### Grammar (10×1=10)

3. Complete ANY TEN of twelve of the following tasks, as directed:

(i) A school circular needs to be finalised. You're part of the organising team and must mention that a decision has now been made. Complete the sentence correctly: 1

**The committee has finally \_\_\_\_\_ the date for the annual fest.**

(ii) Your friend writes this in a travel vlog draft: 1

**"The roads of this city is always crowded."**

As the editor, how will you correct it to make it grammatically accurate?

(iii) You are writing a report to your teacher about a group discussion. Convert the question into reported speech: 1

**He asked, "Did you complete the assignment on time?"**

(iv) A parent is writing about their children's daily routine for the school magazine. Complete the sentence meaningfully: 1

**The children \_\_\_\_\_ (play) football in the park every evening.**

(v) You are texting your cousin about meeting plans. Complete the sentence: 1

**I am looking forward to \_\_\_\_\_ (meet) my cousin tomorrow.**

(vi) Your classmate wrote this sentence in a project reflection: 1

**"The teacher gave me many informations about the project."**

What correction would you suggest to make it grammatically correct?

(vii) You're preparing a script for a Geography presentation in class. Complete the sentence by choosing the correct verb form: 1

**The Himalayas \_\_\_\_\_ covered with snow throughout the year.**

(A) is (B) are (C) were (D) be

(viii) You are summarising a phone conversation in your diary. Rewrite this sentence in reported speech: 1

**"I will call you tomorrow," said Neha.**

(ix) Your group is planning a picnic, but the weather forecast shows rain. Complete the sentence in a conditional form: 1

**If it rains, we \_\_\_\_\_ (stay) indoors.**

(x) A student wrote this sentence in a resume: 1

**"He is senior than me by two years."**

Rewrite it correctly.

(xi) You are drafting an announcement for the school notice board. Complete the sentence using the correct passive form: 1

**The principal announced that the results \_\_\_\_\_ (publish) next week.**

(xii) In the attendance report, a teacher writes: 1

**"One of the boy was absent today."**

Rewrite the sentence correctly.

## Creative Writing Skills (10 Marks)

Note : All details presented in the questions in the writing section are imaginary and created for assessment purpose.

### 4. Attempt ANY ONE from (A) and (B) given below: 5

(4A) You are Riya / Rohan of Class X, Springdale School, New Delhi. Write a letter to the Editor of a national daily expressing concern about the impact of social media on students, highlighting issues like distraction, cyberbullying, and addiction, and suggesting possible solutions.

OR

(4B) You are the Head Boy/Head Girl of your school. Write a letter to the Principal requesting stricter rules regarding the use of mobile phones in school, citing both the benefits and problems associated with them.

### 5. Attempt ANY ONE from (A) and (B) given below: 5

(5A) The chart below shows the percentage of students using online vs offline resources for learning in 2024. Write an analytical paragraph in about 120 words.

| Resource Type | Percentage of Students |
|---------------|------------------------|
| Online apps   | 45 %                   |
| Printed books | 30 %                   |
| Coaching      | 15 %                   |
| Group study   | 10%                    |

OR

(5B) Given below are details of renewable energy sources. Write an analytical paragraph in about 120 words:

- Solar: Abundant, eco-friendly, high setup cost
- Wind: Clean energy, depends on geography
- Hydro: Reliable, but affects ecosystems
- Biomass: Uses waste, but limited efficiency

## SECTION-C

### LITERATURE TEXT BOOKS (40 Marks)

#### 6. Read the following extracts and answer the questions for ANY ONE of the given two, (A) or (B):

(6A) “A plague of locusts would have left more than this. The hail has left nothing. This year we will have no corn.”

That night was a sorrowful one.

“All our work, for nothing.”

“There’s no one who can help us.”

“We’ll all go hungry this year.”

But in the hearts of all who lived in that solitary house in the middle of the valley, there was a single hope: help from God.

“Don’t be so upset, even though this seems like a total loss. Remember, no one dies of hunger.”

“That’s what they say: no one dies of hunger.” (A Letter to God)

(i) What does the repeated use of words like “nothing” and “no one” emphasise in the extract? (1)

(ii) What does the expression “*That night was a sorrowful one*” reveal about the family’s state of mind? (1)

(iii) “*Don’t be so upset... no one dies of hunger.*”

Do these lines reflect logic, denial, or emotional reassurance? Justify your answer with reference to the context. (2)

(iv) What tone is conveyed by the line, “*A plague of locusts would have left more than this.*”? (1)

A) Sarcasm

B) Optimism

C) Resentment

D) Despair

**OR**

**(6B)** I awoke late next morning to find that Anil had already made the tea. He stretched out his hand towards me. There was a fifty-rupee note between his fingers. My heart sank. I thought I had been discovered.

“I made some money yesterday,” he explained. “Now you’ll be paid regularly.”

My spirits rose. But when I took the note, I saw it was still wet from the night’s rain.

“Today we’ll start writing sentences,” he said.

He knew. But neither his lips nor his eyes showed anything. I smiled at Anil in my most appealing way. And the smile came by itself, without any effort. (The Thief’s Story)

(i) The phrase “*the smile came by itself*” suggests that the narrator— (1)

A) Was pretending to be happy

B) Felt genuine relief and affection

C) Wanted to hide his guilt

D) Was mocking Anil

(ii) How does Anil indirectly show that he knows about the theft? (1)

(iii) How does the author use the condition of the note (“still wet from the night’s rain”) to imply something deeper about the previous night’s events? (2)

(iv) What does Anil’s line “*Today we’ll start writing sentences*” symbolise in the context of the story? (1)

**7. Read the following extracts and answer the questions for any ONE of the given two, (A) or (B):**

**(7A)** “The way a crow

Shook down on me

The dust of snow

From a hemlock tree..." (Dust of Snow)

- (i) What effect did the crow's action have on the poet? (1)
- (ii) Which figure of speech is used in "dust of snow"? (1)
- (iii) Explain the symbolic significance of the crow and hemlock. (2)
- (iv) Fill in: The poet's mood changed from \_\_\_\_\_ to \_\_\_\_\_. (1)

OR

(7B) "He stalks in his vivid stripes  
The few steps of his cage,  
On pads of velvet quiet,  
In his quiet rage." (A Tiger in the Zoo)

- (i) What emotion is suggested by the phrase "*quiet rage*"? (1)
  - A) Joy hidden deeply
  - B) Suppressed anger
  - C) Pride and confidence
  - D) Fear of humans
- (ii) Fill in: The tiger's 'pads of velvet' suggest his movement is \_\_\_\_\_. (1)
- (iii) What do the lines suggest about the contrast between the tiger's nature and his situation? (2)
- (iv) Identify the rhyme scheme of the extract. (1)

**8. Answer ANY *FOUR* of the following five questions in 40 – 50 words each:**  
**4X3=12**

- (i) Why does Mandela call courage "not the absence of fear but the triumph over it"? (Nelson Mandela)
- (ii) How does Valli's bus journey reflect her curiosity and determination? (Madam Rides the Bus)
- (iii) Why did the baker's furnace hold special significance in Goa? (A Baker from Goa)
- (iv) How does humour educate readers in "How to Tell Wild Animals"?
- (v) Why was transporting Mijbil to England a nightmare for the narrator? (Mijbil the Otter)

**9. Answer ANY *TWO* of the following three questions in 40 – 50 words each:**  
**2X3=6**

- (i) 'Privilege often confuses actual needs for perceived ones.' Evaluate this statement with reference to Mrs. Pumphrey. (A Triumph of Surgery)
- (ii) Scientists contribute to make the world a better place. Griffin is an antithesis to this statement. Justify. (Footprints without Feet)
- (iii) What role did the "Book" play in saving the Earth? (The Book That Saved the Earth)

**10. Answer ANY ONE of the following two questions in 100 – 120 words: 6**

(A) Compare Amanda's longing for independence with Valli's adventurous spirit. (Amanda / Madam Rides the Bus)

**OR**

(B) How do both Mandela and Berryman (The Ball Poem) use the theme of loss to highlight resilience and growth? (Nelson Mandela / The Ball Poem)

**11. Answer ANY ONE of the following two questions in 100 – 120 words: 6**

Did the sacrifices made by the Loisels prove to be meaningless? Justify. (The Necklace)

**OR**

What strategy did Horace Danby prepare to break into Shotover Grange? (A Question of Trust)

## **PRE-BOARD SUB- ENGLISH ( LANGUAGE AND LITERATURE- 184 )**

### **MARKING SCHEME**

#### **Section A — Reading Skills (20 marks)**

Q1 (Passage: Lifestyle choices) — (10 marks)

(i) Any two unhealthy habits (1)

- Irregular eating; overconsumption of fast food. (Also acceptable: lack of physical activity, excessive screen time.)

(ii) “80–20 rule” — (1)

- (A) Eating healthy 80% of the time and indulging occasionally.

(iii) Two ways lifestyle affects mental health — (2)

- Poor sleep patterns increase stress/anxiety.
- Social media addiction / academic pressure increase anxiety and stress.

(iv) WHO recommends teenagers exercise for at least \_\_\_\_\_ daily — (1)

- (C) 60 minutes

(v) Two societal initiatives that promote healthy habits — (2)

- Campaigns against smoking; government/ community drives for yoga and fitness. (Other acceptable: initiatives for clean eating, school/workplace health programmes.)

(vi) True/False — (1)

- True.

(vii) Meaning of “health is shaped by consistent choices made every day” — (2)

- Small, regular habits (sleep, diet, exercise, stress management) accumulate over time to determine long-term physical and mental health; one-off actions are not enough.

#### **Q2 (Passage: Artificial Intelligence) — (10 marks)**

(i) Two current uses of AI in healthcare — (1)

- Medical imaging (diagnosis) and early disease detection/predictive diagnostics. (Also acceptable: treatment-planning assistance, automated record analysis.)

(ii) Assertion–Reason — (1)

- (A) Both A and R are true, and R explains A.

(iii) Role of humans in an AI-driven future — (2)

• Humans will not be replaced entirely but will need to adapt, supervise, and collaborate with AI. Their role will shift from repetitive tasks to decision-making, creativity, and responsible oversight.

(iv) we can infer about the impact of AI on teachers' roles in education — (1)

- (B) Teachers can focus more on higher-order tasks

(v) Algorithm bias and its concerns — (2)

- **Algorithmic bias** occurs when an AI system makes unfair or prejudiced decisions because it has been trained on data that contains human biases or unequal representation. As a result, the AI reflects those biases in its output.

It is a **serious concern** because it can lead to discrimination in important areas like hiring, healthcare, education, or banking. Biased AI decisions can harm individuals, reduce fairness, and create ethical and social inequality, making people lose trust in technology.

(vi) What does the passage imply about the future of work in AI-driven sectors? (1)

- C) Certain job roles may change or reduce

(vii) Meaning of “future of AI depends on responsible use” — (2)

- When experts say “**the future of AI depends on responsible use,**” they mean that AI should be developed and used with **care, ethics, and regulation**. If AI is used responsibly—by ensuring data privacy, fairness, transparency, and safety—it can benefit society in fields like healthcare, education, and climate solutions.

However, if AI is misused or left unchecked, it may lead to problems like job loss, data theft, or biased decisions. So, the progress and positive impact of AI depend on how wisely humans control and guide its development and application.

## Section B — Grammar & Creative Writing (20 marks)

Q3 — Grammar (answers concise)

(i) The committee has finally decided on the date of the annual fest.

(ii) Corrected: The roads of this city are always crowded.

(iii) Reported speech: He asked me if/whether I had completed the assignment on time.

(iv) The children play football in the park every evening.

(v) I am looking forward to meeting my cousin tomorrow.

(vi) Corrected: The teacher gave me a lot of information about the project. (Replace “many informations” with “a lot of information” / “much information”)

(vii) Correct option: (B) are — The Himalayas are covered with snow.

(viii) Reported: Neha said (that) she would call me the next day.

(ix) If it rains, we will stay indoors.

(x) Corrected: He is senior to me by two years. (OR: He is two years older than I.)

(xi) The principal announced that the results would be published next week.

(xii) Corrected: One of the boys was absent today.

(Any equivalent correct forms accepted.)

#### Q4 — Letter (5 marks)

Marking split: Content & ideas (3), Format/letter conventions (1), Expression/language (1).

Key points to include (choose relevant, write formally):

Option (a) Letter to Editor about social media

- State identity (Riya/Rohan, Class X, Springdale School).
- Describe problems: distraction, reduced attention, cyberbullying, addiction, impact on studies/mental health.
- Give evidence/examples and suggest solutions: digital literacy, parental controls, school counselling, awareness campaigns, fixed screen times.
- Polite request/appeal to public / authorities.

Option (b) Letter to Principal requesting strict mobile rules

- State role (Head Boy/Head Girl).
- Benefits of mobiles (learning, safety) and problems (cheating, distraction, cyberbullying).
- Propose rules: restricted timings, phone-free classrooms, secured storage, awareness drives.
- Request enforcement & offer help implementing.

(Award marks for relevance, organization, polite tone, appropriate salutations and signature.)

#### Q5 — Analytical Paragraph (5 marks)

Marking split: Content/analysis (3), Organisation/coherence (1), Language/word-limit (1).

(a) Online vs Offline resources — key points to include:

- Percentages (Online apps 45%, Printed books 30%, Coaching 15%, Group study 10%).
- Trend: online dominant but printed books still significant.
- Reasons: accessibility of apps, convenience; printed books — reliability; coaching for focused help; group study for peer learning.

- Conclude implications for educators/parents.

Model paragraph (≈110–120 words) — (use as model answer):

In 2024, online apps (45%) the most used learning resource, surpassing printed books (30%), coaching (15%) and group study (10%).

clear shift towards digital platforms

,instant feedback and flexibility.

Printed books for in-depth study and exam practice,

coaching centres targeted support and discipline.

Group study,.

the implication is to blend digital tools with traditional materials —

integrating reliable online through books

students to use apps effectively rather than as a sole resource.

(b) Renewable energy paragraph — similar structure: list pros/cons for each source, compare, conclude policy implication.)

## Section C — Literature (40 marks)

Note: For extract questions accept answers grounded in the text; award credit for relevant textual reference, brief justification and concision.

### Q6 — Extract-based Prose (5 marks each option)

(a) “A Letter to God” — Model answers

(i) The repeated use of words like “**nothing**” and “**no one**” highlights a strong sense of **hopelessness, loss, and despair**. It shows that the people feel completely helpless after the destruction and believe they have no support or resources left. This repetition reinforces the emotional impact of their suffering and the severity of their situation. (1)

(ii) It shows that the family was deeply saddened, worried, and emotionally broken after losing their crops. The line reflects their grief, fear of the future, and sense of helplessness. (1)

(iii) The lines reflect **emotional reassurance and denial mixed with hope**. The speaker tries to stay positive despite real danger. It shows faith used as comfort, rather than logic or certainty. (2)

(iv) D. Despair (1)

(b) “The Thief’s Story” — Model answers

(i) (B) Felt genuine relief and affection (1)

(ii) He gives the same wet note silently and doesn't scold or question him, showing he knows everything. (1)

(iii) The note being "still wet from the night's rain" is a subtle hint that Anil already knows the boy stole the money and returned it. Since the note was exposed to the rain, it proves it had been taken out of the house at night.

Instead of confronting or shaming him, Anil quietly accepts the money and offers trust and guidance. The wet note symbolises both the narrator's guilt and Anil's silent forgiveness, showing understanding without humiliation. (2)

(iv) It symbolises a fresh start, learning, trust, and transformation. (1)

(Accept any textual justification consistent with the story.)

#### Q7 — Extract-based Poetry (5 marks each option)

(a) "Dust of Snow" — Model answers

(i) The crow's action lifted the poet's spirits — it changed his mood for the better. (1)

(ii) Figure of speech: Imagery (vivid sensory image). (Award for "metaphor" if student argues convincingly; accept "symbolism".) (1)

(iii) Symbolic significance: the crow (unexpected small agent) and hemlock (gloomy/poisonous tree) together show that a tiny, unexpected moment from an unlikely source can bring joy and change outlook. (2)

(iv) Fill: from sadness to cheerfulness (or gloom → cheer). (1)

(b) "A Tiger in the Zoo" — Model answers

(i) B) Suppressed anger (1)

(ii) 'Pads of velvet' suggest silent/soft movement. (1)

(iii) Irony: the tiger's majestic power and natural freedom are contradicted by the small cage and his restrained, quiet rage — he is powerful yet imprisoned. (2)

(iv) Rhyme scheme of the extract: A B C B (lines 2 and 4 rhyme: "cage" / "rage"; others do not). (1)

#### Q8 — Short Answer (Any $4 \times 3 = 12$ marks) — model concise answers (≈30–40 words)

(i) Mandela — courage: Mandela means courage isn't not feeling fear but acting in spite of fear; true bravery is overcoming fear to do what is right.

(ii) Valli's bus journey: Valli's journey shows curiosity and determination—she saves money, persuades the conductor and overcomes fear to explore beyond her village.

(iii) Baker's furnace (A Baker from Goa): The furnace was central to the baker's trade and identity; it produced bread that connected community and tradition, symbolising livelihood and cultural continuity.

(iv) Humour in "How to Tell Wild Animals": Humour and satire teach readers caution and respect for animals; by joking, the author exposes human folly and makes lessons memorable.

(v) Transporting Mijbil: It was a nightmare because of practical difficulties (paperwork, quarantine, care, stench and attention needed for an otter crossing countries) and the narrator's inexperience.

(Give credit for relevant textual points.)

#### Q9 — Short Answer (Any $2 \times 3 = 6$ marks)

(i) Mrs. Pumphrey's excessive affection made her confuse Tricki's **perceived needs** with real ones. Believing he needed constant treats, rich food and pampering, she ignored his actual need for exercise and a controlled diet, causing his health to decline despite her good intentions.

(ii) Scientists are generally seen as innovators who improve lives through knowledge and invention. Griffin, however, misuses his scientific discovery of invisibility for selfish and harmful purposes. Instead of helping society, he resorts to theft, violence and destruction. His actions show how science without ethics can become dangerous, making him the opposite of scientists who work for humanity's welfare.

(iii) The Book (The Book That Saved the Earth): The Book acted as humanity's representative—its literature and ideas convinced alien visitors of human worth/culture and helped avert Earth's destruction.

#### Q10 — Long Answer (6 marks)

Choose one — structure and key points (concise model):

(a) Compare Amanda's longing for independence with Valli's adventurous spirit

- Intro (1): both desire change but differ in motivation.
- Amanda: desires escape from family/stifling rules, yearning for independence, romanticises adult life.
- Valli: curiosity-driven courage, proactive (saves money, goes to town) and experiential.
- Compare outcomes: Amanda's longing is emotional/internal; Valli's is action-oriented with immediate achievement.
- Conclude: both show young people's desire to change circumstances, but approach and result differ.

(Award marks for coherence, textual references, comparative analysis — intro, points, conclusion.)

(b) Mandela & Berryman — theme of loss

- Intro: both use loss to show resilience.
- Mandela: loss of freedom -> moral courage, political growth.
- “The Ball Poem”: loss of a ball => lesson about accepting loss and learning to value intangible things.
- Conclude: loss leads to maturity and emotional growth.

Q11 — Long Answer (6 marks)

Choose one — structure and key points

( a) The Necklace

(Any Three value points)

- (a) Matilda – borrowed the necklace from her friend – lost it – made
- (b) sacrifices to return the necklace
- (c) Led a miserable life – changed lodgings – rented a room in the attic – did
- (d) menial work in the kitchen – took down the refuge to the street – clothed
- (e) like an ordinary woman
- (f) Mr. Loisel also worked hard for a merchant- did copying at 5 sous a page
- (g) Took ten years to pay the debt incurred in buying a new necklace
- (h) Accidentally met her friend after ten years – was informed that the necklace was fake
- (i) Realized – all her sacrifices were in vain
- (j) (Any other relevant point to be accepted)

(b) (A Question of Trust)

(Any Three value points)

Horace planned the robbery in all details.

A magazine article had described the house with all the rooms and mentioned the safe behind the painting.

For 2 weeks, he studied the house, its rooms, electric wiring, path and its garden / knew the dog by name

He had definite information that the two servants had gone to the

movies.

He came out from behind the garden wall.

Packed his tools carefully on his back.

Put on gloves, knew the house keeper hung the key to the kitchen door on a hook inside. He took the key and opened the house.

# SOLUTIONS & MARKING SCHEME

Pre-Board Exam (2025-26) - Class X Artificial Intelligence (417) Total Marks: 50

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## SECTION A — OBJECTIVE TYPE QUESTIONS (24 marks)

(Each question in Section A = 1 mark).

Students answer as instructed in the question paper.

### Q1 (Answer any 4 of 6) — Correct options (1 mark each)

- i. **a. Discipline** — (1)
- ii. **b. Solar energy** — (1)
- iii. **b. Using spreadsheets for data** — (1)
- iv. **c. Innovators** — (1)
- v. **a. Email** — (1)
- vi. **c. Adaptability** — (1)

### Q2 (Answer any 5 of 6) — Correct answers (1 mark each)

- i. **c. A is true, R is false.**  
- (A true: AI systems can analyse large datasets; R false: they do not always produce 100% accurate predictions.) — (1)
- ii. **b. AI Bias** — (1)
- iii. **d. Chemical** (NOT in Gardner's list) — (1)
- iv. **c) Natural Language Processing (NLP)** — (1)
- v. **d) Networking** — (1)
- vi. **b. Stop Words** (e.g., “is”, “the”, “of”) — (1)

### Q3 (Answer any 5 of 6) — Correct answers (1 mark each)

- i. **a. IoT** — (1)
- ii. **c.Privacy** — (1)
- iii. **c) Supervised Learning** — (1)
- iv. **b. Feature Extraction** — (1)
- v. **b. Robustness** — (1)
- vi. **c. Recall** (focuses on True Positives and False Negatives) — (1)

### Q4 (Answer any 5 of 6) — Correct answers (1 mark each)

- i. **b. Deep Learning** — (1)
- ii. **Confusion Matrix** (write term) — (1)
- iii. **b. Overfitting** — (1)
- iv. **a. 255** (grayscale pixel range 0–255) — (1)
- v. **a. Sentiment Analysis** — (1)
- vi. **b. Model learns noise along with patterns** (true about overfitting) — (1)

### Q5 (Answer any 5 of 6) — Correct answers (1 mark each)

- i. **b. NLP** (voice assistants) — (1)
- ii. **c. Precision** — (1)
- iii. **a. Brightness / Intensity** — (1)
- iv. **d. Object Detection** (NOT an NLP application) — (1)

- v. **TF-IDF = Term Frequency – Inverse Document Frequency** (full form) — (1)  
vi. **c. False Negative** (model predicts No Disease but patient has disease) — (1)
- 

## SECTION B — SUBJECT SPECIFIC SKILLS (26 marks)

### Part I — Employability Skills (Answer any 3 out of 5) — $2 \times 3 = 6$ marks

**Q6.** *Enumerate any two barriers to effective communication and how to overcome them.* (2 marks total)

**Model answer (concise):**

- Barrier 1: **Language / technical jargon** — overcome by using simple, clear language and checking understanding (0.5 + 0.5).
- Barrier 2: **Noise/distractions or poor timing** — choose proper time/place, reduce noise, and confirm message (0.5 + 0.5).

**Marking (2):** 1 mark for naming two barriers (0.5 each); 1 mark for remedies (0.5 each).

**Q7.** *In SMART goals, what does ‘M’ stand for? Explain.* (2 marks)

**Model answer:** *M = Measurable.* A measurable goal has clear success criteria (e.g., “increase model accuracy from 70% to 85% in 3 months”).

**Marking:** 1 mark for correct term, 1 mark for brief example/explanation.

**Q8.** Give any four guidelines for maintenance of computers.? (2 marks)

**Model answer:**  $\frac{1}{2}$  mark for any on correct guideline – 1) Keep keyboard, mouse clean, 2) Keep away eatables, 3) Don’t overcharge , 4) Organize coords and other e-debris etc

**Marking:** 1 mark each for short explanation and 1 mark for example.

**Q9.** *How do entrepreneurs generate employment?* (2 marks)

**Model answer:** By starting and scaling businesses they hire staff directly, create upstream/downstream opportunities (suppliers, logistics), and promote small enterprises — generating direct and indirect jobs.

**Marking:** 1 mark for direct job creation, 1 mark for indirect/economic impact.

**Q10.** *Why is sustainable development important?* (2 marks)

**Model answer:** It meets present needs while preserving resources for future generations; balances economy, society, and environment; prevents resource depletion.

**Marking:** 1 mark for definition, 1 mark for reason/example.

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### Part II — Short Answer Type (Answer any 4 out of 6) — $2 \times 4 = 8$ marks

**Q11.** *How can you check whether a system is AI-enabled? Give example.* (2 marks)

**Model answer:** Criteria: (a) **Learns from data / improves** with more examples; (b) **Makes predictions/decisions** without explicit human-coded rules. Example: Netflix recommender learns from viewing history and suggests shows.

**Marking:** 1 mark for criteria (either), 1 mark for example/explanation.

**Q12.** Explain any one ethical framework used in AI.? *Explain.* (2 marks)

**Model answer:** Any ethical framework explanation

**Marking:** 1 mark for correct name, 1 mark for explanation

**Q13. 1. Classification:** Predicts categorical values (e.g., spam or not spam in emails).

**2. Regression:** Predicts continuous values (e.g., predicting temperature).

**Marking:** 1 mark each .

**Q14.** Describe the terms – Pixel, Resolution (2 marks)

**Model answer:** A pixel is the smallest unit of a digital image, a tiny square of color that forms the building blocks of the whole picture.

Resolution is the measure of how many pixels make up an image or display, usually expressed as the width and height in pixels (e.g., 1920x1080) or as pixels per inch (PPI) for printed images, indicating the level of detail and sharpness.

**Marking:** 1 mark for correct definition of each.

**Q15.** *Identify stop words in the sentence:*

“The boy is playing in the park with his friends during the evening.” (2 marks)

**Model answer (stop words):** the, is, in, the, with, his, during, the → (unique set: **the, is, in, with, his, during**)

**Marking:** 1 mark for listing at least 4 stop words; 1 mark for correct identification/explanation.

**Q16.** Draw the confusion matrix for  $TP=20$ ,  $TN=15$ ,  $FP=10$ ,  $FN=5$ . (2 marks)

**Model answer (table):**

|            | Predicted Yes | Predicted No |
|------------|---------------|--------------|
| Actual Yes | TP = 20       | FN = 5       |
| Actual No  | FP = 10       | TN = 15      |

**Marking:** 1 mark for correct layout, 1 mark for correct numbers.

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### Part III — Long Answer Type (Answer any 3 out of 5) — $4 \times 3 = 12$ marks

**Q17.** Systems can be designed using fixed rules or by applying Artificial Intelligence.

Differentiate between **AI-based systems** and **Rule-based systems** with suitable examples. (4 marks)

**Model answer (concise):**

#### 1. Rule-Based Systems

(1 mark)

- Work on predefined rules and logic (IF–THEN statements).
- Cannot learn from data; only perform as programmed.
- **Example:** A thermostat that turns ON the heater if temperature  $< 18^{\circ}\text{C}$ .

#### 2. AI-Based Systems

(1 mark)

- Learn patterns from data using algorithms (machine learning, deep learning).
- Can adapt, improve, and make predictions.
- **Example:** Google Maps predicting traffic conditions using live data.

### 3. Key Difference

(2 marks)

- **Rule-based** = Static, no learning, limited flexibility.
- **AI-based** = Dynamic, learns from data, adaptive decision-making.

**Q18.** Explain the stages of AI Project Cycle with an example. (4 marks)

**Model answer (stages & brief example):**

1. **Scoping / problem definition** (what to solve)
2. **Data collection** (gather images/text/sensors)
3. **Data preparation** (cleaning, labeling, splitting)
4. **Model selection & training** (choose algorithm, train)
5. **Evaluation** (metrics, validation)

*Example:* Crop-disease detector: scope → collect leaf images → label diseased/healthy → train CNN → validate accuracy → deploy mobile app → monitor and retrain with new images.

**Marking:** 2 marks for listing/explaining stages; 2 marks for mapping a clear example.

**Q19.** Explain the layers in ANN, with diagram and their functions. (4 marks)

**Model answer :** 1 mark for definition of ANN  
1 mark for correct layers  
1 mark for functions of layers  
1 mark for diagram

**Q20.** In NLP, text normalization helps in reducing words to their base form. Using the words “*studies*” and “*better*”:

1. Show the result of **stemming**.
2. Show the result of **lemmatization**.

Briefly explain the **difference** between the two techniques.. (4 marks)

**Model answer:**

#### 1. Stemming

(1 mark)

- studies → *studi*
- better → *better*

#### 2. Lemmatization

(1 mark)

- studies → *study*
- better → *good*

### 3. Difference

(2 marks)

- **Stemming:** Cuts suffixes/prefixes crudely; may produce non-words (*studi*).
- **Lemmatization:** Uses dictionary/grammar rules; gives meaningful root forms (*study*, *good*).
- Lemmatization is **more accurate but slower**; stemming is **faster but less accurate**.

Q21.

Total emails = 100

- Actual Spam = 50
- Predicted Spam = 40, out of which:
  - 30 correct → True Positives (TP)
  - 10 incorrect → False Positives (FP)

Now,

- False Negatives (FN) = Actual Spam – TP = 50 – 30 = 20
- True Negatives (TN) = Total – (TP + FP + FN) = 100 – (30 + 10 + 20) = 40

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### Step 2: Confusion Matrix

|                 | Predicted Spam | Predicted Not Spam | Total Actual |
|-----------------|----------------|--------------------|--------------|
| Actual Spam     | TP = 30        | FN = 20            | 50           |
| Actual Not Spam | FP = 10        | TN = 40            | 50           |
| Total Predicted | 40             | 60                 | 100          |

#### 1. Precision

$$\text{Precision} = \frac{TP}{TP + FP} = \frac{30}{30 + 10} = \frac{30}{40} = 0.75 \text{ (75\%)}$$

#### 2. Recall

$$\text{Recall} = \frac{TP}{TP + FN} = \frac{30}{30 + 20} = \frac{30}{50} = 0.60 \text{ (60\%)}$$

#### 3. F1 Score

$$\begin{aligned} F1 &= 2 \times \frac{\text{Precision} \times \text{Recall}}{\text{Precision} + \text{Recall}} \\ &= 2 \times \frac{0.75 \times 0.60}{0.75 + 0.60} = 2 \times \frac{0.45}{1.35} = \frac{0.90}{1.35} \approx 0.67 \text{ (67\%)} \end{aligned}$$



**पूर्व -परिषदीय परीक्षा-2025-26 / PRE-BOARD EXAM-(2025-26)**

**कक्षा X / CLASS - X**

**TIME: 2 Hrs**

**विषय: / SUBJECT: ARTIFICIAL INTELLIGENCE (417)**

**MM: 50**

**General Instructions:**

1. Please read the instructions carefully.
2. This Question Paper consists of 21 questions in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
  - i. This section has 05 questions.
  - ii. Marks allotted are mentioned against each question/part.
  - iii. There is no negative marking.
  - iv. Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
  - i. This section has 16 questions.
  - ii. A candidate has to do 10 questions.
  - iii. Do as per the instructions given.
  - iv. Marks allotted are mentioned against each question/part.

**SECTION A: OBJECTIVE TYPE QUESTIONS (24 MARKS)**

|              |                                                                                                                                                                                                                                                                   |   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| <b>Q1.</b>   | <b>Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)</b>                                                                                                                                                                        |   |
| <b>(i)</b>   | Rahul makes a daily timetable and sticks to it strictly without reminders. Which skill is shown?<br>a. Discipline b. Adaptability c. Responsibility d. Self-Awareness                                                                                             | 1 |
| <b>(ii)</b>  | Which of the following is an eco-friendly practice?<br>a. Using plastic bags b. Solar energy c. Burning waste d. Leaving lights on                                                                                                                                | 1 |
| <b>(iii)</b> | Which is the correct example of ICT application at workplace?<br>a. Painting on canvas b. Using spreadsheets for data c. Farming manually d. Singing                                                                                                              | 1 |
| <b>(iv)</b>  | Entrepreneurs are often called _____ of the economy.<br>a. Consumers b. Producers c. Innovators d. Employees                                                                                                                                                      | 1 |
| <b>(v)</b>   | What is the best way to communicate urgent information to your teacher?<br>a. Email b. WhatsApp c. Poster d. Newsletter                                                                                                                                           | 1 |
| <b>(vi)</b>  | The ability to quickly accept change and adjust is known as _____.<br>a. Motivation b. Time Management c. Adaptability d. Leadership                                                                                                                              | 1 |
| <b>Q2.</b>   | <b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>                                                                                                                                                                                                |   |
| <b>(i)</b>   | Assertion (A): AI systems can analyze large datasets.<br>Reason (R): They always produce 100% accurate predictions.<br>a. Both A and R true, R correct explanation<br>b. Both A and R true, R not correct explanation<br>c. A true, R false<br>d. A false, R true | 1 |
| <b>(ii)</b>  | The unfair treatment of individuals due to biased AI systems is called _____.<br>a. AI Ethics b. AI Bias c. Training Data d. Testing                                                                                                                              | 1 |

|            |                                                                                                                                                                                                                             |   |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| (iii)      | Which among the following is NOT a type of intelligence in Gardner's theory?<br>a. Musical b. Spatial c. Logical-Mathematical d. Chemical                                                                                   | 1 |
| (iv)       | Which domain of AI is used in chatbots and voice assistants?<br>a. Data Science b. Computer Vision c. Natural Language Processing (NLP) d. Robotics                                                                         | 1 |
| (v)        | Which of the following is NOT one of the three domains of AI?<br>a. Data Science b. Computer Vision c. Natural Language Processing d. Networking                                                                            | 1 |
| (vi)       | Words such as 'is', 'the', 'of' are considered _____ in NLP.<br>a. Keywords b. Stop Words c. Entities d. Lemmas                                                                                                             | 1 |
| <b>Q3.</b> | <b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>                                                                                                                                                          |   |
| (i)        | A fridge can sense temperature and regulate cooling automatically. This is an example of –<br>a. IoT b. AI c. ML d. Data Science                                                                                            | 1 |
| (ii)       | Which ethical concern in AI involves protecting sensitive personal information from misuse or unauthorized access?<br>a) Bias and Fairness b) Transparency<br>c) Privacy d) Environmental Responsibility                    | 1 |
| (iii)      | Which type of machine learning uses labelled data (data with known outcomes) to train a model?<br>a) Unsupervised Learning<br>b) Reinforcement Learning<br>c) Supervised Learning<br>d) Neural Network Learning             | 1 |
| (iv)       | Which process extracts important features from an image?<br>a. Object Detection b. Feature Extraction c. Image Compression d. Clustering                                                                                    | 1 |
| (v)        | Which concept from the bioethical framework ensures an AI model can operate reliably and protect against intentional or unintentional interference?<br>a. Fairness<br>b. Robustness<br>c. Transparency<br>d. Explainability | 1 |
| (vi)       | Which evaluation metric focuses on both False Negatives and True Positives?<br>a. Accuracy b. Precision c. Recall d. F1 Score                                                                                               | 1 |
| <b>Q4.</b> | <b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>                                                                                                                                                          |   |
| (i)        | AI models that mimic the structure of neurons in the brain are part of –<br>a. Machine Learning b. Deep Learning c. Data Science d. IoT                                                                                     | 1 |
| (ii)       | The matrix used to evaluate predictions vs. reality is called _____.                                                                                                                                                        | 1 |
| (iii)      | Training accuracy is very high but test accuracy is very low. This problem is called –<br>a. Underfitting b. Overfitting c. Generalization d. Regularization                                                                | 1 |
| (iv)       | A grayscale image pixel ranges from 0 to _____.<br>a. 255 b. 1 c. 100 d. 500                                                                                                                                                | 1 |
| (v)        | Identifying customer feelings from product reviews is an example of –<br>a. Sentiment Analysis b. Object Detection c. Feature Extraction d. Data Cleaning                                                                   | 1 |

|            |                                                                                                                                                                                                                                |   |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| (vi)       | Which of the following is true about overfitting?<br>a. Model performs well on unseen data<br>b. Model learns noise along with patterns<br>c. Training and testing accuracy both high<br>d. Test accuracy higher than training | 1 |
| <b>Q5.</b> | <b>Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)</b>                                                                                                                                                             |   |
| (i)        | Voice assistants like Alexa belong to which AI domain?<br>a. Computer Vision b. NLP c. Data Science d. Robotics                                                                                                                | 1 |
| (ii)       | Percentage of correctly predicted positive values out of predicted positives is –<br>a. Recall b. Accuracy c. Precision d. F1 Score                                                                                            | 1 |
| (iii)      | In an image, pixel intensity represents _____.<br>a. Brightness b. Color c. Size d. Shape                                                                                                                                      | 1 |
| (iv)       | Which is NOT an application of NLP?<br>a. Email Filtering b. Chatbots c. Speech Recognition d. Object Detection                                                                                                                | 1 |
| (v)        | TF-IDF stands for _____.                                                                                                                                                                                                       | 1 |
| (vi)       | If a model always predicts 'No Disease' even when patient has disease, this error is called –<br>a. False Positive b. True Negative c. False Negative d. True Positive                                                         | 1 |

### SECTION B: SUBJECTIVE TYPE QUESTIONS (26 MARKS)

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks) Answer each in 20 – 30 words.

|             |                                                                           |          |
|-------------|---------------------------------------------------------------------------|----------|
| <b>Q6.</b>  | Mention two barriers to effective communication and how to overcome them. | <b>2</b> |
| <b>Q7.</b>  | In SMART goals, what does 'M' stand for? Explain.                         | <b>2</b> |
| <b>Q8.</b>  | Give any four guidelines for maintenance of computers.                    | <b>2</b> |
| <b>Q9.</b>  | How do entrepreneurs generate employment in society?                      | <b>2</b> |
| <b>Q10.</b> | Why is sustainable development important in today's world?                | <b>2</b> |

**Answer any 4 out of the given 6 questions (2 x 4 = 8 marks) Answer each in 20 – 30 words.**

|             |                                                                                                                   |          |
|-------------|-------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q11.</b> | How can you check if a system is AI-enabled? Give example.                                                        | <b>2</b> |
| <b>Q12.</b> | Explain any one ethical framework used in AI.                                                                     | <b>2</b> |
| <b>Q13.</b> | Name the two sub-categories of Supervised Learning and explain briefly.                                           | <b>2</b> |
| <b>Q14.</b> | Describe the terms – Pixel, Resolution                                                                            | <b>2</b> |
| <b>Q15.</b> | Identify the stop words in the sentence:<br>'The boy is playing in the park with his friends during the evening.' | <b>2</b> |
| <b>Q16.</b> | Draw a confusion matrix for: TP=20, TN=15, FP=10, FN=5.                                                           | <b>2</b> |

**Answer any 3 out of the given 5 questions (4 x 3 = 12 marks) Answer questions in 50– 80 words each**

|             |                                                                                                                                                                                       |          |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Q17.</b> | Systems can be designed using fixed rules or by applying Artificial Intelligence. Differentiate between <b>AI-based systems</b> and <b>Rule-based systems</b> with suitable examples. | <b>4</b> |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                       |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------|---------------------------|---------------------|--------------------|----|----|----|------------------------|----|----|----|------------------------|----|----|-----|---|
|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                           |                       |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| Q18                    | Explain the stages of AI Project Cycle with a suitable example.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4                         |                       |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| Q19                    | Explain the layers in ANN, with diagram and their functions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4                         |                       |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| Q20.                   | <p>In NLP, text normalization helps in reducing words to their base form. Using the words “<i>studies</i>” and “<i>better</i>”:</p> <p>1. Show the result of <b>stemming</b>.</p> <p>2. Show the result of <b>lemmatization</b>.</p> <p>Briefly explain the <b>difference</b> between the two techniques.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4                         |                       |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| Q21.                   | <p>An AI model is used to classify emails as <b>Spam</b> or <b>Not Spam</b>. The following confusion matrix summarizes the model’s performance on 100 emails:</p> <table border="1"><tr><td></td><td><b>Predicted Spam</b></td><td><b>Predicted Not Spam</b></td><td><b>Total Actual</b></td></tr><tr><td><b>Actual Spam</b></td><td>30</td><td>20</td><td>50</td></tr><tr><td><b>Actual Not Spam</b></td><td>10</td><td>40</td><td>50</td></tr><tr><td><b>Total Predicted</b></td><td>40</td><td>60</td><td>100</td></tr></table> <p>Based on the above confusion matrix, draw the proper layout of confusion matrix and calculate the following performance measures of the model:</p> <p>(i) <b>Precision</b></p> <p>(ii) <b>Recall</b></p> <p>(iii) <b>F1 Score</b></p> |                           | <b>Predicted Spam</b> | <b>Predicted Not Spam</b> | <b>Total Actual</b> | <b>Actual Spam</b> | 30 | 20 | 50 | <b>Actual Not Spam</b> | 10 | 40 | 50 | <b>Total Predicted</b> | 40 | 60 | 100 | 4 |
|                        | <b>Predicted Spam</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Predicted Not Spam</b> | <b>Total Actual</b>   |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| <b>Actual Spam</b>     | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 20                        | 50                    |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| <b>Actual Not Spam</b> | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 40                        | 50                    |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |
| <b>Total Predicted</b> | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 60                        | 100                   |                           |                     |                    |    |    |    |                        |    |    |    |                        |    |    |     |   |