

II Pre-Board Examination, 2025–26

Sub : Artificial Intelligence (417)

Time : 2.00 Hrs.]

Class – X

[M. M. : 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

- Q. 1 Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)
- i. Aisha moved from Egypt to Germany for work but finds it difficult to adjust because she is not familiar with German customs and workplace etiquette, which affects her interactions with colleagues. This situation illustrates a:

a) Interpersonal barrier	b) Cultural barrier	
c) Physical barrier	d) Linguistic barrier	1

 - ii. _____ operating system enables multiple users to work on the same computer at different times or simultaneously.

a) multiprogramming.	b) multiprocessors.	
c) multi-user.	d) multi-tasking.	1

 - iii. From the following statements, which one is not the positive impact of Entrepreneurship on society:

a) Stimulates Innovation and Efficiency	
b) Creates Jobs and Employment Opportunities	
c) Solves the problems of the society	
d) Discourages welfare of the society	1

 - iv. The Sustainable Development Goals (SDGs) aim to tackle key challenges faced by businesses, governments, and society, such as:

a) Gender Equality	b) Energy & Climate Change	
c) Biodiversity	d) All of the above	1

 - v. Which of the following is not one of the suggested steps to manage emotional intelligence?

a) Making decisions purely based on emotions	
b) Observing your own behavior to understand your emotions	
c) Practicing meditation and yoga to stay calm	
d) Thinking rationally before making decisions	1

- vi. Which of the following is not a step to build self-motivation
- | | | |
|--------------------------|----------------------------------|---|
| a) Focusing on your goal | b) Planning to achieve your goal | |
| c) Being undisciplined. | d) Finding out your strength | 1 |

Q. 2 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

i. Life support systems and ventilators are equipped with multiple sensors that are designed to monitor and observe body signals in order to activate the device's features. For example, as soon as it senses a drop in the level of oxygen in a person's body, it turns on the artificial oxygen supply. Ventilators are an example of:

- | | |
|--|---|
| a) Machine with emotional intelligence | |
| b) Artificial general intelligence | |
| c) Automated machine | |
| d) Computer vision technology | 1 |

ii. Assertion(A): A self-driving car is made up of a combination of sensors, cameras, radar and AI.

Reason (R): The owner is liable if a self-driving car is involved in an accident.

- | | |
|--|---|
| a) Both A and R are correct and R is the correct explanation of A. | |
| b) Both A and R are correct but R is NOT the correct explanation of A. | |
| c) A is correct but R is incorrect. | |
| d) A is incorrect but R is correct. | 1 |

iii. Statement 1 : In "When" block of 4Ws canvas we find the stakeholders.

Statement 2: Stakeholders are the people who face a particular problem and would be benefitted with the solution.

- | | |
|--|--|
| a) Both Statement 1 and Statement 2 are correct. | |
| b) Both Statement 1 and Statement 2 are incorrect. | |

- c) Statement 1 is correct but Statement2 is incorrect.
- d) Statement1 is incorrect but Statement2 is correct. 1
- iv. Whenever we want an AI project to be able to predict an output, we need to_____
- a) first train it is using the data. b) first test it using the data
- c) Both a an b d) Neither a and b 1
- v. _____ is mainly focused on enhancing raw input images or preparing them for other tasks, such as rescaling, correcting brightness, or changing tones. It is a subset of _____.
- a) Computer Vision; Image Processing
- b) Machine Learning; Artificial Intelligence
- c) Image Processing; Computer Vision
- d) Object Detection; Image Processing 1
- vi. What is the primary challenge faced by computers in understanding human languages?
- a) Complexity of human languages
- b) Lack of computational power
- c) Incompatibility with numerical data
- d) Limited vocabulary 1

Q.3 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. Identify the domain of AI to which the following image belongs: 1



- ii. Name any 2 methods of collecting data.
- a) Surveys and Interviews
 - b) Rumors and Myths
 - c) AI models and applications
 - d) Imagination and thoughts 1
- iii. What is the core task of image classification?
- a) identifying objects and their locations in images
 - b) Segmenting objects into individual pixels
 - c) Assigning an input image one label from a fixed set of categories
 - d) Detecting instances of real-world objects in images 1
- iv. The goal when evaluating an AI model is to:
- a) Maximize error and minimize accuracy
 - b) Minimize error and maximize accuracy
 - c) Focus solely on the number of data points used
 - d) Prioritize the complexity of the model 1
- v. Assertion (A): A Neural Network helps in building predictive models based on huge data sets.
- Reason (R): Backpropagation is one of the techniques used to train an Artificial Neural Network.
- a) Both A and R are correct and R is the correct explanation of A.
 - b) Both A and R are correct but R is NOT the correct explanation of A.
 - c) A is correct but R is incorrect.
 - d) A is incorrect but R is correct. 1

- vi. What will be the outcome, if the Prediction is "Yes" and it matches with the Reality?
 What will be the outcome, if the Prediction is "Yes" and it does not match the Reality?
- a) True Positive, True Negative b) True Negative, False Negative
 c) True Negative, False Positive d) True Positive, False Positive 1

Q. 4 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. What is the primary function of an activation function in a Perceptron?
- a) To store data
 b) To introduce non-linearity into the model
 c) To display the output
 d) To connect to the internet 1
- ii. In _____, the machine is trained with huge amounts of data which helps it in training itself around the data.
- a) Supervised Learning
 b) Deep Learning
 c) Classification
 d) Unsupervised Learning 1
- iii. Statement 1: The testing data set is a collection of examples given to the model to analyze and learn.
 Statement 2: The training data set is used to test the accuracy of the model. Which of the following is correct?
- a) Both Statement 1 and Statement 2 are correct.
 b) Both Statement 1 and Statement 2 are incorrect.
 c) Only Statement 1 is correct.
 d) Only Statement 2 is correct. 1

- iv. An artificially intelligent car decreases its speed based on its distance from the car in front of it. Which algorithm is used?
- | | | |
|----------------------|------------------------|---|
| a) Naïve-Bayes | b) Decision Tree | |
| c) Linear Regression | d) Logistic Regression | 1 |
- v. What is the primary objective of the Convolution Layer in a Convolutional Neural Network (CNN)?
- | | |
|---|---|
| a) To flatten the input image | |
| b) To assign importance to various aspects/objects in the image | |
| c) To reduce the spatial size of the input image | |
| d) To perform element-wise multiplication of image arrays | 1 |
- vi. Which feature of NLP helps in understanding the emotions of the people mentioned with the feedback?
- | | | |
|------------------------|----------------------------|---|
| a) Virtual Assistants | b) Sentiment Analysis | |
| c) Text classification | d) Automatic Summarization | 1 |

Q. 5 Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)

- i. Kartik is a professional psychologist. He runs a clinic where he helps people with mental health issues. He has a natural capability to read human behaviour, temperament and mood, which helps him in quickly diagnosing and treating the problem. Which of the following intelligence quality does Kartik possess?
- | | |
|--------------------------------------|---|
| a) Musical Intelligence | |
| b) Spatial Visual Intelligence | |
| c) Interpersonal Intelligence | |
| d) Mathematical Logical Intelligence | 1 |

- vi. What are the stemmed and lemmatized forms of the word 'running'?
- a) Stemmed: runn, Lemmatized: running
 - b) Stemmed: run, Lemmatized: run
 - c) Stemmed: running, Lemmatized: run
 - d) Stemmed: run, Lemmatized: running 1

SECTION - B : SUBJECTIVE TYPE QUESTIONS

Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)

Answer each question in 20 – 30 words.

- Q. 6 What is an adjective? Give an example 2
- Q. 7 List four methods to manage stress effectively 2
- Q. 8 "Cybersecurity breach is the unauthorized access to or leakage of information stored in a computer." Explain two ways in which personal information can be lost or leaked. 2
- Q. 9 Priya manages a small event planning business. She schedules events, allocates staff for different tasks, and ensures all materials are ready for the event.
Identify the two functions of an entrepreneur. 2
- Q. 10 A school organizes workshops to teach students about climate change, health, and sustainable practices, encouraging them to take community action.

Question:

Identify the type of SDG goal being promoted and mention two benefits 2

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

- Q. 11 In an AI project cycle, what activities are performed in the first and second stages? 2
- Q. 12 A hospital uses an AI system to predict the likelihood of a patient developing diabetes based on past health records.

Question:

Identify the type of AI model and one advantage. 2

Q. 13 A robot learns to play a game by trying different moves and receiving rewards or penalties.

Explain how this type of learning is different from supervised and unsupervised learning. 2

Q. 14 What is model evaluation in machine learning? Explain one way it helps improve an AI model. 2

Q. 15 How an RGB image is different from a grayscale image? 2

Q. 16 Consider the sentence:

"Artificial Intelligence is transforming the world."

a) Identify the NLP stage used when the sentence is split into words.

b) Count the number of tokens in the sentence. 1+1=2

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

Q. 17 A university uses an AI tool to evaluate students' essays for a writing competition. The algorithm gives higher scores to essays containing complex English words and patterns it learned from past winners. Students from non-English backgrounds, who use simpler language, receive lower scores even when their ideas are creative and original.

Questions:

a) Identify two reasons why the algorithm gave biased results.

b) Mention two bioethics principles that can help solve such a problem and explain how they apply. 2+2=4

Q. 18 Explain the structure of an Artificial Neural Network (ANN). Name its main components and describe the function of each component 4

Q. 19 Identify the type of Machine Learning (ML) or Deep Learning (DL) application being used in the following scenarios:

- a) A smartphone app monitors your daily sleep patterns and gives suggestions to improve sleep quality. One night, it notices an unusual sleeping trend and alerts you to check your health.
- b) An autonomous car uses AI cameras and sensors to detect objects on the road, such as pedestrians, other vehicles, traffic signs, and obstacles, and makes real-time decisions to drive safely.
- c) A photo-editing app uses AI to detect faces in your pictures. It can automatically apply filters, adjust brightness, or even swap backgrounds for each face detected in the image.
- d) An AI-powered signature verification system at a bank lets you authorize transactions by drawing your signature on a touchscreen. The system recognizes your unique handwriting style and verifies authenticity. 1+1+1+1=4

Q. 20 A company uses an AI model to detect defective products in a factory. Out of 200 products:

80 were correctly predicted as defective.

90 were correctly predicted as non-defective.

20 were predicted as defective but were actually non-defective.

10 were predicted as non-defective but were actually defective.

- a) Draw the confusion matrix.
- b) Calculate the accuracy of the model.
- c) Find the total number of wrong predictions. 2+1+1=4

Q. 21 Given three documents:

Doc1: "Cats are great pets"

Doc2: "Dogs are great companions"

Doc3: "Pets need care and love"

- a) Create the dictionary of unique words from these documents.
- b) Construct the document vector for Doc2 based on the dictionary.
- c) Explain how Bag of Words help in feature extraction.
- d) Why is the order of words not considered important in Bag of Words? $1+1+1+1=4$

II Pre-Board Examination, 2025–26

Sub : Social Science

Time : 3.00 Hrs.]

Class – X

[M. M. : 80

सामान्य निर्देश: General Instructions:

1. प्रश्नपत्र में 38 प्रश्न हैं। सभी प्रश्न अनिवार्य हैं।
There are 38 questions in the Question paper. All questions are compulsory.
2. प्रश्नपत्र में चार खंड हैं - A- इतिहास, B- भूगोल, C- राजनीति विज्ञान और D- अर्थशास्त्र।
The question paper has Four Sections - A-History, B-Geography, C-Political Science, and D-Economics.
3. प्रत्येक खंड 20 अंकों का है और इसमें MCQ, VSA, SA, LA और CBQ हैं।
Each Section is of 20 Marks and has MCQs, VSA, SA, LAs and CBQ.
4. अति लघु उत्तरीय प्रश्न (VSA), प्रत्येक 2 अंक का है। प्रत्येक प्रश्न का उत्तर 40 शब्दों से अधिक नहीं होना चाहिए।
Very Short Answer Type Questions (VSA), carry 2 marks each. Answers to each question should not exceed 40 words.
5. लघु उत्तरीय प्रश्न (SA), प्रत्येक 3 अंक का है। प्रत्येक प्रश्न का उत्तर 60 शब्दों से अधिक नहीं होना चाहिए।
Short Answer Type Questions (SA), carry 3 marks each. Answers to each question should not exceed 60 words.
6. दीर्घ उत्तरीय प्रश्न (LA), प्रत्येक 5 अंक का है। प्रत्येक प्रश्न का उत्तर 120 शब्दों से अधिक नहीं होना चाहिए।
Long answer type questions (LA), carry 5 marks each. Answers to each question should not exceed 120 words.
7. केस आधारित प्रश्न (CBQ) हैं जिनमें तीन उप-प्रश्न हैं और प्रत्येक 4 अंकों का है। प्रत्येक प्रश्न का उत्तर 100 शब्दों से अधिक नहीं होना चाहिए।
There are case based questions (CBQ) with three sub questions and are of 4 marks each. Answers to each question should not exceed 100 words.

8. मानचित्र-आधारित प्रश्न 5 अंकों के हैं और दो भागों में विभाजित हैं - प्रश्न 9. खंड अ - इतिहास (2 अंक) और प्रश्न 19. खंड ब - भूगोल (3 अंक)।

The map-based questions carry 5 marks with two parts- Q9. In Section A - History (2 marks) and Q19. In Section B - Geography (3 marks).

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 उत्तर देना होगा।

There is no overall choice in the question paper. However, an internal choice has been provided in few questions. Only one of the choices in such questions must be attempted.

SECTION A – HISTORY (20 Marks)

खंड अ – इतिहास (20 अंक)

1. Assertion (A): The female allegory "Germania" became a symbol of the German nation.

(1)

Reason (R): Germania was shown wearing a crown of oak leaves, symbolising heroism.

Choose the correct option:

(1)

- A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.

1. अभिकथन (A): स्त्री रूपक "जर्मनिया" जर्मन राष्ट्र का प्रतीक बन गया।

कारण (R): जर्मनिया को ओक के पत्तों का मुकुट पहने दिखाया गया था, जो वीरता का प्रतीक था।

सही विकल्प चुनें:

(1)

- A. A और R दोनों सत्य हैं, और R, A की सही व्याख्या है।
B. A और R दोनों सत्य हैं, लेकिन R, A की सही व्याख्या नहीं है।
C. A सत्य है लेकिन R असत्य है।
D. A असत्य है लेकिन R सत्य है।

2. Consider the following statements about the Non-Cooperation Movement (1920–22): (1)

- I. It was launched by Gandhiji after the Jallianwala Bagh massacre.
- II. It included boycotts of schools, law courts, and foreign cloth.
- III. It involved surrender of titles and resignations from government jobs.
- IV. It ended immediately after the Simon Commission was appointed.

Which of the above are correct?

- | | |
|------------------|-------------------|
| a. I, II and III | B. II, III and IV |
| C. I and IV only | D. I and II only |

2. असहयोग आंदोलन (1920-22) के बारे में निम्नलिखित कथनों पर विचार कीजिए:

- I. यह जलियांवाला बाग हत्याकांड के बाद गांधीजी द्वारा शुरू किया गया था।
- II. इसमें स्कूलों, अदालतों और विदेशी कपड़ों का बहिष्कार शामिल था।
- III. इसमें उपाधियों का त्याग और सरकारी नौकरियों से त्यागपत्र शामिल थे।
- IV. यह साइमन कमीशन की नियुक्ति के तुरंत बाद समाप्त हो गया।

उपरोक्त में से कौन से सही हैं?

- | | |
|-----------------|------------------|
| A. I, II और III | B. II, III और IV |
| C. केवल I और IV | D. केवल I और II |

3. Which of the following was the main cause of the Great economic Depression (1929)? (1)

- A. Overproduction in agriculture and industries.
- B. Discovery of new gold mines.
- C. Withdrawal of the British from colonies.
- D. High demand for manufactured goods.

3. निम्नलिखित में से कौन महान आर्थिक मंदी (1929) का मुख्य कारण था?

- | | |
|-------------------------------------|----------------------------------|
| A. कृषि और उद्योगों में अतिउत्पादन। | B. नई सोने की खदानों की खोज। |
| C. उपनिवेशों से अंग्रेजों का हटना। | D. निर्मित वस्तुओं की उच्च माँग। |

4. Which of the following was a significant impact of the development of print culture in 18th-century India? (1)

- A. It weakened the national movement.
- B. It united people by spreading new ideas.
- C. It replaced oral culture completely.
- D. It restricted access to books and newspapers.

4. 18वीं शताब्दी के भारत में मुद्रण संस्कृति के विकास का निम्नलिखित में से कौन सा महत्वपूर्ण प्रभाव था?

- A. इसने राष्ट्रीय आंदोलन को कमजोर कर दिया।
- B. इसने नए विचारों का प्रसार करके लोगों को एकजुट किया।
- C. इसने मौखिक संस्कृति को पूरी तरह से प्रतिस्थापित कर दिया।
- D. इसने पुस्तकों और समाचार पत्रों तक पहुँच को प्रतिबंधित कर दिया।

5A. State any two items or commodities that were carried along the Silk Routes and one short consequence of these exchanges.

5A. रेशम मार्ग से ले जाई जाने वाली किन्हीं दो वस्तुओं या वस्तुओं का उल्लेख कीजिए तथा इन विनिमयों का एक संक्षिप्त परिणाम बताइए। (2)

OR

5B. How did the introduction of new crops from America transform the lives of Europeans? Explain with three points.

5B. अमेरिका से नई फसलों के आगमन ने यूरोपीय लोगों के जीवन को कैसे बदल दिया? तीन बिंदुओं के साथ समझाइए।

6A. Explain three ways in which print culture weakened old authorities in Europe. (3)

6A. तीन तरीकों की व्याख्या करें जिनसे मुद्रण संस्कृति ने यूरोप में पुराने प्राधिकारियों को कमजोर किया। (3)

OR

6B. Explain three ways in which print culture contributed to the emergence of a public sphere and nationalist discussion in India. (3)

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- 6B. तीन तरीकों की व्याख्या करें जिनसे मुद्रण संस्कृति ने भारत में सार्वजनिक क्षेत्र और राष्ट्रवादी चर्चा के उद्भव में योगदान दिया।
- 7A. "Culture played an important role in creating the idea of nation in Europe" .Support the statement with examples. (5)
- 7A. "यूरोप में राष्ट्र की अवधारणा के निर्माण में संस्कृति ने महत्वपूर्ण भूमिका निभाई।" उदाहरणों सहित कथन का समर्थन कीजिए।

OR

- 7B. How did Balkans become the most serious source of nationalist tension in Europe after 1871. Explain with examples. (5)
- 7B. 1871 के बाद बाल्कन यूरोप में राष्ट्रवादी तनाव का सबसे गंभीर स्रोत कैसे बन गया? उदाहरण सहित समझाइए।
8. Read the given text and answer the following questions:

Mahatma Gandhi's thoughts on Satyagraha 'It is said of "passive resistance" that it is the weapon of the weak, but the power which is the subject of the article can be used only by the strong. This power is not passive resistance; indeed it calls for activity. The movement South Africa was not passive but active...." Satyagraha is not physical force. A Satyagrahi does not inflict, pain on the adversary; he does not seek his destruction.... In the use of Satyagraha, there is no ill-will whatever."

'Satyagraha is pure soul-force. Truth is the very substance of the soul. That is why this force is called Satyagraha. The soul is informed with knowledge. In it burns the flame of love... Non-violence is the supreme Dharma...'

'It is certain that India cannot rival Britain or Europe in force of arms. The British worship the war-god and they can all of them become, as they are becoming, bearers of arms. The hundreds of millions in India can never carry arms. They have made the religion of non-violence their own...'

- 8A. What type of movement Gandhiji organized in South Africa? (1)
- 8B. Why is Satyagraha considered as pure soul force? (2)
- 8C. How has Gandhiji described passive resistance? (1)

8. दिए गए पाठ को पढ़ें और निम्नलिखित प्रश्नों के उत्तर दें:

सत्याग्रह पर महात्मा गांधी के विचार "निष्क्रिय प्रतिरोध" के बारे में कहा जाता है कि यह कमज़ोर का हथियार है, लेकिन जिस शक्ति का उपयोग इस लेख में किया गया है, उसका प्रयोग केवल बलवान ही कर सकता है। यह शक्ति निष्क्रिय प्रतिरोध नहीं है; वास्तव में यह सक्रियता की माँग करती है। दक्षिण अफ्रीका का आंदोलन निष्क्रिय नहीं, बल्कि सक्रिय था...' सत्याग्रह शारीरिक बल नहीं है। एक सत्याग्रही विरोधी को कष्ट नहीं पहुँचाता; वह उसका विनाश नहीं चाहता... सत्याग्रह के प्रयोग में किसी भी प्रकार की दुर्भावना नहीं होती।' 'सत्याग्रह शुद्ध आत्म-बल है। सत्य ही आत्मा का सार है। इसीलिए इस बल को सत्याग्रह कहा जाता है। आत्मा ज्ञान से युक्त होती है। इसमें प्रेम की ज्वाला जलती है... अहिंसा परम धर्म है...' 'यह निश्चित है कि भारत शस्त्र-बल में ब्रिटेन या यूरोप का मुकाबला नहीं कर सकता। अंग्रेज युद्ध-देवता की पूजा करते हैं और वे सभी, जैसे वे बन रहे हैं, शस्त्र-धारक बन सकते हैं।' भारत में करोड़ों लोग कभी हथियार नहीं उठा सकते। उन्होंने अहिंसा को अपना धर्म बना लिया है..."

- 8A. दक्षिण अफ्रीका में गांधीजी ने किस प्रकार का आंदोलन चलाया? (1)
- 8B. सत्याग्रह को शुद्ध आत्मिक शक्ति क्यों माना जाता है? (2)
- 8C. गांधीजी ने निष्क्रिय प्रतिरोध का वर्णन कैसे किया है? (1)

MAP SKILL (History) (2)

9. On the given outline map of India, locate and label:

- A. A place where the 1919 massacre took place.
- B. City where the Congress session was held in September 1920.

मानचित्र कौशल (इतिहास) (2)

दिए गए भारत के रेखा मानचित्र पर निम्नलिखित का पता लगाएँ और नामांकित करें:

- A. वह स्थान जहाँ 1919 का नरसंहार हुआ था।
- B. वह शहर जहाँ सितंबर 1920 में कांग्रेस का अधिवेशन हुआ था।

Note: The following question is for Visually Impaired Candidates only in lieu of Q. No. 9

9. A Write the name of the place where the Jallianwallah Massacre took place.
9. B Name the city where the Congress session was held in September 1920.

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

9. क उस स्थान का नाम लिखिए जहाँ जलियाँवाला हत्याकांड हुआ था।
9. ख उस शहर का नाम बताइए जहाँ सितंबर 1920 में कांग्रेस का अधिवेशन हुआ था।

SECTION B – GEOGRAPHY

(20 Marks)

खंड बी - भूगोल

(20 अंक)

10. Assertion (A): Resource planning in India involves identification of resources, planning structure and matching resource development with plans. (1)

Reason (R): India has uneven distribution of resources.

Choose the correct option:

- (a) Both A and R are true, and R is the correct explanation of A.
(b) Both A and R are true, but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.
10. अभिकथन (A): भारत में संसाधन नियोजन में संसाधनों की पहचान, नियोजन संरचना और योजनाओं के साथ संसाधन विकास का मिलान शामिल है। (1)

कारण (R): भारत में संसाधनों का असमान वितरण है।

सही विकल्प चुनें:

- (क) A और R दोनों सत्य हैं, और R, A की सही व्याख्या है।
(ख) A और R दोनों सत्य हैं, लेकिन R, A की सही व्याख्या नहीं है।
(ग) A सत्य है, लेकिन R असत्य है।
(घ) A असत्य है, लेकिन R सत्य है।

11. Consider the following statements about forests and wildlife in India: (1)

- I. Reserved forests are most protected.
- II. Protected forests are maintained by the community.
- III. Unclassed forests are controlled by the government only.
- IV. Community forests are managed by local people.

Which statements are correct?

- A. I and IV
- B. I and II
- C. I and III
- D. II and III

11. भारत में वनों और वन्यजीवों के बारे में निम्नलिखित कथनों पर विचार करें: (1)

- I. आरक्षित वन सबसे अधिक संरक्षित हैं।
- II. संरक्षित वनों का रखरखाव समुदाय द्वारा किया जाता है।
- III. अवर्गीकृत वनों पर केवल सरकार का नियंत्रण होता है।
- IV. सामुदायिक वनों का प्रबंधन स्थानीय लोगों द्वारा किया जाता है।

कौन से कथन सही हैं?

- A. I & IV
- B. I & II
- C. I & III
- D. II & III

12. Which one of the following states has made rooftop rainwater harvesting compulsory? (1)

- A. Tamil Nadu
- B. Kerala
- C. Assam
- D. Punjab

12. निम्नलिखित में से किस राज्य ने छत पर वर्षा जल संचयन को अनिवार्य बना दिया है?

- A. तमिलनाडु
- B. केरल
- C. असम
- D. पंजाब

13. Which state is the leading producer of coffee in India? (1)

- A. Assam
- B. Kerala
- C. Karnataka
- D. Tamil Nadu

13. भारत में कॉफी का प्रमुख उत्पादक राज्य कौन सा है?
A. असम B. केरल
C. कर्नाटक D. तमिलनाडु
14. Which one of the following minerals is contained in the monazite sand ? (1)
A. Oil B. Uranium
C. Thorium D. Coal
14. मोनाजाइट रेत में निम्नलिखित में से कौन सा खनिज पाया जाता है?
A. तेल B. यूरेनियम
C. थोरियम D. कोयला
15. Which one of the following is not a centre of Automobile industry? (1)
A. Chennai B. Bengaluru
C. Jamshedpur D. Coimbatore
15. निम्नलिखित में से कौन सा ऑटोमोबाइल उद्योग का केंद्र नहीं है?
A. चेन्नई B. बेंगलुरु
C. जमशेदपुर D. कोयंबटूर
16. A. What is Bamboo Drip Irrigation? Mention any two features of it. (2)
16. A. बांस ड्रिप सिंचाई क्या है? इसकी कोई दो विशेषताएँ बताइए।

OR

- 16 B. Mention any two reasons of water scarcity.
16 B. जल की कमी के कोई दो कारण बताइए।
- 17A. Explain any three physical factors and two human factors for the location of the industry. (5)
17A. उद्योग के स्थान के लिए किन्हीं तीन भौतिक कारकों और दो मानवीय कारकों की व्याख्या कीजिए। (5)

OR

- 17B. "Agriculture and industry move hand in hand " justify this statement with suitable examples. (5)

17B "कृषि और उद्योग साथ-साथ चलते हैं" इस कथन को उपयुक्त उदाहरणों से प्रमाणित कीजिए। (5)

18. Read the given text and answer the following questions: (4)

Production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing. Paper is manufactured from wood, sugar from sugarcane, iron and steel from iron ore and aluminium from bauxite. Some types of clothes are manufactured from yarn which itself is an industrial product. People employed in the secondary activities manufacture the primary materials into finished goods. The workers employed in steel factories, car, breweries, textile industries, bakeries etc. fall into this category. Some people are employed in providing services. The economic strength of a country is measured by the development of manufacturing industries. Manufacturing sector is considered the backbone of development in general and economic development. Manufacturing industries not only help in modernising agriculture, which forms the backbone of our economy, they also reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.

18A. What do you understand by tertiary sector? (1)

18B. What is the significance of secondary sector? (1)

18C. What would happen to the economic prosperity of a country if there were no manufacturing industries located in it? (2)

18. दिए गए पाठ को पढ़ें और निम्नलिखित प्रश्नों के उत्तर दें: (4)

कच्चे माल से अधिक मूल्यवान उत्पादों में प्रसंस्करण के बाद बड़ी मात्रा में वस्तुओं का उत्पादन विनिर्माण कहलाता है। कागज़ लकड़ी से, चीनी गन्ने से, लोहा और इस्पात लौह अयस्क से और एल्युमीनियम बॉक्साइट से बनाया जाता है। कुछ प्रकार के कपड़े सूत से बनाए जाते हैं जो स्वयं एक औद्योगिक उत्पाद है। द्वितीयक गतिविधियों में कार्यरत लोग प्राथमिक सामग्रियों से तैयार माल बनाते हैं। इस्पात कारखानों, कार, शराब की भट्टियों, कपड़ा उद्योगों, बेकरी आदि में कार्यरत श्रमिक इसी श्रेणी में आते हैं। कुछ लोग सेवाएँ प्रदान करने में कार्यरत हैं। किसी देश की आर्थिक मजबूती विनिर्माण उद्योगों के विकास से मापी जाती है। विनिर्माण क्षेत्र को सामान्य रूप से विकास और

आर्थिक विकास की रीढ़ माना जाता है। विनिर्माण उद्योग न केवल कृषि के आधुनिकीकरण में मदद करते हैं, जो हमारी अर्थव्यवस्था की रीढ़ है, बल्कि वे द्वितीयक और तृतीयक क्षेत्रों में लोगों को रोजगार प्रदान करके कृषि आय पर उनकी भारी निर्भरता को भी कम करते हैं।

18A. तृतीयक क्षेत्र से आप क्या समझते हैं? (1)

18B. द्वितीयक क्षेत्र का क्या महत्व है? (1)

18C. यदि किसी देश में विनिर्माण उद्योग न हों तो उस देश की आर्थिक समृद्धि पर क्या प्रभाव पड़ेगा? (2)

Map Skill Question (3 marks)

19. On the same outline map of India locate and label the following with suitable symbols: (1)

I. (p) Salem Iron and Steel Plant

OR

(q) Noida – Software Technology Park

II. Any two of the following: (1*2=2)

I. A major sea port in Goa

II. Indira Gandhi International Airport

III. Rajiv Gandhi International Airport

मानचित्र कौशल प्रश्न (3 अंक)

19. भारत के उसी रेखा मानचित्र पर निम्नलिखित को उपयुक्त प्रतीकों से चिह्नित कीजिए और चिह्नित कीजिए: (1)

I. (p) सेलम लौह एवं इस्पात संयंत्र

या

(q) नोएडा - सॉफ्टवेयर प्रौद्योगिकी पार्क

II. निम्नलिखित में से कोई दो: (1*2=2)

I. गोवा में एक प्रमुख बंदरगाह

II. इंदिरा गांधी अंतर्राष्ट्रीय हवाई अड्डा

III. राजीव गांधी अंतर्राष्ट्रीय हवाई अड्डा

Note: The following question is for Visually Impaired Candidates only in lieu of Q. No.

19

- i. Salem Iron and steel plant is located in which state of India?

Or

Noida Software technology park is located in which state of India

Answer any two of the following.

- ii. Name the major sea port of Goa.
iii. Name the state in which Indira Gandhi International Airport is located.
iv. Name the state in which Rajiv Gandhi International Airport

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

- i. सलेम लौह एवं इस्पात संयंत्र भारत के किस राज्य में स्थित है?

or

नोएडा सॉफ्टवेयर प्रौद्योगिकी पार्क भारत के किस राज्य में स्थित है?

निम्नलिखित में से किन्हीं दो के उत्तर दीजिए।

- ii. गोवा के प्रमुख बंदरगाह का नाम बताइए।
iii. उस राज्य का नाम बताइए जिसमें इंदिरा गांधी अंतर्राष्ट्रीय हवाई अड्डा स्थित है।
iv. उस राज्य का नाम बताइए जिसमें राजीव गांधी अंतर्राष्ट्रीय हवाई अड्डा स्थित है।

SECTION – C (Political Science – 20 Marks)

खंड – सी (राजनीति विज्ञान – 20 अंक)

20. Which of the following is correct about power sharing in Belgium? (1)
- A. Dutch-speaking people formed the majority and imposed their will.
B. Both Dutch and French-speaking communities had equal power in the central government.
C. Sinhala language was declared the sole official language.
D. Tamils were denied equal rights in education and jobs.

20. बेल्जियम में सत्ता के बँटवारे के बारे में निम्नलिखित में से कौन सा कथन सही है? (1)
- A. उच भाषी लोगों ने बहुमत बनाया और अपनी इच्छा थोपी।
B. उच और फ्रेंच भाषी दोनों समुदायों को केंद्र सरकार में समान शक्ति प्राप्त थी।
C. सिंहली भाषा को एकमात्र राजभाषा घोषित किया गया।
D. तमिलों को शिक्षा और नौकरियों में समान अधिकारों से वंचित किया गया।
21. Assertion (A): Federalism in India has two or more levels of government. (1)
Reason (R): Each level of government has powers guaranteed by the Constitution.
Choose the correct option: (1)
- A. Both A and R are true, and R is the correct explanation of A.
B. Both A and R are true, but R is not the correct explanation of A.
C. A is true but R is false.
D. A is false but R is true.
21. अभिकथन (A): भारत में संघवाद में सरकार के दो या अधिक स्तर होते हैं। (1)
कारण (R): सरकार के प्रत्येक स्तर को संविधान द्वारा गारंटीकृत शक्तियाँ प्राप्त हैं।
सही विकल्प चुनें: (1)
- A. A और R दोनों सत्य हैं, और R, A की सही व्याख्या है।
B. A और R दोनों सत्य हैं, लेकिन R, A की सही व्याख्या नहीं है।
C. A सत्य है लेकिन R असत्य है।
D. A असत्य है लेकिन R सत्य है।
22. What do you mean by "The Equal Remuneration Act"? (1)
- (a) It provides that more and more wages should be paid to equal work.
(b) It provides that less wages should be paid to equal work.
(c) It provides that equal wages should be paid to equal work.
(d) It provides equal work for all the workers in urban areas.

22. "समान पारिश्रमिक अधिनियम" से आप क्या समझते हैं? (1)
- (a) यह प्रावधान करता है कि समान कार्य के लिए अधिक से अधिक मजदूरी दी जानी चाहिए।
 (b) यह प्रावधान करता है कि समान कार्य के लिए कम मजदूरी दी जानी चाहिए।
 (c) यह प्रावधान करता है कि समान कार्य के लिए समान मजदूरी दी जानी चाहिए।
 (d) यह शहरी क्षेत्रों में सभी श्रमिकों के लिए समान कार्य प्रदान करता है।
23. Statement I Democracy is better because it Promotes equality among citizens
 Statement II Democracy is better because it enhances the dignity of the individual
 Statement III Democracy is better because it gives employment to all. (1)
- a. Only Statement I is correct b. Only Statement II is Correct
 c. Statements I & II are correct d. All Statements I II and III are correct
23. कथन I लोकतंत्र बेहतर है क्योंकि यह नागरिकों के बीच समानता को बढ़ावा देता है।
 कथन II लोकतंत्र बेहतर है क्योंकि यह व्यक्ति की गरिमा को बढ़ाता है।
 कथन III लोकतंत्र बेहतर है क्योंकि यह सभी को रोजगार देता है। (1)
- a. केवल कथन I सही है। b. केवल कथन II सही है।
 c. कथन I और II सही हैं। d. सभी कथन I, II और III सही हैं।
- 24A. How is social diversity accommodated in Democracy? Explain with examples. (2)
- 24A. लोकतंत्र में सामाजिक विविधता को कैसे समायोजित किया जाता है? उदाहरणों सहित व्याख्या कीजिए। (2)

OR

- 24B. What is the meaning of majority rule in democracy? (2)
- 24B. लोकतंत्र में बहुमत के शासन का क्या अर्थ है? (2)
- 25A. Mention two merits of power-sharing in a democracy. (2)
- 25A. लोकतंत्र में सत्ता-बंटवारे के दो गुण बताइए। (2)
- 26 How does federalism ensure unity in diversity in India? Explain with three points. (3)
26. संघवाद भारत में विविधता में एकता कैसे सुनिश्चित करता है? तीन बिंदुओं सहित व्याख्या कीजिए। (3)
- 27A. Analyse five challenges faced by political parties in India. (5)

27A. भारत में राजनीतिक दलों के सामने आने वाली पाँच चुनौतियों का विश्लेषण कीजिए। (5)

OR

27B. Describe the role of Political parties in Indian Democracy. (5)

27B. भारतीय लोकतंत्र में राजनीतिक दलों की भूमिका का वर्णन कीजिए। (5)

28. Read the given text and answer the following questions: (4)

It used to say that religion can never be separated from politics. What he meant by religion was not any particular religion like Hinduism or Islam but moral values that inform all religions. He believed that politics must be guided by ethics drawn from religion. Human rights groups in our country have argued that most of the victims of communal riots in our country are people from religious minorities. They have demanded that the government take special steps to protect religious minorities. Women's movement has argued that FAMILY LAWS of all religions discriminate against women. So they have demanded that government should change these laws to make them more equitable.

a) What is the main responsibility Gandhi of women according to societal norms? 1

b) What is the extreme form of communalism and its belief about people belonging to different religions? 2

c) What is the significance of a secular state in a democratic society? 1

28. दिए गए पाठ को पढ़ें और निम्नलिखित प्रश्नों के उत्तर दें: (4)

यह कहा जाता था कि धर्म को राजनीति से कभी अलग नहीं किया जा सकता। धर्म से उनका तात्पर्य हिंदू धर्म या इस्लाम जैसे किसी विशेष धर्म से नहीं था, बल्कि नैतिक मूल्यों से था जो सभी धर्मों को प्रभावित करते हैं। उनका मानना था कि राजनीति को धर्म से प्राप्त नैतिकता द्वारा निर्देशित होना चाहिए। हमारे देश में मानवाधिकार समूहों का तर्क है कि हमारे देश में सांप्रदायिक दंगों के अधिकांश पीड़ित धार्मिक अल्पसंख्यक समुदाय के लोग हैं। उन्होंने मांग की है कि सरकार धार्मिक अल्पसंख्यकों की सुरक्षा के लिए विशेष कदम उठाए। महिला आंदोलन का तर्क है कि सभी धर्मों के पारिवारिक कानून महिलाओं के साथ भेदभाव करते हैं। इसलिए उन्होंने मांग की है कि सरकार को इन कानूनों को और अधिक न्यायसंगत बनाने के लिए इनमें बदलाव करना चाहिए।

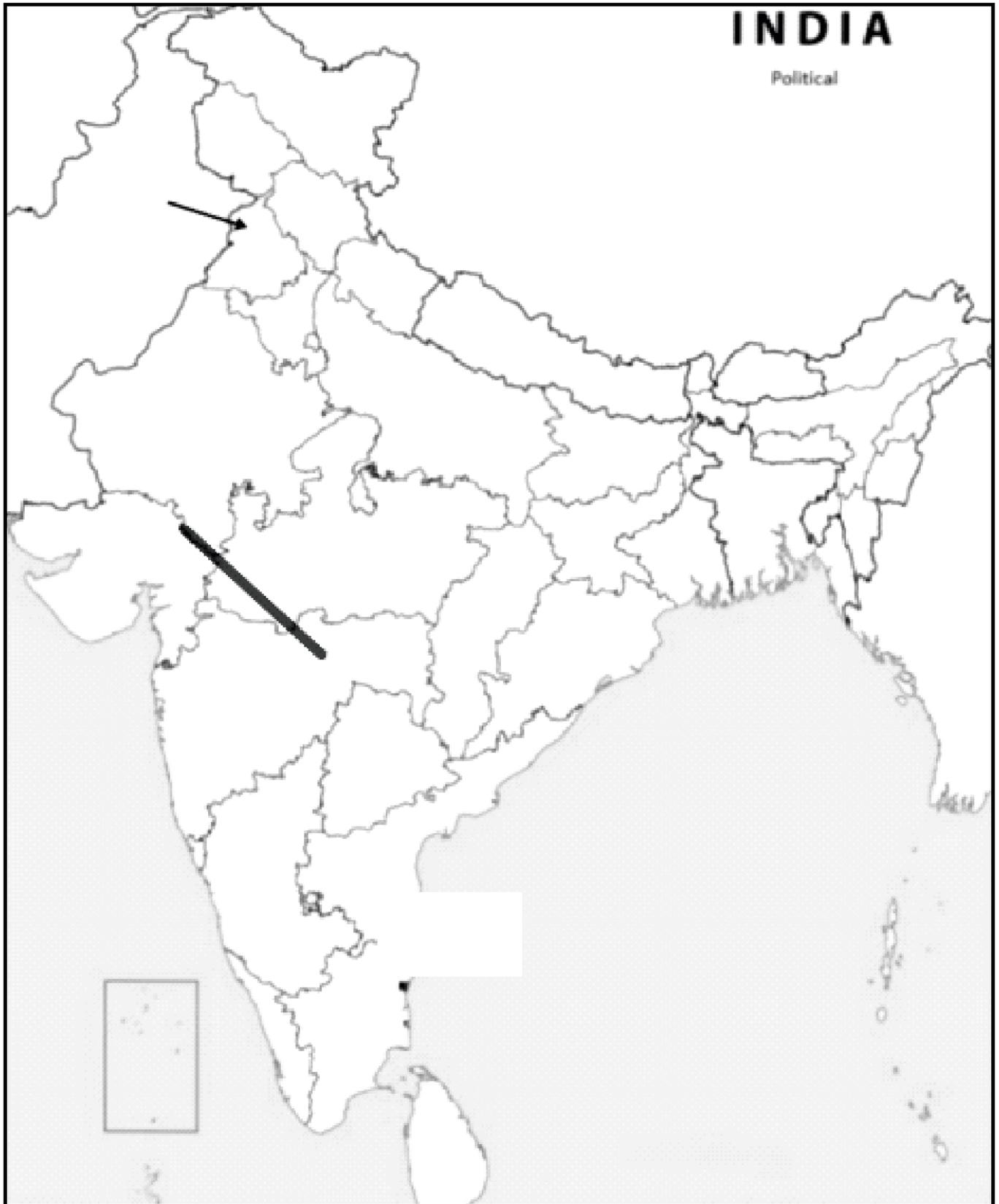
- C. देश के भीतर के उपभोक्ताओं को विदेशी प्रतिस्पर्धा से बचाया जा सके।
D. उपरोक्त सभी।

35. Suggest three measures to improve conditions of workers in the unorganised sector. (3)
35. असंगठित क्षेत्र के श्रमिकों की स्थिति में सुधार के लिए तीन उपाय सुझाएँ।
36. Explain three advantages of globalisation for producers in India. (3)
36. भारत में उत्पादकों के लिए वैश्वीकरण के तीन लाभ बताएँ।
37. Why are public facilities important for the development of a country? Explain with three points. (3)
37. किसी देश के विकास के लिए सार्वजनिक सुविधाएँ क्यों महत्वपूर्ण हैं? तीन बिंदुओं के साथ समझाएँ।
38A. Difference between formal & informal sources of loan. (5)
38A. ऋण के औपचारिक और अनौपचारिक स्रोतों के बीच अंतर।

OR

- 38B. How is the concept of Self Help group important for poor people. (5)
38B. स्वयं सहायता समूह की अवधारणा गरीब लोगों के लिए कैसे महत्वपूर्ण है।

* *Map for Q. No. 19.*



II Pre-Board Examination, 2025–26

Sub : Science

Time : 3.00 Hrs.]

Class – X

[M. M. : 80

General 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

1. Which is the correct sequence of air passage during inhalation?
 - (a) Nostrils → larynx → pharynx → trachea → lungs
 - (b) Nasal passage → trachea → pharynx → larynx → alveoli
 - (c) larynx → nostrils → pharynx → lungs
 - (d) Nostrils → pharynx → larynx → trachea → alveoli
2. A person's kidneys are damaged. Which life process is most immediately affected, and what procedure might be necessary to sustain their life?
 - (a) Respiration; Ventilation
 - (b) Digestion; Gastric bypass
 - (c) Excretion; Dialysis
 - (d) Circulation; Transfusion
3. Which of the following statements are true about the brain ?*
 - (i) The main thinking part of brain is hind brain.
 - (ii) Centres of hearing, smell, memory, sight etc. are located in fore brain.
 - (iii) Involuntary actions like salivation, vomiting, blood pressure are controlled by the medulla in the hind brain.
 - (iv) Cerebellum does not control posture and balance of the body.
 - (a) (i) and (ii)
 - (b) (i), (ii) and (iii)
 - (c) (ii) and (iii)
 - (d) (iii) and (iv)

- C) Throwing all waste (food peels, paper, plastic bags) into a single large bin for easy collection.
- D) Using disposable plastic plates at a party to avoid washing dishes.

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. Assertion (A): A geneticist crossed a pea plant having violet flowers with the pea plant with white flowers, he got all white flowers in first generation.
Reason (R): White colour gene is not passed on to the next generation.
9. Assertion (A): Plastic is a major cause of land pollution.
Reason (R): Plastics are non-biodegradable and remain in the environment for long periods.
10. There is a person who is suffering from pneumonia. He/she has fluid filled in his/her Lungs.
- a. What will be the impact of above on exchange of gases in the lungs?
 - b. What will be its impact on the working of the body?

OR

What type of respiration takes place in human muscles during vigorous exercise and Why ?

(2)

11. Explain why:
- (a) The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms.
 - (b) Plants do not release carbon dioxide gas during the daytime but do so at night. (1+1)

12. A gas 'X' which is a deadly poison is found at the higher levels of the atmosphere and performs an essential function. Name the gas and write the function performed by this gas in the atmosphere. Which chemical is linked to the decrease in the level of this gas? Name an appliance in which this harmful chemical is used ? (½*4)

13. Draw the structure of a neuron and explain its function. (2+1)

14. How is the sex of the child determined in human beings ? Draw a diagrammatic sketch showing the sex determination in human beings.

15. Read the following information and answer the questions that follow:

While doing an experiment, students took two similar plants and placed them in a dark room for three days. Then one of the plants was kept in sunlight for about 6 hours. After that, they tested one leaf from each plant using iodine solution. One turned blue black, the other did not.

Attempt either subpart (a) or (b).

a. Considering the given data, what do you think was the aim of the experiment? Justify your answer.

OR

b. Write two essential steps to be taken while doing iodine test on the leaves.

b. Why did one leaf fail to turn blue black?

b. Why are the plants kept in the dark room?

16. Attempt either option A or B.

A: (a) Write any two differences between the transport of materials in xylem and phloem.

(b) Draw the excretory system in human beings and label the parts which perform the following functions:

(i) forms urine

(ii) is a long tube which collects urine from kidney

(iii) stores urine until it is passed out.

OR

- B: (a) Draw a diagram of human digestive system and label the part/s:
- (i) which secretes amylase
 - (ii) which produces bile juice.
 - (iii) where the process of digestion gets completed.
- (b) What are the methods used by plants to get rid of excretory products? (any two)

SECTION – B

17. A student mixes an aqueous solution of sodium sulphate with an aqueous solution of barium chloride. A white precipitate is formed. What type of reaction is this, and what is the white precipitate? (1)
- A. Combination reaction; barium chloride
 - B. Decomposition reaction; sodium chloride
 - C. Displacement reaction; sodium sulphate
 - D. Double displacement reaction; barium sulphate
18. Which of the following methods would be ineffective in preventing rancidity in food items? (1)
- A. Storing food at low temperature
 - B. Storing food in an airy room
 - C. Adding antioxidants
 - D. Storing food in airtight containers.
19. A doctor advises a patient with acidity to take an antacid, which property of antacid is being used here? (1)
- A. Its bitter taste
 - B. its acidic nature
 - C. its basic (alkaline) nature
 - D. its ability to produce gas
20. A substance 'A' does not dissociate completely into its ions in aqueous solutions. It is sour in taste and reacts with baking soda. Identify substance A. (1)
- A. Weak base
 - B. Strong base
 - C. Strong acid
 - D. Weak acid

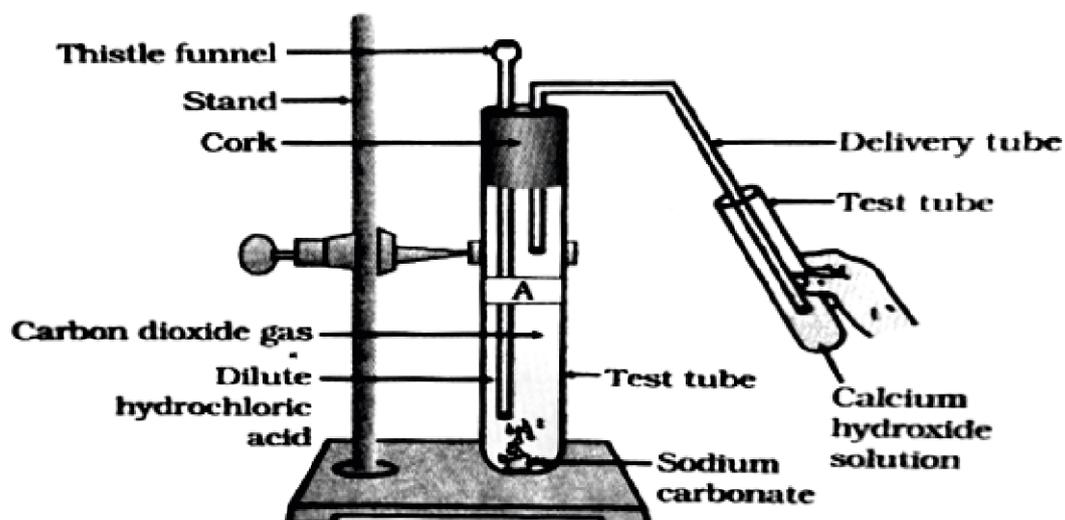
- (i) Lead nitrate powder is heated in a boiling tube.
- (ii) Electric current is passed through water mixed with a few drops of dilute sulphuric acid.
- (iii) Copper powder is heated in air.

OR

B: Translate the following statements into chemical equations (with state symbols) and then balance them :

- i. Hydrogen gas reacts with nitrogen to form ammonia.
- ii. Hydrogen sulphide gas burns in air to give water and Sulphur dioxide. (3)

27. Study the figure given below and answer the following questions:



- a. Write the chemical equation for the reaction taking place in the larger test tube.
- b. Write one observation related to the chemical reaction taking place in the smaller test tube.
- c. What can you say about the nature of sodium carbonate from this reaction? Justify your answer. (3)

28. Samples of 4 metals A,B,C and D were taken and added to the following solution one by one.

The results obtained have been tabulated as follows.

Metal	Iron (II) Sulphate	Copper (II) Sulphate	Zinc Sulphate	Silver Nitrate
A	No reaction	Displacement		
B	Displacement		No reaction	
C	No reaction	No reaction	No reaction	Displacement
D	No reaction	No reaction	No reaction	No reaction

Use the table to answer the following questions about metal A,B,C and D.

- Which is the most reactive metal?
- Which is the least reactive metal?
- What would you observe if B is added to a solution of copper sulphate? Justify your answer. Justify your answer.

OR

- Arrange the metals A, B, C and D in the order of decreasing reactivity. (4)

29. A carbon compound 'A' is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B'.

- Identify the compound 'A' and write its structure.
- Write the chemical equation for the reaction of 'A' with ethanol to form compound 'B'. State the role of presence of an acid in the reaction.
- How can we get compound 'A' back from 'B'?
- How can 'A' be obtained from ethanol?
- Name the gas produced when compound 'A' reacts with washing soda.

OR

- Name a commercially important carbon compound having functional group $---OH$ and write its molecular formula.
- Write chemical equation to show its reaction with
 - Sodium metal
 - Excess conc. Sulphuric acid

- (c) Ethanoic acid in the presence of an acid catalyst
- (d) Acidified potassium dichromate

Also write the name of the product formed in each case.

(5)

SECTION - C

30. The basic cause of refractive error that makes far-away objects look blurry is
- (a) decrease in the focal length of eye-lens.
 - (b) increase in the focal length of eye-lens.
 - (c) decreasing curvature of eye-lens.
 - (d) weakening of ciliary muscles.
31. In the formation of rainbow, the role of water droplet presents in water fountains is to act as a :
- (a) glass slab
 - (b) convex lens
 - (c) concave lens
 - (d) prism

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

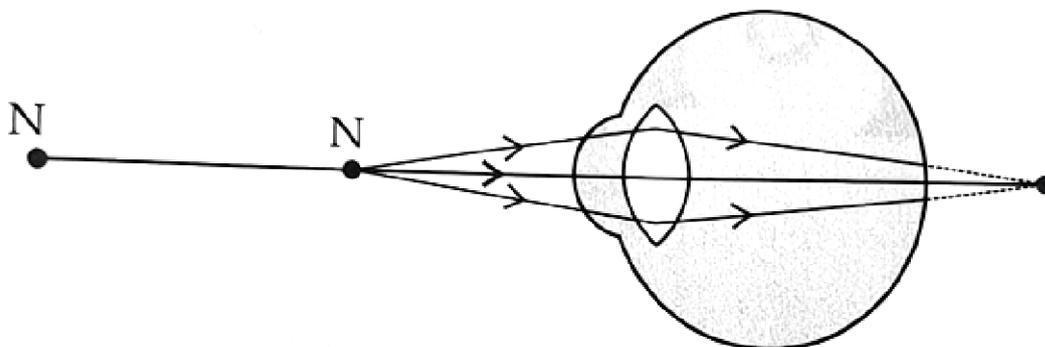
Answer these questions by selecting the appropriate option given below:

- 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.
32. Assertion (A): A concave mirror always forms a real and inverted image.
Reason (R) : Real images are formed when reflected rays actually meet.
33. A real image $\frac{2}{3}$ rd of the size of the object is formed by a convex lens when the object is at a distance of 12 cm from it. Find the focal length of the lens.
34. The resistance of wire of 0.01 cm radius is 10 W. If the resistivity of the wire is 50×10^{-8} Wm, find the length of this wire.

OR

List the factors on which the resistance of a conductor in the shape of a wire depends.

35. A ray Diagram of the human eye is given below



- (i) Which defect of vision is represented in this case?
- (ii) What could be the two causes of this defect?
- (iii) With the help of a diagram show how this defect can be corrected using a suitable lens.

36. Two resistors $3\ \Omega$ and unknown resistor are connected in a series across a $12\ \text{V}$ battery. If the voltage drop across the unknown resistor is $6\ \text{V}$, find

- (a) potential across $3\ \Omega$ resistance
- (b) the current through unknown resistor 'R'
- (c) equivalent resistance of the circuit.

37. A current carrying conductor is placed in a magnetic field. Now answer the following.

- (i) List the factors on which the magnitude of force experienced by conductor depends.
- (ii) State the rule which helps, in finding the direction of motion of conductor.
- (iii) If initially this force was acting from right to left, how will the direction of force change if the:
 - (a) direction of magnetic field is reversed?
 - (b) direction of current is reversed?

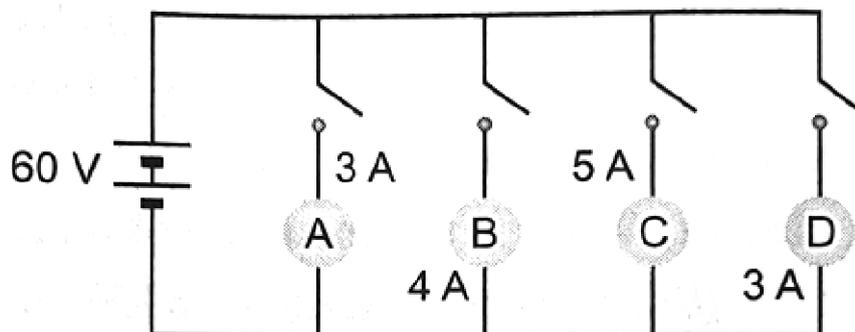
Q38 A compound microscope is an instrument which consists of two lenses L1 and L2. The lens L1 called objective, forms a real, inverted and magnified image of the given object. This serves

as the object for the second lens L2 ; the eye piece. The eye piece functions like a simple microscope or magnifier. It produces the final image, which is inverted with respect to the original object, enlarged and virtual.

38. (a). What is the value and sign of magnification (according to the new Cartesian sign convention) of the image formed by L1?
- (A) Value = Less than 1 and Sign = Positive
 (B) Value = More than 1 and Sign = Positive
 (C) Value = Less than 1 and Sign = Negative
 (D) Value = More than 1 and Sign = Negative
38. (b) What is the value and sign of magnification (according to the new Cartesian sign convention) of the image formed by L2 ?
- (A) Value = Less than 1 and Sign = Positive
 (B) Value = More than 1 and Sign = Positive
 (C) Value = Less than 1 and Sign = Negative
 (D) Value = More than 1 and Sign = Negative
38. (c) If power of the eye piece (L2) is 5 diopters and it forms an image at a distance of 80 cm from its optical centre, at what distance should the object be?

OR

38. (c) What types of lenses must be L1 and L2? Justify your answer.
39. In the circuit given below A, B, C and D are four lamps connected with a battery of 60 V.



Analyse the circuit to answer the following questions : (1+2+1+1)

- (i) What kind of combination are the lamps arranged (in series or parallel)?
- (ii) Explain with reference to your above answer, what are the advantages (any two) of this combination of lamps?
- (iii) Explain with proper calculations which lamp glows the brightest.
- (iv) Find the total resistance of the circuit.

OR

- i. Consider a conductor of resistance 'R', Length 'L', thickness 'd' and resistivity ' ρ '. Now this conductor is cut into four equal parts. What will be the new resistivity of each of these parts? Why?
- ii. Find the resistance if all of these parts are connected in :
 - (a) Parallel
 - (b) Series
- iii. Out of these combinations of resistors mentioned above in the previous part, for a given voltage which combination will consume more power and why?

द्वितीय प्री-बोर्ड परीक्षा, 2025-26

विषय - हिन्दी (पाठ्यक्रम-अ)

समय : 3.00 घण्टे]

कक्षा : दसवीं

| पूर्णांक: : 80

सामान्य निर्देश :-

निम्नलिखित निर्देशों को सावधानी पूर्वक पढ़िए और उनका सख्ती से अनुपालन कीजिए :

- इस प्रश्न पत्र में कुल चार खंड हैं- क,ख,ग,घ ।
- इस प्रश्न पत्र में कुल 15 प्रश्न हैं । सभी प्रश्न अनिवार्य है ।
- प्रश्न पत्र में आंतरिक विकल्प दिए गए हैं ।
- प्रश्नों के उत्तर दिए गए निर्देशों का पालन करते हुए लिखिए ।

खंड- क (अपठित बोध)

14

- 1 निम्नलिखित अपठित गद्यांश पर आधारित बहुविकल्पीय / वस्तुपरकप्रश्नों के उत्तर सर्वाधिक उपयुक्त विकल्प चुन कर लिखिए ।

एक महान शक्ति सोई हुई पड़ी है । दुनिया की आधी से बड़ी ताकत उनके पास है । आधी से बड़ी ताकत इसलिए कि स्त्रियां आधी तो हैं ही दुनिया में , आधी बड़ी इसलिए कि बच्चे – बच्चियाँ उनकी छाया में पलते हैं और वे जैसा चाहें उन बच्चे और बच्चियों को परिवर्तित कर सकती हैं । पुरुषों के हाथ में कितनी ही ताकत हो , लेकिन पुरुष एक दिन स्त्री की गोद में होता है वहीं से वह अपनी यात्रा शुरू करता है ।

एक बार स्त्री की पूरी शक्ति जाग्रत हो जाये और वे निर्णय कर लें कि किस प्रेम की दुनिया को निर्मित करेंगी जहाँ युद्ध नहीं होंगे , जहाँ हिंसा नहीं होगी , जहाँ राजनीति नहीं होगी, जहाँ राजनीतिज्ञ नहीं होंगे, जहाँ जीवन में कोई बीमारियाँ नहीं होंगी ।

जहाँ भी प्रेम है, जहाँ भी करुणा है, जहाँ दया है वहां स्त्री मौजूद है । स्त्री के पास आधी से भी ज्यादा बड़ी ताकत है और वह पांच हजार वर्षों से बिल्कुल सोई पड़ी है । नारी की शक्ति का उपयोग नहीं हो सका है । भविष्य में वह उपयोग हो सकता है । उपयोग होने का एक सूत्र यही है कि स्त्री यह तय कर ले कि उन्हें पुरुषों जैसा नहीं हो जाना है ।

7

(i) स्त्रियों की शक्ति को सुप्त क्यों कहा गया है

- (क) वे अपने मूल स्वभाव को जान कर उस पर चल नहीं सकी
- (ख) वे स्वयं को पुरुष से हीन समझती हैं ।
- (ग) वे अपने मूल स्वभाव को जान नहीं सकी ।
- (घ) वे अपने मूल स्वभाव को जान नहीं सकी ।

1

- (ii) स्त्रियों में पुरुषों को बदलने की ताकत है, क्योंकि –
 (क) स्त्रियों में सृजन की ताकत है
 (ख) स्त्रियाँ अधिक शक्तिशाली हैं
 (ग) पुरुष स्त्रियों के बिना नहीं रह सकता
 (घ) सभी पुरुष स्त्रियों की गोद में पलते –बढ़ते हैं।

विकल्प :

- (I) (क) सही है
 (II) (ग) सही है
 (III) (क) और (ख) सही है
 (IV) (क) और (घ) सही है 1
- (iii) कथन और कारण को पढ़कर उपयुक्त विकल्प चुनकर लिखिए-
 कथन - नारी शक्ति हजारों वर्षों से सोई पड़ी थी
 कारण - क्योंकि वे पुरुषों पर निर्भर थी अपने निर्णय स्वयं नहीं लेती थी।
 (क) कथन गलत है किंतु कारण सही है
 (ख) कथन और कारण दोनों ही गलत है
 (ग) कथन सही है और कारण कथन की सही व्याख्या है
 (घ) कथन सही है किंतु कारण कथन की सही व्याख्या नहीं है 1
- (iv) यदि एक बार स्त्री की शक्ति जागृत हो जाए तो वह क्या-क्या कर सकती है? 2
- (v) प्रस्तुत गद्यांश का उपयुक्त शीर्षक बताइए। अपने उत्तर की पुष्टि भी कीजिए? 2
2. निम्नलिखित अपठित पद्यांश पर आधारित बहुविकल्पीय / वस्तुपरकप्रश्नों के उत्तर सर्वाधिक उपयुक्त विकल्प चुन कर लिखिए।

छोड़ बाँहों की विभा सँभालो
 चट्टानों की छाती से दूध निकालो।
 है रुकी जहाँ भी धार, शिलाएँ तोड़ो,
 पियूष चंद्रमाओं को पकड़ निचोड़ो।
 चढ़ तुंग शैल-शिखरों पर सोम पियो रे !
 योगियों नहीं, विजयी के सदृश जियो रे !
 छोड़ो मत अपनी आन, सीस कट जाए
 मत झुको अनय पर, भले व्योम फट जाए।

दो बार नहीं यमराज कंठ धरता है
मरता है जो एक ही बार मरता है।
नत हुए बिना जो अशनि घात सहती है
स्वाधीन जगत में वही जाति रहती है।

7

- (i) कवि किसके समान जीने को कहता है ?
- | | | |
|-------------------------|-------------------|---|
| (क) योगियों के | (ख) भोगियों के | |
| (ग) विजयी व्यक्तियों के | (घ) राजाओं की तरह | 1 |
- (ii) 'भले व्योम फट जाए' का अर्थ है -
- | | | |
|----------------------------|-------------------------------------|---|
| (क) कितनी ही मुसीबत आ जाए। | (ख) आसमान दो टुकड़ों में बंट जाए। | |
| (ग) मूसलाधार वर्षा हो जाए। | (घ) आसमान से फूलों की वर्षा हो जाए। | 1 |
- (iii) कथन और कारण पर विचार करते हुए उपयुक्त विकल्प चुनकर लिखिए-
- कथन- शीश झुकाने से अच्छा है, भले ही शीश कट जाए।
कारण - क्योंकि देश का स्वाभिमान और स्वतंत्रता सर्वोपरि है।
- | | |
|--|---|
| क) कथन गलत है और कारण सही है। | |
| ख) कथन और कारण दोनों ही गलत हैं। | |
| ग) कथन सही है और कारण, कथन की सही व्याख्या है। | |
| घ) कथन और कारण दोनों ही सही हैं लेकिन कारण कथन की सही व्याख्या नहीं करता है। | 1 |
- (iv) दो बार नहीं यमराज कंठ धरता है, मरता है जो एक ही बार मरता है।
नत हुए बिना जो अशनि घात सहती है, स्वाधीन जगत में वही जाति रहती है।
" पंक्ति का भावार्थ लिखिए।
- काव्यांश के माध्यम से कवि क्या सन्देश देना चाहता है ?

2

2

खंड 'ख' (व्यावहारिक व्याकरण)

- 3 निर्देशानुसार पाँच प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए- 4x1=4
- | | |
|--|--|
| (i) मोहन शास्त्रीजी के यहां गया है, क्योंकि उसे अंग्रेजी पढ़नी है। (सरल वाक्य में बदलिए) | |
| (ii) रात को आकाश में तारों का मेला लग गया। (संयुक्त वाक्य में बदलिए) | |
| (iii) ईमानदार व्यक्ति अच्छे लगते हैं। (मिश्र वाक्य में बदलिए) | |
| (iv) जो देश के लिए मरता है वही सच्चा देशभक्त होता है। (सरल वाक्य में बदलिए) | |
| (v) आज इस बात की आवश्यकता है कि जल संकट से बचने के लिए जल बचाना होगा। (मिश्र वाक्य का उपभेद बताइए) | |

- 4 निर्देशानुसार पाँच प्रश्नों में से किन्हीं चार प्रश्नों के वाच्य परिवर्तन कीजिए। 4x1=4
- (i) सैनिक देश की रक्षा करते हैं। (कर्मवाच्य में बदलिए)
 - (ii) बच्चा बहुत बीमार है, उसे सोया नहीं जाता। (वाच्य का भेद बताइए)
 - (iii) दादाजी प्रतिदिन पार्क में टहलते हैं। (भाववाच्य में बदलिए)
 - (iv) पतोहु द्वारा आग दी गई। (कर्तृवाच्य में बदलिए)
 - (v) जिस पद में क्रिया का केंद्र बिंदु कर्ता होता है, वह कौन सा वाच्य कहलाता है?
- 5 निर्देशानुसार 'पद परिचय' पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के रेखांकित पदों का पद परिचय दीजिए। 4x1=4
- (i) भोलानाथ बाकी सभी लड़कों के साथ खेलने लगा।
 - (ii) जल्दी, चलो कहीं ट्रेन न छूट जाए।
 - (iii) बगीचे में छोटे मोटे फूल लगे हुए हैं।
 - (iv) मैं कल आंख के डॉक्टर के पास जाऊंगा।
 - (v) गाड़ी में अभी भी थोड़ा तेल है।
- 6 निर्देशानुसार अलंकार पर आधारित पाँच प्रश्नों में से किन्हीं चार प्रश्नों के अलंकार पहचान कर उत्तर दीजिए। 4x1=4
- (i) सांझ की बेला उतर आकाश से, पास आके मुझ से बतलाने लगी।
 - (ii) जहां गुण की अत्यंत सामान्य के कारण उपमेय पर उपमान का आरोप किया जाए वहां कौन सा अलंकार होता है।
 - (iii) मानो भास्कर स्वर हो कविता के
 - (iv) तूने ऐसी लट बिखराई, सांझ जगत में हो गई।
 - (v) मखमल के झूले पड़े हाथी – सा टीला

खंड 'ग' (पाठ्य पुस्तक एवं पूरक पुस्तक)

30

- 7 पठित गद्यांश के आधार पर पूछे गए प्रश्नों के सही विकल्प लिखिए :
- पिता के ठीक विपरीत थी हमारी बेपट्टी-लिखी माँ। धरती से कुछ ज़्यादा ही धैर्य और सहनशक्ति थी शायद उनमें। पिता जी की हर ज्यादाती को अपना प्राप्य और बच्चों की हर उचित अनुचित फ़रमाइश और ज़िद को अपना फ़र्ज समझकर बड़े सहज भाव से स्वीकार करती थीं वे। उन्होंने ज़िन्दगी भर अपने लिए कुछ माँगा नहीं, चाहा नहीं... केवल दिया ही दिया। हम भाई-बहिनों का सारा लगाव (शायद सहानुभूति से उपजा) माँ के साथ था लेकिन निहायत असहाय मजबूरी में लिपटा उनका यह त्याग कभी मेरा आदर्श नहीं बन सका... न उनका त्याग, न उनकी सहिष्णुता। खैर, जो भी हो, अब यह पैतृक-पुराण यहीं समाप्त कर अपने पर लौटती हूँ। 5x1=5

- (i) मां की तुलना धरती से क्यों की है?
 (क) क्योंकि वह बहुत विशाल है
 (ख) क्योंकि वो धरती से धैर्यवान और सहनशील है।
 (ग) उनका नाम धरती पर ही रखा गया है
 (घ) मां बहुत परिश्रमी थी।
- (ii) लेखिका के लिए अपनी मां आदर्श क्यों न बन सकी?
 (क) अपमानित होने के कारण
 (ख) अनपढ़ होने के कारण
 (ग) अपनी अत्यधिक सरलता के कारण
 (घ) अपनी बात किसी के सामने ना रख पाना और त्याग करते रहने के कारण।
- (iii) गद्यांश के आधार पर पिता का स्वभाव कैसा था?
 (क) विनम्र (ख) शक्की
 (ग) अहंकारी (घ) रौबदार
- (iv) मां अपनी जिंदगी का पर्याय किसे मानने लगी थी
 (क) पिता की ज़्यादती
 (ख) बच्चों की हर उचित अनुचित फ़रमाइश
 (ग) जीवन में हर प्रकार का त्याग
 (घ) उपरोक्त सभी विकल्प सही है।
- (v) जिसका कोई सहारा न हो
 (क) निसहाय (ख) सहनशील
 (ग) निहायत (घ) सहिष्णुता

8 निम्नलिखित गद्य पाठों के आधार पर चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए।

3x2=6

- (i) पानवाला चश्मेवाले को लंगड़ा और पागल कहकर संबोधित करता है, परन्तु उसके हृदय में भी संवेदना है। इस कथन पर अपने विचार व्यक्त कीजिए।
- (ii) यदि लेखक ने खीरा खा लिया होता तो क्या नवाब साहब भी खीरा खा लेते? ' लखनवी अंदाज ' पथ के आधार पर तर्क सहित स्पष्ट कीजिए।
- (iii) बाल गोविंद भगत होकर भी सच्चे अर्थों में साधु थे उनके चरित्र पर प्रकाश डालते हुए अपने उत्तर तर्क सहित प्रस्तुत करें।

- (iv) एक कहानी यह भी पथ के आधार पर बताइए कि लेखिका के पिता ने रसोई को 'भटियारखाना' कहकर क्यों संबोधित किया है?

9 निम्नलिखित पठित पद्यांश पर आधारित प्रश्नों के उपयुक्त विकल्प चुनकर लिखिए :

बादल, गरजो ! -
 घेर घेर घोर गगन, धाराधर ओ!
 ललित ललित, काले घुँघराले,
 बाल कल्पना के-से पाले,
 विद्वत्-छबि उर में, कवि, नवजीवन वाले !
 वज्र छिपा, नूतन कविता
 फिर भर दो-
 बादल, गरजो!

5x1=5

- (i) यह किस प्रकार की कविता है?
 (क) आह्वान कविता (ख) ईश्वर भक्ति कविता
 (ग) देशभक्ति कविता (घ) उपरोक्त में से कोई नहीं
- (ii) इस कविता के माध्यम से कवि किसे प्रेरित कर रहा है?
 (क) सामंत वर्ग (ख) शोषित वर्ग
 (ग) माध्यम वर्ग (घ) अन्य वर्ग
- (iii) कवि ने बादलों को क्या कहा है?
 (क) क्रांति का प्रतीक (ख) नवजीवन का प्रतीक
 (ग) प्यार दिखाने वाला (घ) विकल्प (क) और (ख) सही है
- (iv) कवि ने बादलों की बनावट की तुलना किससे की है?
 (क) बालक के बालों से (ख) बालक गालों से
 (ग) बालक के बाल मन से (घ) विकल्प (क) और (ग) से
- (v) कवि के अनुसार नूतन कविता कैसी होनी चाहिए?
 (क) शब्दाडंबरो से भरपूर
 (ख) केवल सामान्य विचारों के लिए
 (ग) नई उमंग और नए जोश को जगाने वाला
 (घ) भीषण दुख को व्यक्त करने वाला।

10. निम्नलिखित कविताओं के आधार पर चार प्रश्नों में से किन्हीं तीन प्रश्नों के उत्तर लगभग 25-30 शब्दों में लिखिए। 3x2=6
- (क) कृष्ण ने उद्धव को कौन सा संदेश देकर गोपियों के पास भेजा और कैसे उनकी विरहाग्नि में घी का काम किया?
- (ख) परशुराम जी का क्रोध अकारण नहीं था, क्रोध हमेशा नकारात्मक नहीं बल्कि सकारात्मक भी होता है। क्यों और कैसे? अपने उत्तर की सार्थकता स्पष्ट कीजिए।
- (ग) कवि जयशंकर प्रसाद अपनी आत्मकथा लिखने से क्यों बचना चाहते हैं तर्क सहित उत्तर दीजिए।
- (घ) नागार्जुन ने बच्चे की दंतुरित मुस्कान की तुलना किन-किन उदाहरणों से की है?
11. पूरक पाठ्य पुस्तक के पाठों पर आधारित निम्नलिखित तीन प्रश्नों से किन्हीं दो प्रश्नों के उत्तर लगभग 50-60 शब्दों में लिखिए। 2x4=8
- (क) गुरु जी द्वारा भोलानाथ और उसके साथियों की खूब खबर लेने की घटना से तत्कालीन शिक्षा – व्यवस्था पर क्या प्रभाव पड़ता है? अपने विचार व्यक्त करें।
- (ख) लेखिका को उम्मीद थी कि लायुंग में बर्फ देखने को मिल जाएगी लेकिन प्रदूषण के कारण स्रो फॉल कम हो गया और लेखिका को 'कटाओ' जाना पड़ा। प्रकृति के साथ हो रहे हैं खिलवाड़ का पर्यावरण पर क्या प्रभाव पड़ रहा है?
- (ग) मैं क्यों लिखता हूँ पाठ के आधार पर बताइए कि भीतरी विवशता क्या होती है और बाह्य दबाव रचनाकार और कलाकारों को कैसे प्रभावित करती है?

खंड – घ (रचनात्मक प्रश्न)

20

12. निम्नलिखित तीन विषयों में से किसी एक विषय पर लगभग 120 शब्दों में सारगर्भित अनुच्छेद लिखिए- 1x6=6
- (i) विपत्ति कसौटी जे कसे सोई सांचे मीत
संकेत बिंदु
- मित्र का महत्व
 - अच्छे मित्र की पहचान
 - मित्र के गुण
 - निष्कर्ष
- (ii) कृत्रिम बुद्धिमत्ता (AI): वरदान या अभिशाप
संकेत बिंदु
- कृत्रिम बुद्धिमत्ता क्या है, कैसे काम करती है?
 - वर्तमान में इसका प्रचार- प्रसार अधिक कैसे हुआ

- इसके लाभ और खतरे
 - हमारे जीवन पर प्रभाव
- (iii) बस्ते का बढ़ता बोझ
संकेत बिंदु
- बस्ते का बोझ क्यों बढ़ रहा है
 - इसके दुष्प्रभाव
 - कैसे ये बोझ कम हो

13 आप गुरुग्राम के निवासी हैं, आपके क्षेत्र में सड़क के किनारे लगने वाले दुकान अनधिकृत रूप से बढ़ाते जा रहे हैं, जिससे सड़कों पर भीड़भाड़ बढ़ रही है और परिवहन में दिक्कतों का सामना करना पड़ रहा है। इनकी रोकथाम के लिए जिलाधिकारी को प्रार्थना-पत्र लिखिए।

अथवा

नई शिक्षा नीति 2020 के तहत एन सी ई आर टी की नई पुस्तकों की विवेचना करते हुए पिता जी को पत्र लिखिए। 1x5=5

14 आप निकिता और निखिल हैं, आपने इसी वर्ष स्नातक (कला) की परीक्षा प्रथम श्रेणी में उत्तीर्ण की है, आपने डी टी पी का कोर्स भी किया है। अपनी शैक्षणिक योग्यता एवं रुचि का वर्णन करते हुए हिंदी की पुस्तकों के लिए प्रूफ – रीडर पद के लिए लगभग 80 शब्दों का स्ववृत्त तैयार कीजिए।

अथवा

आगरा पत्रिका में विज्ञापन छपा है, जिसमें जनसंख्या गणना के लिए बारहवीं पास युवक युवतियों के आवेदन मांगे गए हैं। आप इस पद के लिए आवेदन करने हेतु 80 शब्दों का 100 स्ववृत्त लेख प्रस्तुत कीजिए। 1x5=5

15 जल संरक्षण हेतु जागरूकता फैलाने के लिए जल मंत्रालय की ओर से जनहित में जारी एक आकर्षक विज्ञापन लगभग 40 शब्दों में तैयार कीजिए।

अथवा

आपके विद्यालय में युवा कौशल मेला का आयोजन किया जा रहा इस अवसर पर विद्यार्थियों द्वारा निर्मित हस्तकला की वस्तुओं की प्रदर्शनी के प्रचार हेतु लगभग 40 शब्दों में एक विज्ञापन तैयार कीजिए। 1x4=4

II Pre-Board Examination, 2025–26

Sub : English (Comm.)

Time : 3.00 Hrs.]

Class – X

[M. M. : 80

General Instructions:

Read the following instructions very carefully and strictly follow them:

(i) The question paper is divided into four sections- A, B, C and D.

Section A- Reading Skills 22 marks

Section B- Writing Skills 22 marks

Section C- Grammar 10 marks

Section D Literature Text book 26 marks

(ii) There are 10 questions in the question paper. All questions are compulsory.

(iii) Answers should be brief and to the point.

(iv) You may attempt any section at a time.

All questions of that particular section must be attempted in the correct order

SECTION A: READING SKILLS

(22 marks)

1. Read the following passage carefully: (12)

Education in the 21st century is undergoing a major transformation. A quiet revolution is now emerging through adaptive learning platforms in Indian languages—digital tools that adjust to each child’s pace and thinking language. These programmes use technology and data to create personalised pathways for students, ensuring that no two learners have the exact same experience.

The UDISE+ 2023–24 data notes nearly 25 crore students, two-thirds in government schools, most learning in regional languages such as Hindi, Marathi, Telugu, or Tamil. The NEP 2020 emphasised mother-tongue instruction in early years, confirming that real understanding begins in the language of the home.

Traditionally, classrooms have followed a one-size-fits-all model, where teachers deliver the same lesson to every student. While this approach has its merits, it often fails to meet the needs of students who learn at different speeds. Some students may find the pace too fast, while others may feel under-challenged. Adaptive learning programmes attempt to solve this problem by tailoring content to the individual learner. The students understand concepts better when taught in their own language.

At the heart of these programmes lies the power of artificial intelligence and data analytics. Each time a student answers a question or completes an activity, the system analyses the response. If the student struggles, the programme provides additional practice or simpler explanations. If the student excels, it offers more advanced material. In this way, adaptive platforms act like a personal tutor, adjusting instruction moment by moment.

The benefits are many. First, students gain confidence as they learn at their own pace. Second, teachers receive valuable insights into each learner's progress through dashboards and reports. This allows them to focus their attention on students who need extra support. Third, parents too can monitor growth and encourage their children more effectively.

Now schools are experimenting with adaptive tools in mathematics, science, and languages. For example, schools are using digital platforms where students attempt quizzes, and the system automatically suggests revision in weak areas.

However, challenges remain. The high cost of technology, unequal internet access, and the need to train teachers to use these platforms effectively are major hurdles. Experts also caution that adaptive learning should not replace, human interaction. After all, education is not only about solving problems but also about developing creativity, empathy, and teamwork—skills that machines cannot teach.

Despite these concerns, adaptive learning programmes are expected to play an important role in future. These tools may help bridge learning gaps and ensure that every child receives the support they need to succeed.

Answer the following questions, based on the passage above.

- I. What can you infer about the role of adaptive learning in reducing stress for students?
Support your answer with example from the passage. 2
- II. Complete the following statement:
The NEP 2020 has been mentioned in the passage as _____. 1
- III. How do adaptive learning programmes act like a “personal tutor”? Identify and explain two features from the passage. 2
- IV. In paragraph 3, the word “tailoring” is used to suggest that adaptive learning programmes _____. 1
- a) follow the same method for every learner
 - b) adjust/ modify lessons to meet individual student needs
 - c) replace teachers with technology completely
 - d) focus only on language translation and grammar
- V. Complete the following with the correct option from those given in the brackets. 1
The author uses the phrase “one-size-fits-all” in the second paragraph to highlight the _____ of standardised teaching methods.
(benefits / necessity/ drawbacks / convenience)
- VI. Which of these examples BEST reflects the practical use of adaptive learning in classrooms as described in the passage? 1
- a) Group discussions on real-world issues
 - b) Digital platforms suggesting revision areas after quizzes
 - c) Students preparing handwritten notes for exams
 - d) Teachers delivering the same lecture to every class
- VII. The author’s overall stance on adaptive learning programmes can be described as _____. 1

- VIII. Do you agree with the statement: "Adaptive learning programmes can replace traditional classrooms in the future"? Give reason for your answer based on the passage. 2
- IX. Which statement best summarises the central idea of the passage? 1
- India's classrooms need more digital tools.
 - Adaptive learning in Indian languages can close the equity gap.
 - Technology alone can solve all learning challenges.
 - English should remain the main medium of instruction.

2. Read the following passage carefully: (10)

According to the National Institute of Health (NHI), fast foods are becoming a quick alternative to home-cooked meals, especially among young Indians. However, these foods are high in fat, sugar, salt, and calories, leading to rising cases of obesity, high cholesterol, and colorectal cancer. Still the traditional family dinner is increasingly being replaced by eating "on the run". About 54% of Indians are below 25 years, and eating out is their favourite form of entertainment.

The organised fast-food sector in India is expanding rapidly. Busy lifestyles of people and dual-working families with children have provided the perfect platform for fast food companies to grow. Though fast-food chains account for less than 5% of India's total food services market (compared to the global average of 20%), growth has been strong. McDonald's serves 46 million people daily worldwide. India's food services market was valued at ₹24,236 billion in 2020, with fast food chains contributing ₹2,348 billion (54%), projected to reach 64% by 2025. After Covid lockdowns, major brands like McDonald's, Domino's, and Burger King adapted quickly by strengthening delivery networks. The sector now benefits from a young population, value pricing, and online delivery platforms, helping brands expand to tier-2 and tier-3 cities. The fast-food industry in India is expected to grow at a compound annual rate of 23% between 2021 and 2025.

Answer the following questions, based on your reading of the above information :

- I. According to the passage, which [5] up forms the largest segment of fast-food consumers in India? 1
- II. "The traditional family dinner is increasingly being replaced by eating on the run". Justify the following, in about 40 words. 2
- III. What does the phrase "eating on the run" suggest about modern eating habits? 1
- People eat quickly while multitasking.
 - People enjoy long family meals.
 - People are avoiding eating outside.
 - People are returning to traditional cooking.
- IV. The share of fast-food chains in India's food services market is expected to rise from _____ by 2025. 1
- V. Which statement accurately represents the author's view? 1
- Fast food represents progress without any negative effects.
 - The author wants young people to eat fast food.
 - Fast food reflects economic change but poses health concerns.
 - The author promotes fast-food chains as essential for development.
- VI. If the fast-food sector continues its projected growth, _____ industry is most likely to benefit directly. 1
- VII. Which statement best summarises the passage's main idea? 1
- Fast food consumption is falling because people today are health-conscious.
 - The fast-food sector has declined sharply in India after the Covid-19 pandemic.
 - Young Indians are returning to traditional, home-cooked meals and family dining.
 - Fast food has become a key part of India's modern lifestyle despite health risks.

- VIII. Do you think the increased preference and rapid growth of fast-food chains is entirely positive? Support your answer with reasons from the passage. 2

SECTION B: WRITING SKILLS**(22 marks)**

3. You are Ananya Sharma, Class X-B, Head Girl of your school. Your team has been selected for the district-level Science Quiz Contest to be held next week. Write an application, in not more than 50 words, to the Principal seeking approval to participate. Also, request school support in terms of transport, entry fees, guidance from a science teacher, and use of the library for preparation. (3)
4. Write a factual description, in not more than 100 words, of your laptop, highlighting its key features, specifications, and usefulness for studies. (4)
5. Attempt any one of the two, (A) or (B), in 150 words (7)

A) Climate change is one of the greatest challenges facing humanity today. Rising global temperatures, melting glaciers, extreme weather, and pollution threaten life on Earth. Science and technology can play a crucial role in combating these challenges, but public awareness and active participation are equally important.

As Sakshi Tripathi, 120 Kailash Nagar, Batanpur, write a letter to the Editor of a national daily on the topic: "Science and Technology – Tools to Fight Climate Change"

Use your own ideas along with those from MCB Unit Science, to write this letter.

OR

B) Lifestyle-related diseases such as obesity, diabetes, hypertension, and heart ailments are becoming common among India's youth due to poor dietary habits and a sedentary lifestyle. There is an urgent need of spreading awareness to promote fitness and healthy living.

As Tanush of 63, Lajpat Nagar, Agra. Write a letter to the Editor of Health Today magazine expressing concern over the rise of lifestyle diseases among youth and suggesting steps that schools, families, and the government can take to prevent lifestyle diseases among young people. Use your own ideas along with those from MCB Unit Health and Medicine, to write this letter.

6. Attempt any one of the two, (A) or (B), in about 150 words: (1×8=8)

A) India is often described as a land of “Unity in Diversity.” Despite differences in language, religion, food and customs, Indians share a common spirit of harmony and brotherhood.

You are Aarav/Ananya, Class X, and Cultural Secretary of your school. Write an article for your school magazine highlighting the very essence of this belief on the topic: “Unity in Diversity – The Strength of India”.

You may use your own ideas along with the given cues and your reading of MCB National Integration.

- India: land of varied languages, religions, customs
- Festivals celebrated across communities (Diwali, Eid, Christmas, Baisakhi, Pongal, Onam, etc.)
- Shared traditions of respect, hospitality, family values
- Role of music, dance, cinema, and sports in uniting people
- National symbols: Tricolour, National Anthem, national festivals
- Message: Diversity is our strength; together we build a strong nation

OR

B) Education today goes beyond classrooms and textbooks. Travel is increasingly being recognised as a powerful way of learning. Schools are now organising excursions, study tours, and heritage walks to give students real-world exposure. You are Kadambari Rao, a student of Class X. Write an article on the topic “Travel as an Education”, highlighting the potential benefits of the experience and suggesting ways to integrate travel-based learning more effectively.

- Travel - a living classroom; teaches beyond books
- travel as a form of experiential learning
- First-hand knowledge of history, geography, culture, and traditions
- Exposure to diversity of languages, food, and lifestyles
- Develops adaptability, self-confidence, independence, problem-solving
- Travel promotes curiosity, creativity, and global awareness
- Improves observation, curiosity, creativity, and social skills
- Examples: heritage site visits, museum tours, nature camps, exchange programmes.

SECTION C: GRAMMAR

(10 marks)

7. A) Fill in the blanks (i) – (iii) with the appropriate option from those in the brackets: (3)
- The introduction of artificial intelligence in classrooms (i)_____ (is debated / was being debated / had debated) as both a promise and a risk. Some argue that education (ii) _____ (would reach everyone / couldn't reach everyone / might reach everyone) if access (iii) _____ (ensures / is ensured / was ensuring) for all students.
- B) In the following paragraph, one word has been omitted in each line. In your answer sheets, remember to write the missing word along with the word that comes before and after it, as shown below. The first one has been done as an example (4x1=4)

S. No.	Text	Word before	Omission	Word After
e.g.	Although technology transformed education,	technology	has	transformed
i	it cannot replace values empathy.			
ii	Learning is not confined classrooms;			
iii	it extends to experiences shape character.			
iv	However, students be guided responsibly.			

C) Do as directed : (1 + 2 =3)

I. Rearrange the following jumbled words/phrases in the given dialogue to create a meaningful sentence.

RAVI: Board exams always make students anxious.

PRIYA: I. not only / emotional stress / they create / performance pressure / but also / due to / peer comparison / a lot of

II. Report the conversation given below by filling in the blanks to complete the following paragraph.

Ritika : Can I borrow your book for a couple of days?

Mohit : Yes certainly, I have already studied for the test tomorrow.
Ritika asked Mohit (a) for a couple of days. Mohit agreed and said that (b)

SECTION D: LITERATURE TEXTBOOK

(26 MARKS)

8. Read the given extract and answer the questions briefly, for any two extracts, of the three, given : (2X4=8)

A). "How amused everyone would be if they knew what really happened," said Louisa Mebbin a few days after the ball. "What do you mean?" asked Mrs. Packletide quickly. "How you shot the goat and frightened the tiger to death," said Miss Mebbin, with her disagreeably pleasant laugh. "No one would believe it," said Mrs. Packletide, her face changing colour as rapidly as though it were going through a book of patterns before post-time. (Mrs. Packletide's Tiger)

I. What did Miss Mebbin reveal about the incident that happened during the tiger hunt?

II. Why did Miss Mebbin make the statement, "How amused everyone would be if they knew what really happened"?

III. Identify any one character trait of Miss Mebbin's character revealed through the above lines?

IV. What does Mrs. Packletide's rapid change of facial colours indicate about her inner state?

B) "And immediately I regretted it.

I thought how paltry, how vulgar,

what a mean act!

I despised myself and

the voices of my accursed human education.

And I thought of the albatross

And I wished he would come back, my snake."

(The Snake)

I. What is referred to as "a mean act" in the poem?

II. How is the poet's inner conflict revealed after he hurts the snake?

III. Why does the poet wish for the snake to return?

IV. What reminds the speaker of an "albatross"?

C) Drama:

CALPURNIA : When beggars die, there are no comets seen; The heavens themselves blaze forth the death of princes.

CAESAR : Cowards die many times before their deaths; The valiant never taste of death but once. Of all the wonders that I yet have heard. It seems to me most strange that men should fear; Seeing that death, a necessary end, Will come when it will come

(Julius Ceasar)

I. What request does Calpurnia make to Caesar?

II. "According to Caesar, how do cowards and brave men differ in their attitude towards death?"

III. How does this passage highlight the contrast between Calpurnia and Caesar?

IV. Explain the meaning of the words 'necessary end' in the context of the given lines.

9. Answer any five of the following six questions. (5x2=10)

- I. How does Michael grow as a character through his interaction with Sebastian?
(Virtually True)
- II. Why does Patol Babu's wife tell him that he is counting his "chicken's before they're hatched?" (Patol Babu, Filmstar)
- III. How does the ending of The Dear Departed reflect poetic justice for the daughters?
(The Dear Departed)
- IV. What challenge does Ozymandias throw to others through the inscription on his statue? What does this reveal about his character? (Ozymandias)
- V. Why does the poet present the killing of the albatross as a violation of nature's law?
(The Rime of the Ancient Mariner)
- VI. Lavinia had bought the Ouija Board with great excitement but in the end, she asked the cook to burn it. What made her so eager to burn the Ouija Board? (A Shady Plot)

10. Answer any one of the following two questions in about 150 words. (1x8=8)

- A) "A mentor is someone who allows you to see the hope inside yourself."
Keeping this in mind, compare the role of the mentors in The Frog and the Nightingale and Patol Babu, Film Star. How did the mentors affect the respective protagonists, and what lesson does this teach us about guidance?

OR

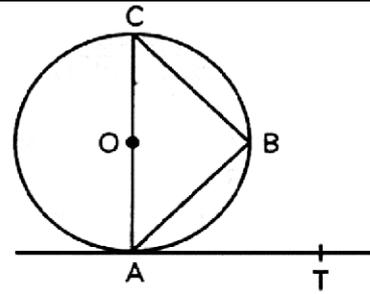
- B) Both the stories "Two Gentlemen of Verona' and 'The Letter' teach us not to lose hope and courage even in adverse situations. Write a letter to a friend justifying the statement with reference to the stories.

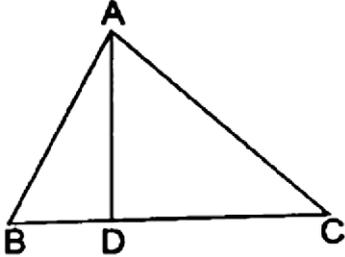
II Pre-Board Examination, 2025–26**Sub. : Mathematics (Basic)****Time : 3.00 Hrs.]****Class – X****[M. M. : 80****General Instructions:**

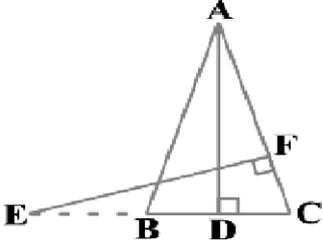
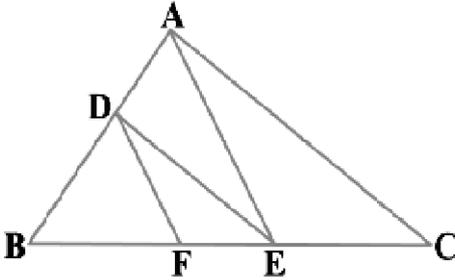
1. This Question Paper has 5 Sections A, B, C, D and E.
2. Section A has 18 MCQs and 2 Assertion and reasoning Questions carrying 1 mark each.
3. Section B has 5 questions carrying 02 marks each.
4. Section C has 6 questions carrying 03 marks each.
5. Section D has 4 questions carrying 05 marks each.
6. Section E has 3 case based integrated units of assessment (04 marks each) with sub- parts of the values of 1, 1 and 2 marks each respectively.
7. All Questions are compulsory. However, an internal choice in 2 Questions of 5 marks, 2 Questions of 3 marks and 2 Questions of 2 marks has been provided. An internal choice has been provided in the 2 marks questions of Section E
8. Draw neat figures wherever required. Take $\pi = 22/7$ wherever required if not stated.

SECTION A		
1	The prime factorization of 13915 is (a) $5 \times 11^3 \times 13^2$ (b) $5 \times 11^3 \times 23^2$ (c) $5 \times 11^2 \times 23$ (d) $5 \times 11^2 \times 13^2$	1
2	If one zero of the polynomial $6x^2 + 37x - (k - 2)$ is reciprocal of the other, then what is the value of k (a) - 4 (b) - 6 (c) 6 (d) 4	1
3	The pair of linear equations $2x = 5y + 6$ and $15y = 6x - 18$ represents two lines which are: (a) intersecting (b) parallel (c) coincident (d) either intersecting or parallel	1

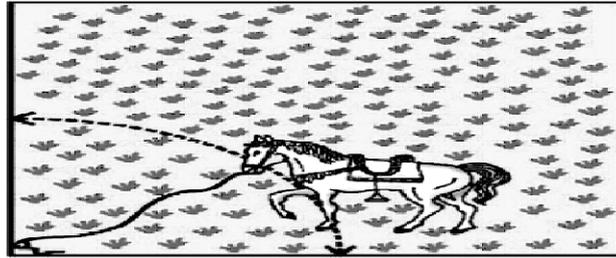
4	Which of the following equations has the sum of its roots as 3? (a) $2x^2 - 3x + 6 = 0$ (b) $-x^2 + 3x - 3 = 0$ (c) $3x^2 - 3x + 6 = 0$ (d) $3x^2 - 2x + 6 = 0$	1														
5	The first three terms of an A.P. respectively are $3y - 1$, $3y + 5$ and $5y + 1$. Then, y equals (a) -3 (b) 4 (c) 5 (d) 2	1														
6	The distance between the points (a, b) and $(-a, -b)$ is (a) $\sqrt{a^2 + b^2}$ (b) $a^2 + b^2$ (c) $2\sqrt{a^2 + b^2}$ (d) $4\sqrt{a^2 + b^2}$	1														
7	If two dice are thrown in the air, the probability of getting sum as 3 will be (a) $2/18$ (b) $1/18$ (c) $3/18$ (d) $1/36$	1														
8	A cylindrical pencil sharpened at one edge is the combination of (a) a cone and a cylinder (b) a hemisphere and a cone (c) a hemisphere and a cylinder (d) two cylinders	1														
9	The empirical relationship between the three measures of central tendency is (a) $3 \text{ Median} = \text{Mode} + 2 \text{ Mean}$ (b) $2 \text{ Median} = \text{Mode} + 2 \text{ Mean}$ (c) $3 \text{ Median} = \text{Mode} + \text{Mean}$ (d) $3 \text{ Median} = \text{Mode} - 2 \text{ Mean}$	1														
10	In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. The length of the arc is; (a) 20cm (b) 21cm (c) 25cm (d) 22cm	1														
11	$1 - \tan^2 30^\circ / 1 + \tan^2 30^\circ$ is equal to (a) $\cos 60^\circ$ (b) $\sin 60^\circ$ (c) 1 (d) $\tan^2 60^\circ$	1														
12	AB is a chord of the circle and AOC is its diameter such that angle $ACB = 50^\circ$. If AT is the tangent to the circle at the point A, then BAT is equal to (a) 65° (b) 60° (c) 50° (d) 40°	1														
13	The following distribution shows the marks distribution of 80 students. <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Marks</th> <th>Below 10</th> <th>Below 20</th> <th>Below 30</th> <th>Below 40</th> <th>Below 50</th> <th>Below 60</th> </tr> </thead> <tbody> <tr> <td>No. of students</td> <td>2</td> <td>12</td> <td>28</td> <td>56</td> <td>76</td> <td>80</td> </tr> </tbody> </table> <p>The median class is (a) 20-30 (b) 40-50 (c) 30-40 (d) 10-20</p>	Marks	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60	No. of students	2	12	28	56	76	80	1
Marks	Below 10	Below 20	Below 30	Below 40	Below 50	Below 60										
No. of students	2	12	28	56	76	80										
14	The area of a circle that can be inscribed in a square of side 6 cm is: (a) $36 \pi \text{ cm}^2$ (b) $18 \pi \text{ cm}^2$ (c) $12 \pi \text{ cm}^2$ (d) $9 \pi \text{ cm}^2$	1														



15	The probability of getting a bad egg in a lot of 400 is 0.035. The number of bad eggs in the lot is (a) 7 (b) 14 (c) 21 (d) 28	1
16	If $\frac{1}{2}$ is a root of the quadratic equation $x^2 - mx - \frac{5}{4} = 0$, then value of m is: (a) 2 (b) -2 (c) -3 (d) 3	1
17	In $\angle BAC = 90^\circ$ and $AD \perp BC$. A Then (a) $BD \cdot CD = BC^2$ (b) $AB \cdot AC = BC^2$ (c) $AB \cdot AC = AD^2$ (d) $BD \cdot CD = AD^2$	1
		
18	The perimeters of two similar triangles are 25 cm and 15 cm respectively. If one side of first triangle is 9 cm, what is the corresponding side of the other triangle? (a) 5.4 cm (b) 3.5 cm (c) 5.5 cm (d) 4.5 cm	1
	DIRECTION: In the question number 19 and 20, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option 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 and 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.	1
19	ASSERTION: If $\cos A + \cos^2 A = 1$, then $\sin^2 A + \sin^4 A = 1$ REASON: $\sin^2 A + \cos^2 A = 1$	1
20	Assertion (A): The point $(-1, 6)$ divides the line segment joining the points $(-3, 10)$ and $(6, -8)$ in the ratio 2 : 7 internally. Reason (R): Given three points, i.e. A, B, C form an equilateral triangle, then $AB = BC = AC$.	1
SECTION B		
21	Three bulbs red, green and yellow flash at intervals of 80 seconds, 90 seconds and 110 seconds. All three flash together at 8:00 am. At what time the three bulbs flash together again?	2

22	<p>In the following figure, E is a point on side CB produced of an isosceles triangle ABC with $AB = AC$. If $AD \perp BC$ and $EF \perp AC$, prove that $\triangle ABD \sim \triangle ECF$.</p>  <p style="text-align: center;">OR</p> <p>In the figure, $DE \parallel AC$ and $DF \parallel AE$. Prove that $BF/FE = BE/EC$</p> 	2
23	<p>A bag has 5 white marbles, 8 red marbles and 4 purple marbles. If we take a marble randomly, then what is the probability of not getting purple marble?</p>	2
24	<p>If $\tan \theta = 3/4$, evaluate $\frac{(1+\sin \theta)(1-\sin \theta)}{(1+\cos \theta)(1-\cos \theta)}$</p> <p style="text-align: center;">OR</p> <p>If $\sin(A - B) = 1/2$ and $\cos(A + B) = 1/2$, then find A and B.</p>	2
25	<p>The radii of two concentric circles are 3 cm and 5 cm. Find the length of the chord of the outer circle which is tangent to the smaller circle.</p>	2
SECTION C		
26	<p>Prove that $\sqrt{3}$ is irrational.</p>	3
27	<p>If 2 and - 3 are the zeroes of the polynomial $x^2 + (a + 1)x + b$, then find the value of a and b.</p>	3
28	<p>Prove that: $(\sin A - 2 \sin^3 A)/(2 \cos^3 A - \cos A) = \tan A$</p>	
29	<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.</p>	3

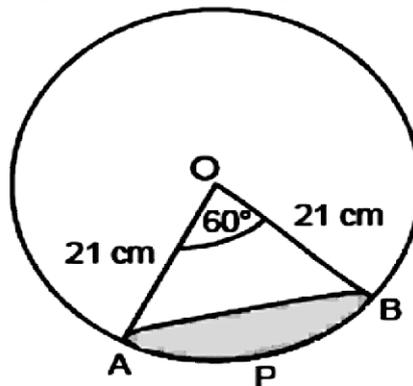
(ii) the increase in the grazing area if the rope were 10 m long instead of 5 m.
(Use $\pi=3.14$)



OR

In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. Find:

- (i) the length of the arc
- (ii) area of the sector formed by the arc
- (iii) area of the segment formed by the corresponding chord.



30 Prove that the parallelogram circumscribing a circle is a rhombus. 3

31 A passenger train takes 2 hours less for a journey of 300 km if its speed is increased by 5 km/hour from its usual speed. Find the usual speed of the train. 3

OR

The sum of two numbers is 34. If 3 is subtracted from one number and 2 is added to another, the product of these two numbers becomes 260. Find the numbers.

SECTION D

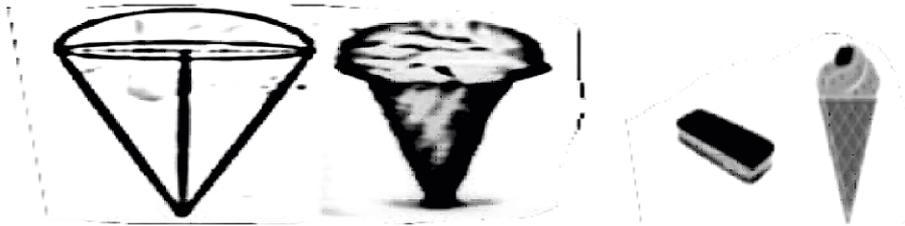
32 Draw the graphs of the equations $x - y + 1 = 0$ and $3x + 2y - 12 = 0$. Determine the coordinates of the vertices of the triangle formed by these lines and the x-axis, and shade the triangular region. 5

OR

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 Rs. 2000 per month, find their monthly incomes.

33	If a line is drawn parallel to one side of a triangle, the other two sides are divided in the same ratio, prove it.	5												
34	<p>The angles of depression of the top and the bottom of an 8 m tall building from the top of a multi-storeyed building are 30° and 45°, respectively. Find the height of the multistoreyed building and the distance between the two buildings.</p> <p style="text-align: center;">OR</p> <p>A bird is sitting on the top of a tree, which is 80 m high. The angle of elevation of the bird, from a point on the ground is 45°. The bird flies away from the point of observation horizontally and remains at a constant height. After 2 seconds, the angle of elevation of the bird from the point of observation becomes 30°. Find the speed of flying of the bird.</p>	5												
35	<p>A survey regarding the heights of 50 girls of class Xth of a school was conducted and the following data was obtained. Find the mean, median and mode of the given data.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td>Height (cm)</td> <td>120- 130</td> <td>130-140</td> <td>140-150</td> <td>150-160</td> <td>160-170</td> </tr> <tr> <td>No. of girls</td> <td>2</td> <td>8</td> <td>12</td> <td>20</td> <td>8</td> </tr> </tbody> </table>	Height (cm)	120- 130	130-140	140-150	150-160	160-170	No. of girls	2	8	12	20	8	5
Height (cm)	120- 130	130-140	140-150	150-160	160-170									
No. of girls	2	8	12	20	8									
SECTION E														
36	<p>Raji decided to arrange the flower pots in her balcony in a particular order. She bought few plants with pots for her balcony. She placed the pots in such a way that the number of pots in the first row is 2, second row is 5, third row is 8 and so on</p> <p>Based on the above information, answer the following questions:</p> <p>I). Find the number of pots placed in the 10th row. II). Find the total number of pots in first three rows. III). Find the difference in the number of pots placed in 5th row and 2nd row.</p> <p style="text-align: center;">OR</p> <p>If Raji wants to place 101 pots in total, then the find total no of rows formed in the arrangement.</p>	4												
														
37	An ice –cream seller used to sell different kinds and different shapes of ice –cream like rectangular shaped, conical shape with one end hemispherical, rectangular shape with one end hemispherical and rectangular brick etc. One day sita came to his shop and purchased an ice cream which has the following shape: ice – cream cone as the union of a right circular cone and a hemisphere that has the same (circular) base as cone. The	4												

height of the cone is 9 cm and the radius of its base is 2.5 cm.



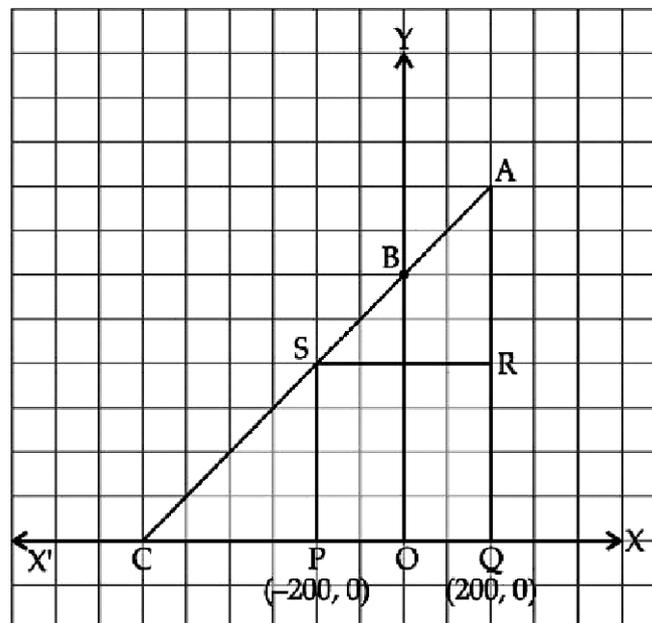
Answer the following questions:

1. Calculate the volume of only hemi spherical end of the ice cream
2. Write the formula to calculate the total surface area of cone.
3. What is the volume of the whole ice - cream?

OR

Find the volume of ice cream if $\frac{1}{3}$ part of cone is empty.

- 38 Jagdish has a field which is in the shape of a right angle triangle AQC. He wants to leave a space in the form of a square PQRS inside the field from growing wheat and the remaining for growing vegetables (as shown in the figure). In the field, there is a pole marked as O.



Based on the above information, answer the following questions:

- (i) Taking O as origin, coordinates of P are $(-200, 0)$ and of Q are $(200, 0)$.

[8]

PQRS being a square, what are the coordinates of R and S?

(ii) What is the length of diagonal PR in square PQRS?

(iii) If S divides CA in the ratio $K : 1$, what is the value of K, where point A is $(200, 800)$?

OR

If B divides CA in the ratio $K : 1$, what is the value of K, where point A is $(200, 800)$?