केंद्रीय विद्यालय बोवनपल्ली
कक्षा : 6 शारदकालीन गृहकार्य – 2025

1. English Holiday Homework

Class 6
Creative Writing Fun!

Instructions:
Choose any 4 questions from the options below and write your answers in a creative and imaginative way in HW notebook in 120-150 words.
Questions:
1. *The Magic Pencil*: Imagine you have a magic pencil that can bring anything you draw to life. What would you draw first, and what would happen?
2. *A Letter to My Future Self*: Write a letter to yourself 10 years from now. What do you hope to achieve, and what advice would you give yourself?
3. *The Adventures of a Pet*: You've been given a magical pet that can talk and do amazing things. Describe your pet's adventures and what you learn from them.
4. *A Day in the Life of a Tree*: Imagine you are a tree in a forest. Describe a day in your life, including the animals that visit you and the changes you experience with the seasons.
5. *The Mysterious Island*: You discover a mysterious island that appears only at night. Describe what you see and experience on this magical island.
- Have fun and enjoy the process of writing.

2. CLASS VI SCIENCE AUTUMN HOLIDAYS HOME WORK

MAKE ONE ART INTEGRATED PROJECT ON HEALTH AND HYGIENE.

YOU CAN ADD BEAUTIFUL DRAWINGS , TABLES ETC. USE YOUR CREATIVITY SKILLS WHILE MAKING IT.

You can use some waste products to decorate it. Show your skills to the fullest and make one very beautiful project.
Complete your activity notebooks and make it beautiful in your holidays.
Take one transparent jar, grow the roots of onion in it and bring on school reopening day.

3. Class 6 : SST

AUTUMN BREAK HOLIDAY HOMEWORK
All answers to be done neatly A4 size sheet.
Submit on the first day after the autumn break.

1.History: From “Timelines and Sources of History” – Write short notes on manuscripts, inscriptions, and archaeology.
2.Geography: From “Oceans and Continents” – Draw the world map and label all the continents and oceans.
3.Civics: From “Family and Community” – Explain in your own words why rules are important in a family or community.
Creative Activity: Any two A3/ A4 SIZE
a. Make a poster on “Save Water, Save Life” OR “Conserve Resources for Future Generations”.
b. Save our planet
c. Disaster Management
d. Democracy- Power of vote
e. Heritage of India- Protect Monuments , Protect History

FUN ACTIVITY
Collect 3 newspaper clippings related to Social Science topics (environment, economy, government, history, or geography) and paste them in your notebook with a short explanation.

4. कक्षा 6 वीं विषय : हिंदी

*शरद ऋतु अवकाश गृहकार्य 2025 -2026
1. 10 पृष्ठ सुलेख लिखें।
2. एक स्वरचित कविता लिखिए।
3. दशहरे पर एक अनुच्छेद लिखें।
4. मेरा प्रिय खेल इस विषय पर 200 शब्दों में निबन्ध लिखें।
5. 15 पर्यायवाची शब्द, 15विलोम शब्द एवं 15 मुहावरे एवं मुहावरों का वाक्य में प्रयोग कीजिए।

5. कक्षा : 6 संस्कृत

1)अकारान्त पुंलिङ्ग,राम शब्दः,बालक शब्दः वृक्षः शब्दः केवल प्रथमा विभक्ति
2) आकारान्त,बालिका ,रमा,लता, केवल प्रथमा बिभगति
३) भू धातु केवल प्रथम पुरश
लिख् धातु,पठ धातु

6. CLASS 6TH MATHS AUTUMN HOLIDAY HOMEWORK

1.Learn and write (5 times)tables from 2 to 20 in a homework notebook.
2.Make a beautiful rangoli using different patterns on A3 size sheet.

PM SHRI KENDRIYA VIDYALAYA BOWENPALLY

HOLIDAY HOME WORK(Autumn Break)

Science

CLASS VII

1.Exercise questions from Chapter Adolescence.

2.Project on

Global Warming/Ozone layer/Conservation of water

3.Chart on Swacchta Pakhwada

Holiday Homework:English Class VII
Choose any 4 questions from the options below. Write your answers in a creative and imaginative way in 120- 150 words in HW notebook.
Questions:
1. *The Mysterious Box*: You stumble upon a mysterious box in your attic. What's inside? Write a short story about what happens when you open it.
2. *A Day in the Life of an Object*: Choose an everyday object, like a pencil or a chair. Write a descriptive paragraph about what its day would be like if it could talk.
3. *The Time Traveler's Dilemma*: You've discovered a time machine that can take you back to any historical event. Where do you go, and what do you do when you get there? Write a short story about your adventure.
4. *The Magic Garden*: Imagine you're walking through a magical garden filled with talking flowers, sparkling fountains, and hidden secrets. Write a descriptive paragraph about what you see, hear, and feel.
5. *The Future World*: It's the year 2050, and the world has changed dramatically. Write a short story about what your life would be like in this futuristic world

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AUTUMN BREAK HOME WORK- MATHEMATICS CLASS 7

NOTE: Do in maths notebook itself in HW SIDE but NOT CW side.

Page 75

sums 1 a to h , 2 a to h

Page 78

1 a to d

Page 80

16 a to f

Total 26 sums

Class 7

Sst

All answers to be done neatly in your A4 size sheet.

All answers to be done neatly in your A4 size sheet.

Submit on the first day after the autumn break.

1.History: From “Medieval Society” – What were the main occupations of people in towns duringMagadha and gupta period?

2.Geography: From “Environment” – Define the following: ecosystem, human environment, natural environment.

3.Civics: From "Public Facilities" – Why are public facilities like water and electricity important for all?

4 Creative Activity: Any two A3/ A4 SIZE

a. Make a poster on "Save Water, Save Life" OR "Conserve Resources for Future Generations".

b. Save our planet

c. Disaster Management

d. Democracy- Power of vote

e. Heritage of India- Protect Monuments , Protect History

5 Collect 3 newspaper clippings related to Social Science topics (environment, economy, government, history, or geography) and paste them in your notebook with a short explanation.

Sanskrit – will update

English Holiday Homework Class 8

Instructions:

Choose any 4 questions from the options below and complete the writing task. Use your imagination and creativity to make your writing engaging and interesting in 120-150 words.

1. ***Diary Entry***: Write a diary entry about your experiences, what you learned, and your favorite moments in the autumn break.

2. *Short Story*: Write a short story titled "The Surprise Party." Think about the characters, setting, and plot twists that will make your story exciting and engaging.

3. *Letter to a Friend*: Write a letter to a friend who has moved to a new city. Describe your daily life, favorite activities, and what's new and exciting in your school or community.

4. *Diary Entry as a Historical Figure*: Choose a historical figure and write a diary entry from their perspective. Describe their thoughts, feelings, and experiences on a particular day in their life.

5. *Letter to Your Future Self*: Write a letter to yourself 5 years from now. What goals and aspirations do you hope to achieve? What advice would you give yourself?

पीएम श्री केंद्रीय विद्यालय बोवनपल्ली

शरदकालीन अवकाशीय गृह कार्य

कक्षा – आठवीं विषय हिंदी

1.कविता: “एक आशीर्वाद” (कविता) पढ़े |

कविता से सीख क्या मिली? अपने शब्दों में लिखें और उसपर एक स्लोगन बनाएं।

2. .आप “हरिद्वार यात्रा” पर अपने मित्र को एक पत्र लिखिए जिसमें वहाँ की प्राकृतिक सुंदरता, वहाँ का अनुभव और आपका मन पसंद दृश्य हो।

3. कोई भी 10 मुहावरे लिखकर उसका वाक्य में प्रयोग कीजिए।

4. मोबाइल का प्रयोग - लाभ और हानि इस विषय पर माँ और बेटा/बेटी के बीच संवाद लेखन कीजिए।

5. स्वच्छ भारत अभियान - इस विषय पर निबंध लिखिए।

PM SHRI KENDRIYA VIDYALAYA-BOWENPALLY

CLASS VIII MATH AUTUMN BREAK HOLIDAY HOMEWORK

Part A: *A Square and A Cube* (15 MCQs)

1. The square of 25 is:
   A) 525 B) 625 C) 725 D) 825
   Ans:
2. Cube of 12 is:
   A) 1428 B) 1728 C) 1328 D) 1528
   Ans:
3. Which of the following numbers is a perfect square?
   A) 44 B) 49 C) 55 D) 65
   Ans:
4. 81 ÷ 9 = ?
   A) 7 B) 8 C) 9 D) 10
   Ans:
5. The cube root of 216 is:
   A) 5 B) 6 C) 7 D) 8
   Ans:
6. The square root of 400 is:
   A) 10 B) 15 C) 20 D) 25
   Ans:
7. Which of the following is **not** a perfect cube?
   A) 64 B) 125 C) 216 D) 120
   Ans:
8. $2^3 \times 3^3$ equals:
   A) 18 B) 216 C) 64 D) 512
   Ans:
9. $17^2 - 16^2$ = ?
   A) 31 B) 33 C) 35 D) 37
   Ans:
10. A number ending with digit 2 can never be:
    A) A square B) A cube C) Prime D) Composite
    Ans:
11. Which of these is equal to $8^2 \times 8^3$?
    A) 8^5 B) 8^6 C) 8^7 D) 8^4
    Ans:
12. The smallest square number divisible by 9 is:
    A) 9 B) 18 C) 36 D) 81
    Ans:
13. The smallest cube number divisible by 15 is:
    A) 15 B) 125 C) 225 D) 3375
    Ans:
14. The square of 0.5 is:
    A) 0.25 B) 0.50 C) 0.75 D) 1.00

Ans:

15. The cube root of 0.008 is:
    A) 0.01 B) 0.1 C) 0.2 D) 0.5
    Ans:

Part B: *A Story of Numbers* (15 MCQs)

16. In Method-1, pairing each cow with one stick is called:
    A) Place value B) One-to-one mapping C) Landmarking D) Grouping by fives
    Ans:
17. A "standard sequence" (number system) is needed so that we can:
    A) Perform only subtraction B) Sort objects by size
    C) Count by mapping objects to an ordered list of names/symbols D) Avoid using symbols
    Ans:
18. Using letters a–z as number names (Method-2) fails because:
    A) Letters can't be ordered B) It stops at 26 objects
    C) Vowels cannot be used D) It has no symbol for zero
    Ans:
19. The Roman system builds numbers using "landmark numbers". Which list shows these?
    A) 1, 2, 4, 8, 16 B) I, V, X, L, C, D, M C) A, B, C D) I, II, III
    Ans:
20. 27 written in Roman numerals is:
    A) XXV B) XXIV C) XXVII D) XXXII
    Ans:
21. In Roman numerals, 40 is commonly written as:
    A) XL B) XXXX C) XD D) IL
    Ans:
22. The system where numbers are formed by counting in **twos** (e.g., 6 = 2+2+2) was used by:
    A) Mesopotamians B) Gumulgal (Australia) C) Egyptians D) Chinese
    Ans:
23. Which pair are prehistoric tally artifacts?
    A) Ishango bone and Lebombo bone B) Rosetta stone and Ishango bone
    C) Bakhshali manuscript and Lebombo bone D) Rosetta stone and Bakhshali manuscript
    Ans:
24. A drawback of "count-by-group-size only" systems (like all-5s) is that they:
    A) Need zero B) Can be ambiguous with place value
    C) Become cumbersome for large numbers D) Cannot show 1
    Ans:
25. A "landmark number" in this chapter means:
    A) Any prime B) A reference value used to build other numerals efficiently
    C) The largest number in a set D) A perfect square
    Ans:
26. The **Indian** system's digits 0–9 and place value were in use about 2000 years ago; the earliest zero (as a dot) appears in the:
    A) Rosetta manuscript B) Bakhshali manuscript C) Ishango tablet D) Mayan codex
    Ans:
27. The Indian numerals spread to the Arab world and were popularised by:
    A) Fibonacci via *Liber Abaci* only

B) Al-Khwārizmī's *On the Calculation with Hindu Numerals* and Al-Kindi
C) Euclid's *Elements*
D) Ptolemy's *Almagest*
Ans:

28. A **place value** (positional) system is one where the value of a symbol depends on its position. Which of these are place-value systems discussed?
A) Mesopotamian, Indian B) Roman, Egyptian
C) Roman, Mayan D) Gumulgal, Roman
Ans:

29. The Mesopotamian system later became a base-60 (sexagesimal) system. A visible legacy today is:
A) Weeks of 7 days B) 60 minutes/hour and 60 seconds/minute
C) 12 months/year D) Base-10 money
Ans:

30. Why is the Indian system with zero so powerful?
A) It avoids the need for addition
B) It writes every number unambiguously with few symbols and enables efficient computation
C) It uses only three symbols
D) It has no place value
Ans:

Part C: *Power Play* (15 MCQs)

31. 2^5 equals:
A) 32 B) 64 C) 16 D) 8
Ans:

32. The value of 5^0 is:
A) 0 B) 1 C) 5 D) Undefined
Ans:

33. The value of 2^{-3} is:
A) –8 B) –1/8 C) 1/8 D) 8
Ans:

34. $\sqrt{(3^2 + 4^2)} = ?$
A) 3 B) 4 C) 5 D) 6
Ans:

35. $9^2 \div 9^3 = ?$
A) 9 B) 1/9 C) 81 D) 729
Ans:

36. The exponential form of 1000 is:
A) 10^2 B) 10^3 C) 10^4 D) 100^3
Ans:

37. Which of these is equal to $(x^2)^3$?
A) x^2 B) x^5 C) x^6 D) x^9
Ans:

38. $(5^2)^0 = ?$
A) 1 B) 25 C) 0 D) 5
Ans:

39. The value of $3^4 \times 3^5$ is:
A) 3^9 B) 3^{20} C) 3^1 D) 3^5

Ans:

40. $(x^3 \times y^3) = ?$
    A) $(xy)^3$ B) $(x + y)^3$ C) $(x - y)^3$ D) None
    Ans:
41. The reciprocal of 2^{-4} is:
    A) 2^4 B) 1/16 C) 16 D) Both A and C
    Ans:
42. $(4^3 \div 4^2) = ?$
    A) 4 B) 16 C) 64 D) 1
    Ans:
43. $(x^5 \div x^2) = ?$
    A) x^3 B) x^7 C) x^{10} D) x^2
    Ans:
44. $10^{-2} = ?$
    A) 100 B) 0.01 C) 0.1 D) 0.001
    Ans:
45. $(2^3)^2 = ?$
    A) 6 B) 8 C) 64 D) 16
    Ans:

Part D: Assertion–Reason Type (5 MCQs)

46. **Assertion (A):** The cube of an even number is always even.
    Reason (R): Multiplying even × even × even always gives even.
    A) Both A and R are true, and R explains A
    B) Both A and R are true, but R does not explain A
    C) A is true, R is false
    D) A is false, R is true
    Ans:
47. **Assertion (A):** $\sqrt{49} = 7$.
    Reason (R): $7^2 = 49$.
    A) Both A and R are true, and R explains A
    B) Both A and R are true, but R does not explain A
    C) A is true, R is false
    D) Both are false
    Ans:
48. **Assertion (A):** Any number raised to the power zero is 1.
    Reason (R): Zero is the smallest natural number.
    A) Both A and R are true, and R explains A
    B) Both A and R are true, but R does not explain A
    C) A is true, R is false
    D) Both are false
    Ans:
49. **Assertion (A):** Every prime number greater than 2 is odd.
    Reason (R): All even numbers are divisible by 2.
    A) Both A and R are true, and R explains A
    B) Both A and R are true, but R does not explain A
    C) A is true, R is false

D) A is false, R is true

Ans:

50. **Assertion (A):** $2^3 \times 2^4 = 2^7$.

Reason (R): When multiplying powers with the same base, exponents are added.

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

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

C) A is true, R is false

D) Both are false

Ans:

HOLIDY HOME WORK- AUTUMN BREAK -2025

CLASS :8 A/B **SUBJECT: SCIENCE**

1.**Make Health Diary** for 10 days to track food, Hygiene, Exercise, sleep, SCREEN TIME. (Day 1 to Day 10). On A/4 paper [**Day 1 to Day 10 -follow steps given below]**

- **Food:** [What you ate, e.g., healthy breakfast, lunch, balanced dinner]
- **Hygiene:** [e.g., Brushed teeth, bathed, washed hands before meals, nails etc]
- **Exercise:** [Type of exercise and duration, e.g., 30 min walk]
- **Sleep:** [Time you went to bed/woke up, total hours slept]
- **Screen Time:** [Total hours on phone/computer/TV]
- **Notes/Feelings:** [e.g., Felt energetic after the walk, Relaxed after sleep etc]

2.Make a **Flow chart** on How **antibiotic resistance** spreads in the community and understand. Refer NCERT Text book Page number -40

3. Collect information about **non-communicable diseases** -Obesity, Diabetes, High Blood pressure, Cancers-**Symptoms** and **suggested Life style changes**. (Refer Text Book page -36.]

Class 8

AUTUMN BREAK HOLIDAY HOMEWORK

————————————————————- All answers to be done neatly in your A4 size sheet.

•Submit on the first day after the autumn break.

write short note on the given topics .

1.History: From "Agriculture" – Write a short note on different types of farming in India.

2.Geography: From "Resources" – Define renewable and non-renewable resources with two examples each.

3.Civics: From "Law and Social Justice" – Why is it important to protect workers from exploitation?

Creative Activity: Any two A3/ A4 SIZE

▪·Make a poster on "Save Water, Save Life" OR "Conserve Resources for Future Generations".
▪·Save our planetDisaster Management
▪·Democracy- Power of vote
▪·Heritage of India- Protect Monuments ,Protect History
▪·"Unity in Diversity: Strength of India"
▪·"Sustainable Development for a Better Future"

Fun Activity:

Fun Activity:

Collect 3 newspaper clippings related to Social Science topics (environment, economy, government, history, or geography) and paste them in your notebook with a short explanation.

संस्कृत

१) धातु रूपाणि,पठ धातु लिख्, धातु गम्,धातु पा,धातु

२) शब्दः रूपाणि राम ,रमा फल

३)अव्ययानि (स्थणबोधकानि)

PM SHRI KENDRIYA VIDYALAYA BOWENPALLY

HOLIDAY HOME WORK

CLASS IX

English

1. Prepare an Art-integrated project on any lesson using chart: Thematic Chart with pictures and drawings

2. Practice some topics of objective English questions for competitive exams.

3. Read any self-help book/novel or autobiography (wings of fire) and write a book review (150 words).

4. Watch the movie “Hachiko” and write a review (150 words).

   OR

   Create a poem.
   using the rhyme
   scheme.
   ABAB/ABCB

5. Practice 1 reading passages and grammar topics regularly.

   OR

Write an article on Vasudhaiva Kutumbakam- Universal Brotherhood

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Sanskrit

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SST

1. All answers to be done neatly in your A4 size sheet.

2. •Submit on the first day after the autumn break.

Part A – History (India and the Contemporary World – I)

Chapter: Socialism in Europe and the Russian Revolution

1.What were the social, economic, and political conditions in Russia before 1905?

2.In what ways was the working population in Russia different from other countries in Europe, before 1917?

3.Why did the Tsarist autocracy collapse in 1917?

4 .Make two lists: one with the main events and the effects of the February Revolution, and the other with the main events and effects of the October Revolution.

5.Write a few lines to show what you know about:

•Kulaks

•The Duma

•Women workers between 1900 and 1930

•The Liberals

•Stalin’s collectivisation programme

Activity:

Prepare a timeline chart of the Russian Revolution (1905–1930) with at least 6–8 important events

Part B – Geography (Contemporary India – I

Physical Features of India

1.Describe how the Himalayas were formed.

2.Distinguish between the Western Coastal Plains and the Eastern Coastal Plains.

Part C – Political Science (Democratic Politics – I)

Constitutional Design

1.What were the main features of the Constitution of South Africa?

2.Give reasons why the Constitution of India is acceptable to the Indian people even today.

Part D – Economics (Economics – Class IX)

Poverty as a Challenge

1.Discuss the major reasons for poverty in India.

2.Describe how poverty is looked at by social scientists.

3. Part E – Integrated Project Work

▪▪Prepare a chart on the main features of the Indian Constitution with attractive visuals.

•€Collect and paste 3–5 newspaper articles related to economic activities in villages.

 Reminder: Students who have not submitted their Portfolio or Disaster Management Project must complete and submit it after the holidays.

9 class MATHS HOLIDAY HOMEWORK

Do following activities

a) How to find Curved surface area of a cylinder in activity notebook.

B) Find total surface area of a cylinder in activity notebook .

With proper format aim , material required, etc.

Class-IX, Subject-Science

Physics

Answer the Exercise Questions of Gravitation Chapter

1. How does the force of gravitation between two objects change when the distance between them is reduced to half ?

2. Gravitational force acts on all objects in proportion to their masses. Why then, a heavy object does not fall faster than a light object?

3. What is the magnitude of the gravitational force between the earth and a 1 kg object on its surface? (Mass of the earth is 6 × 1024 kg and radius of the earth is 6.4 × 106 m.

4. The earth and the moon are attracted to each other by gravitational force. Does the earth attract the moon with a force that is greater or

smaller or the same as the force with which the moon attracts the earth? Why?

5. If the moon attracts the earth, why does the earth not move towards the moon?

6. What happens to the force between two objects, if (i) the mass of one object is doubled? (ii) the distance between the objects is doubled and tripled? (iii) the masses of both objects are doubled?

7. What is the importance of universal law of gravitation?

8. What is the acceleration of free fall?

9. What do we call the gravitational force between the earth and an object?

10. Amit buys few grams of gold at the poles as per the instruction of one of his friends. He hands over the same when he meets him at the equator. Will the friend agree with the weight of gold bought? If not, why? [Hint: The value of g is greater at the poles than at the equator.]

11. Why will a sheet of paper fall slower than one that is crumpled into a ball?

12. Gravitational force on the surface of the moon is only 1 6 as strong as gravitational force on the earth. What is the weight in newtons of a 10 kg object on the moon and on the earth?

13. A ball is thrown vertically upwards with a velocity of 49 m/s. Calculate (i) the maximum height to which it rises, (ii) the total time it takes to return to the surface of the earth.

14. A stone is released from the top of a tower of height 19.6 m. Calculate its final velocity just before touching the ground.

15. A stone is thrown vertically upward with an initial velocity of 40 m/s. Taking g = 10 m/s2 , find the maximum height reached by the stone. What is the net displacement and the total distance covered by the stone?

BIOLOGY

Make a small project work on health and diseases.

Topics that can be included are- health and its failure, infectious and non infectious diseases, their causes and manifestation.

Disease caused by microbes(virus,bacteria etc,) and their prevention. Principals of treatment and prevention. Pulse polio programs.

Include diagrams tables and make it presentable.

Prepare for your exams.

Complete your lab manual.

Chemistry

Make a table of the elements from atomic no.1 to 20 and write its atomic mass and valency on a4 sheet.

1.Formula of compounds.

2.Exercise questions from

Atom and molecules

3.Symbols of Elements

4.Charge on polyatomic Ions

कक्षा 10वीं

•शरद ऋतु अवकाश गृहकार्य 2025-26

1. अपने विद्यालय के प्राचार्य को विद्यालय में क्रिकेट मैच का टूर्नामेंट रखने हेतु आवेदन पत्र लिखिए।

2. आपके शहर में सभी प्रकार के खाद्य पदार्थों में मिलावट का धंधा लगातार बढ़ता ही जा रहा है आपके राज्य के खाद्य मंत्री को dfpd@gov.in पर एक ईमेल लिखकर इस समस्या के प्रति उनका ध्यान आकृष्ट कीजिए।

3. छात्रों के लिए खेल सामग्री उपलब्ध कराने का अनुरोध करते हुए अपने प्रधानाचार्य महोदय को kvs@gmail.com पर एक ईमेल लिखें।

4. पानी बचाओ, देश बचाओ इस पर एक विज्ञापन लिखिए।

5. शिक्षक के पद हेतु आवेदन करते हुए स्ववृत्त लिखिए।

CLASS 10TH SCIENCE AUTUMN BREAK HOLIDAYS HOME WORK

1. **Read chapter our environment make proper notes in notebook.**
2. **Complete your lab manual and portfolio and submit on reopening day.**
3. **Practice chapters for exam.**
4. **Do all the numericals (intext and exercise question) of chapter light, electricity on A4 sheet.**
5. **Subject enrichment activity- physics**
   Write all the following topics on a4 sheet in presentable form. Use diagrams and tables etc.
   1. **Myopia**
   2. **Hypermetropia**
   3. **All the cases given under atmospheric refraction like colour of sky, twinkling of stars, colour of danger signals etc.**
   4. **Fuse**

AUTUMN BREAK HOME WORK- MATHEMATICS CLASS 10

NOTE: Write questions and answers both.

Do in maths homework notebook itself .

Exercise 1.1 sum 3

Exercise 1.2 sums 1 to 3

Exercise 4.3 sum 2

Theorem 6.1 with proof

Exercise 7.1 sums 1 and 4

Exercise 8.1 sums 1,3 and 5

Theorems 10.1 and 10.2 with proof

Class 10 – Social Science

Autumn Break Holiday Homework

Instructions

- **Answer all questions in A4 size sheet .**
- **Draw maps, timelines, and charts neatly wherever asked.**
- **Submit the work on the first day after the autumn break.**

Part A – History (India and the Contemporary World – II)

Chapter: Nationalism in India

1. **Explain:**

- **Why growth of nationalism in the colonies is linked to an anti-colonial movement.**
- **How the First World War helped in the growth of the National Movement in India.**
- **Why Indians were outraged by the Rowlatt Act.**
- **Why Gandhiji decided to withdraw the Non-Cooperation Movement.**

2. **What is meant by the idea of Satyagraha?**
3. **Compare the images of Bharat Mata in this chapter with the image of Germania in Chapter 1.**

Map Work

On an outline map of India, mark the following:

- **Champaran (Bihar) – Indigo Satyagraha**
- **Ahmedabad (Gujarat) – Cotton mill workers' Satyagraha**
- **Kheda (Gujarat) – Peasant Satyagraha**
- **Amritsar (Punjab) – Jallianwala Bagh massacre**
- **Dandi (Gujarat) – Salt March route**

Activity

Prepare a timeline chart showing the important events of:

- **Non-Cooperation Movement**

- **Civil Disobedience Movement**

Part B – Geography (Contemporary India – II)

Chapter: Resources and Development

1 Answer the following questions in about 30 words:

(i) Name three states having black soil and the crop which is mainly grown in it.

(ii) What type of soil is found in the river deltas of the eastern coast? Give three main features of this type of soil.

(iii) What steps can be taken to control soil erosion in hilly areas?

(iv) What are biotic and abiotic resources? Give examples.

2 Answer the following questions in about 120 words:

(i) Explain land use pattern in India and why has the land under forest not increased much since 1960–61?

Map Work

On the political map of India, show:

- **Major soil types (Alluvial, Black, Red, Laterite, Arid, Mountain)**
- **Two dams built on river Mahanadi and Satluj**

Part C – Political Science (Democratic Politics – II)

Chapter: Federalism

1. Locate the following states on a political map of India:

- **Kerala**
- **Jharkhand**
- **Arunachal Pradesh**
- **Mizoram**

2. Identify and shade three federal countries (other than India) on a blank outline political map of the world..

3 What is the main difference between a federal form of government and a unitary one? Explain with examples.

4 State any two differences between the local government before and after the Constitutional amendment in 1992.

Part D – Economics (Understanding Economic Development)

Chapter: Development

1 What is the main criterion used by the World Bank in classifying different countries? What are the limitations of this criterion, if any?

2. In what respects is the criterion used by the UNDP for measuring development different from the one used by the World Bank?.

3 Kerala, with lower per capita income, has a better human development ranking than Punjab. Hence, per capita income is not a useful criterion at all and should not be used to compare states. Do you agree? Discuss.

Part E – Integrated Project Work

1. Prepare a poster on "Sustainable Development" highlighting balance between economy, society, and environment.

Note: This homework carries marks for completeness, creativity, and neatness.

Reminder: Students who have not submitted their Portfolio or Consumer Project must complete and submit it after the holidays.

English

India Land of all Seasons . Make a poster.

Ram Sethu - Write an article

Atithi devo bhav mind mapping

Do you think Tourism and travel is important for a country. Write an essay.

Do all the holiday home work in A4 size sheet.

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KENDRIYA VIDYALAYA SANGATHAN, CHENNAI REGION

HALF YEARLY EXAMINATION 2024-25

Class-XI Sub: Chemistry (Theory)

Max. Marks: 70 Time: 3 hours

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GENERAL INSTRUCTIONS:

Read the following instructions carefully.

(a) There are 33 questions in this question paper with internal choice.

(b) SECTION A consists of 16 multiple-choice questions carrying 1 mark each.

(c) SECTION B consists of 5 short answer questions carrying 2 marks each.

(d) SECTION C consists of 7 short answer questions carrying 3 marks each.

(e) SECTION D consists of 2 case-based questions carrying 4 marks each.

(f) SECTION E consists of 3 long answer questions carrying 5 marks each.

(g) All questions are compulsory.

(h) Use of log tables and calculators is not allowed.

SECTION A

The following questions are multiple-choice questions with one correct answer. Each question carries 1 mark. There is no internal choice in this section.

1. Which among the following has highest number of atoms?

(a) 1 g of N2 (c) 1 g of Ar (b) 1 g of Ca

(d) 1 g of Fe

[Atomic mass of N = 14 u, Ca = 40 u, Ar = 39.9 u, Fe = 56 u]

2. The molarity of NaOH in the solution prepared by dissolving 4g of it in enough water to form 250 ml of solution is

(a) 0.2 M (c) 0.4 M (b) 0.1 M

(d) 0.8 M

[Molar mass of NaOH = 40 g mol-1]

3. Maximum number of unpaired electrons in Chromium (Z=24) are

(a) 4 (b) 5

(c) 6 (d) 7

4. The orbital with n=4 and l= 3 is

(a) 4s (b) 4p

(c) 4d (d) 4f

5. Acidity of BF_3 can be explained on the basis of which of the following concepts?

(a) Arrhenius concept (b) Bronsted Lowry concept

(c) Lewis concept (d) Bronsted Lowry as well as Lewis concept.

6. The general electronic configuration of the outermost shells of d-block elements is

(a) (n-1) d1-10ns1-2 (b) (n-1) d1-10ns1 (c) (n-1) d1-9ns2 (d) (n-1) d1-10ns2

7. In the modern periodic table, the period number indicates the value of:

(a) atomic number (b) atomic mass

(c) highest principal quantum number (d) azimuthal quantum number.

8. The bond order of O_2^+ is

(a) 1 (b) 1.5

(c) 2 (d) 2.5

9. The bond angles of NH_3 and H_2O molecules respectively are

(a) 109.5º and 104º (c) 104º and 107.5º (b) 107º and 104.5º

(d) 120º and 110º

10. In a process, 701 J of heat is absorbed by a system and 394 J of work is done by the system.

What is the change in internal energy for the process?

(a) +307 J (b) 701 J

(c) 0 J (d) -307 J

11. The correct order of entropy of the substance in different states is

(a) solid >liquid > gas (b) solid <liquid < gas

(c) gas > solid > liquid (d) solid >gas> liquid

12. The enthalpies of all elements in their standard states are:

(a) unity (b) zero

(c) < 0 (d) different for each element

13. In the following question, a statement of assertion followed by statement of a reason is given. Choose the correct answer out of the following choices.

Assertion (A): Combustion of all organic compounds is an exothermic reaction.

Reason (R): The enthalpies of all elements in their standard state are zero.

(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

14. In the following question, a statement of assertion followed by statement of a reason is given. Choose the correct answer out of the following choices.

Assertion (A): A solution containing a mixture of acetic acid and sodium acetate maintains a constant value of pH on addition of small amounts of acid or alkali.

Reason (R): A solution containing a mixture of acetic acid and sodium acetate acts as a buffer solution

(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

15. In the following question, a statement of assertion followed by statement of a reason is given.

Choose the correct answer out of the following choices.

Assertion (A): Generally, ionization enthalpy increases from left to right in a period.

Reason (R): As we move from left to right, effective nuclear attraction decreases.

(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

16. In the following question, a statement of assertion followed by statement of a reason is given.

Choose the correct answer out of the following choices.

Assertion: In the triatomic CO_2 (carbon dioxide) molecule, the dipole moment is zero

Reason: The dipole moment of C=O in CO_2 bond on one side of the molecule gets cancelled by that on the other side of the molecule.

(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

What is the enthalpy of formation of NH_3 gas?

SECTION B

This section contains 5 questions with internal choice in one question. The following questions are very short answer type and carry 2 marks each.

17. (a) Write Hess' law of constant heat summation

(b) Given $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$ $\Delta_r H^0 = -92.4$ kJ mol-1

.

(OR)

17. For the reaction 2Cl(g) → Cl2(g) what are the signs of ΔH and ΔS?

18. Write (a) Heisenberg's Uncertainty Principle (b) Aufbau Principle

19. Among the elements of the third period Na to Ar, pick out the element:

(i) with highest first ionization enthalpy (ii) with largest atomic radius

(iii) which is the most reactive non-metal (iv) which is the most reactive metal.

20. Calculate the number of protons, neutrons and electrons in 35Br80

.

21. H2O and NH3 can act both as Bronsted acids and bases. For each case give corresponding conjugate acid and base.

SECTION C

This section contains 7 questions with internal choice in one question. The following questions are short answer type and carry 3 marks each.

22. (a) Write the law of conservation of mass.

(b) Which is the limiting reagent when 14 g of nitrogen reacts with 6 g of hydrogen to form Ammonia as per the reaction N2 + 3H2 → 2NH3? (Atomic mass of N is 14 u and that of H is 1u)

(c) How are 0.5 mole NaOH and 0.5 M NaOH different? (Atomic mass of Na=23 u, O=16u ,H=1u)

23. Compute the molecular mass of C6H6 and the percentage composition of elements present in the same (Atomic mass of C is 12u and that of H is 1u)

24. Write the shape of the following molecules using the VSEPR model:

BeCl2, BCl3, SiCl4, PCl5, H2S, PH3

(OR)

24. (a) Define hydrogen bond. (b) Is it weaker or stronger than the van der Waals' forces?

(c)Name a compound which has hydrogen bond.

25. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is 98.96 g/mol. What are its empirical and molecular formulas? (Atomic mass of C=12u, Cl=35.5u,

H=1u)

26. Calculate the wavelength, frequency and wave number of a light wave whose period is 2.0 × 10–10s (speed of light wave = 3x108 m s-1)

27. During combustion of one mole benzene, H_2O and CO_2 are produced and 3267.0 kJ of heat is liberated. Calculate the standard enthalpy of formation, $\Delta_f H^0$ of benzene. Standard enthalpies of formation of $CO_2(g)$ and $H_2O(l)$ are –393.5 kJ mol–1 and – 285.83 kJ mol –1 respectively.

28. (a) Write the expression for K_c for the reaction $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$

(b) What is K_c for the equilibrium : $PCl_5 \rightleftharpoons PCl_3 + Cl_2$ if the equilibrium concentration of $[PCl_3]$=1.6 M, $[Cl_2]$=1.4 M and $[PCl_5]$=1.6 M.

SECTION D

The following questions are case-based questions. Each question has an internal choice and carries 4 (2+1+1) marks each. Read the passage carefully and answer the questions that follow.

29. The periodic table, also known as the periodic table of the elements, is an ordered arrangement of the chemical elements into rows ("periods") and columns ("groups"). It is an icon of chemistry and is widely used in physics and other sciences. It is a depiction of the periodic law, which states that when the elements are arranged in order of their atomic numbers an approximate recurrence of their properties is evident. The table is divided into four rough rectangular areas called blocks. Elements in the same group tend to show similar chemical characteristics. Vertical, horizontal and diagonal trends characterize the periodic table. Metallic character increases going down a group and from right to left across a period. Non-metallic character increases going from the bottom left of the periodic table to the top right.

(a) Which is the most electronegative element in the periodic table?

(OR)

(a) Select the isoelectronic species from the following: N^{2-}, O^{2-}, Na, Mg^{2+}

(b) Why is cation smaller than its parent atom?

(c) Give the name of the element (i) which shows resemblance of alkali metals and halogens?

(ii) Write the IUPAC name of the element with Z = 102?

30. The pH scale is a measure of the acidity or alkalinity of a solution. It ranges from 0 to 14, with 7 being considered neutral. A pH value below 7 indicates acidity, while a pH value above 7 indicates alkaline nature. Solutions with a pH less than 7 are considered acidic. A pH of 7 is considered neutral. Pure water has a pH of 7. Solutions with a pH greater than 7 are considered alkaline or basic. Ka and Kb represent the strength of an acid and a base respectively.

Answer the following questions:

(i) The pH is given by the formula (a) –log10[H+] (b) –log10[OH-]

(c) +log10[H+] (d) + log aH+

(1 mark)

(ii) Write the relation between pH, pKw and pOH (iii) The concentration of hydrogen ion in a sample of soft drink is 3.8×10–3 M. What is its pH?

(Given log 3.8 = 0.58) (1 mark)

(2 marks)

(OR)

The pKa of acetic acid and pKb of NH4OH are 4.76 and 4.75 respectively. Calculate the pH of ammonium acetate solution. (2 marks)

SECTION E

The following questions are long answer types and carry 5 marks each. All questions have an internal choice.

31. (a) Indicate the number of unpaired electrons in : (i) P, (ii) Si, (iii) Cu, (iv) Fe

(Atomic number of P=15, Si=14, Cu=29, Fe=26)

(b) Which series of lines of the hydrogen spectrum lies in the visible region?

(c) How many electrons will be present in the sub-shells having ms value of ½ for n = 4 ?

(d) Among 2s and 3s, which orbital will experience the larger effective nuclear charge?

(OR)

(a) State Hund's rule of maximum multiplicity

(b) Apply Hund's rule to write the electronic configuration (box notation) of nitrogen.

(c) What are the frequency and wavelength of a photon emitted during a transition from n = 5 state to the n = 2 state in the hydrogen atom?

(Given: h=6.626 x 10-34Js) (Speed of light wave = 3x108m s-1)

32. (b)Use molecular orbital theory to explain why the He2 molecule does not exist.

(c)What is the total number of sigma and pi bonds in the following molecules? (a) C2H2 (b) C2H4

(OR)

(a) Define electronegativity. How does it differ from electron gain enthalpy?

(b) How do you express the bond strength in terms of bond order?

(c) Explain hybridisation in SF6 using Valence Bond Theory.

33. (i) For the reaction at 298 K:

(a)Which out of NH3 and NF3 has higher dipole moment and why?

2A + B → C ; ΔH = 400 kJ mol-1, ΔS = 0.2 kJ mol-1 K-1

At what temperature will the reaction become spontaneous considering ΔH and ΔS to be constant over the temperature range?

(ii) State the first law of thermodynamics.

(iii) Give one point to differentiate the following thermodynamic terms:

(a) Extensive properties and intensive properties,

(b) Isothermal process and isobaric process.

(OR)

(i) Derive the mathematical expression for the first law of thermodynamics.

(ii) q and w are not state functions, but their sum

is a state function. Why?

PM SHRI KENDRIYA VIDYALAYA BOWENPALLY

HOLIDAY HOME WORK

ENGLISH

CLASS XII

1. Complete your investigatory/Art-integrated Projects
2. Prepare a thematic chart on any lesson: Stoty through pictures and drawings
3. Read any self-help book/novel and write a book review (150 words).
4. Practice questions and answers of completed chapters and Reading Passages
5. Practice Listening and Speaking topics
6. Practice Writing section questions and topics.

HOLIDY HOME WORK- Autumn Break-2025

CLASS : XI

HOLIDY HOME WORK- Autumn Break-2025

CLASS : XI SUBJECT: BIOLOGY

1.Complete Investigatory Project on the selected topic. Follow the steps explained in the class. Steps - Investigatory Project

Title, Certificate, Acknowledgement, Index, Introduction, Aim/Objective, Content (all steps), Conclusion, Bibliography.

2. Complete Record -Spotters and three experiments.
3. Make Mind map of lesson Cell Structure and Function.

.

HOLIDY HOME WORK- Autumn Break-2025

CLASS : XI SUBJECT: BIOLOGY

1.Complete Investigatory Project on the selected topic. Follow the steps explained in the class. Steps - Investigatory Project

HOLIDY HOME WORK- Autumn Break-2025

CLASS : XI SUBJECT: CHEMISTRY

1.Exercise questions of Chapter Thermodynamics

2. Complete Chemistry Record

3. Make project file on the Topic assigned

क्षा 11 �हंदी: आरोह भाग-1, �वतान, अ�भव्यिक्त एवं माध्यम

(10 �दन Autumn Break Homework)

आरोह भाग-1 (Aaroh Bhag-1)

प्रश्न 1. �दए गए क�वताओं पर भावाथ� अपने शब्दों में �ल�खए।

1.

"हम तौ एक एक क�र जांनां,

"

2.

"मेरे तो �गरधर गोपाल,

" आ�द का भावाथ� 4-5 वाक्यों में �ल�खए।

प्रश्न 2.

"घर की याद" और "चंपा काले-काले" में क�व क े मनोभावों को संक्षेप में(6-7 वाक्य में) �ल�खए।

�वतान भाग-1 (Vitaan Bhag-1)

प्रश्न 3.

"नमक का दारोगा" और "�मयाँ नसीरुद्दीन" इस पाठ का सारांश अपने शब्दों में �ल�खए ।

प्रश्न 4.

"अपू क े साथ ढाई साल" इस कहानी क े आधार पर बताया �क �फल्म बनते समय �कन – �कन समस्याओं का सामना करना पड़ा ?

अ�भव्यिक्त एवं माध्यम

प्रश्न 5. पत्र लेखन अभ्यास: �कसी �मत्र को छ ु ट्ट्यों में �कए गए काय़ का ववरण देते हुए एक पत्र ल़ि

Maths Homework

PM SHRI KENDRIYA VIDYALAYA BOWENPALLY

AUTMN BREAK (2025-26) HOMEWORK

CLASS: XI SUBJECT : MATHEMATICS

INSTRUCTIONS: Do all these questions in a separate file (A-4 sheets)

SETS

1. For A = {1, 2, 3, 4, 5, 6}; B = {3, 4, 5, 6}, C = {4, 5, 7, 8} and U = {1, 2, ----------,8}

Find (a) (A – B) / ,(b)

2. For A = {1, 2, 3, 4, 5, 6}; B = {3, 4, 5, 6}, C = {4, 5, 7, 8} and U = {1, 2, ----------,8}

Verify that (1) ;

(2)

3. For A = {1, 2, 3, 4, 5, 6}; B = {3, 4, 5, 6}, C = {4, 5, 7, 8} and U = {1, 2, ----------,8}

Verify that (1) A- (B) = (A- B) (A - C)

(2) A(B- C) = (AB)- (AC)

RELATIONS AND FUNCTIONS

1. If , and verify that

(i) = (ii) =

2. If , and find

3. If , and , find

4. 7.If , then find

5. Find domain and range of following functions:

a) b) c) d)

e) f)

TRIGONOMETRY CLASS XI

Learn all trigonometry formulae

COMPLEX NUMBERS

1) i49 + i 68 + i89 + i110

2) i37 + i-67

3) 1 + i10 + i20 + i30

4) 2 i2 + 6 i3 + 3i16 – 6 i19 + 4 i 25 + 4

5) Show that in + i n + 1 + i n+2+ i n + 3 = 0

6) Show that (- i) 4 n + 3 = i

Express in standard form

7)

8)

9)

10)

11) Find x and y in the following case

3 x + (2x – 3 y) i = 6 + 3 i

12) Find x and y in the following case

13) (x+ i).(x + iy) = 2 - 5i

14) Find x and y in the following case

15) Find the conjugate and the modulus of the followings

a) (3 - 2i).(3 + 2i)(1 + i)b) (2 + 3 i)2

16) If conjugate of is , find

17) If conjugate of is , find

18) If , find a and b

19) Find the least value of n if

20) If z1= 2 +3i and z 2 = - 1 + 3i, then find Im

LINEAR INEQUALITIES

Solve for x from Q No 1 to 9

1.

2. $2(2x + 3) - 10 < 6(x - 2)$

3. $3(2 - x) \geq 2(1 - x)$

4. $37 - (3x + 5) > 9x - 8(x - 3)5.$

6. $-3 - 3x + 2 < 4,$

7.

8.

9. Solve the system of inequalities

$3x - 7 < 5 + x$ and $11 - 5x \leq 1$ and represent the solutions on the number line

10. A manufacturer has 600 litres of a 12% solution of acid. How many litres of a 30% acid solution must be added to it so that acid content in the resulting mixture will be more than 15% but less than 18%?

Physics

KENDRIYA VIDYALAYA BOWENPALLY

Class XI Physics Autumn Break Homework 2025-26

Conceptual Questions:

1. Why is physics considered a fundamental science?

2. Explain the difference between accuracy and precision with an example.

3. Can a body have zero velocity and still be accelerating? Explain.

4. Differentiate between scalar and vector quantities with examples

5. Why does a passenger move forward when a bus suddenly stops?

6. What is the role of friction in walking?

7. Can work done be negative? Give an example.

8. Explain the principle of conservation of energy with an example.

9. Why is the center of mass of a spinning wheel important in vehicles?

10. Explain conservation of linear momentum with an example.

11. What would happen to your weight on the Moon? Why?

12. Why is gnot the same everywhere on Earth?

Numericals:

1. A car accelerates uniformly from rest and reaches a speed of 20 m/s in 5 seconds. Find the acceleration and distance covered.

2. A ball is thrown vertically upward with a speed of 25 m/s. How long will it take to return to the same point?

3. A block of mass 5 kg is resting on a horizontal surface. If a force of 20 N is applied and the coefficient of friction is 0.4, will the block move?

4. A body of mass 2 kg falls freely from a height of 10 m. Find its kinetic energy just before hitting the ground.

5. Calculate the power of an elevator lifting 500 kg to a height of 20 m in 10 seconds.

6. Two bodies of masses 4 kg and 6 kg are placed at 1 m and 3 m from a reference point. Find the position of center of mass.

7. Calculate the gravitational force between two masses of 10 kg each placed 2 meters apart.

8. Find the value of g at a height of 1000 km above Earth’s surface.

Derivations:

* Derive the equations of motion using calculus.

* Derive the expression for acceleration of two masses connected by a light string over a frictionless pulley.

* Derive the work-energy theorem.

* Derive expression for potential energy stored in a spring.

* Derive the formula for torque: $\tau = r \times F$

Real-life Application:

* Discuss how Newton's Third Law applies when a rocket is launched.

* Explain how kinematics helps in determining vehicle accident reconstruction.

* Complete the Physics record of 6 Experiments and 3 Activities

PM Shri KENDRIYA VIDYALAYA B OWENPALLY

AUTMN BREAK (2025-26) HOMEWORK

CLASS: XII **SUBJECT : MATHEMATICS**

INSTRUCTIONS: Do all these questions in a separate file (A-4 sheets)

CONTINUITY AND DIFFRENTIABILITY

1. For what value of k is the following function continuous at x = 2 ?

$$f(x) = \begin{cases} 2x+1\,;\, x<2 \\ k\,;\, x=2 \\ 3x-1\,;\, x>2 \end{cases}$$

2. If $f(x) = \begin{cases} 3ax+b, & \text{if } x>1 \\ 11 & \text{if } x=1 \\ 5ax-2b, & \text{if } x<1 \end{cases}$, continuous at x = 1, find the values of a and b.

3. If $x = a\left(\cos\theta + \log\tan\frac{\theta}{2}\right)$ and $y = a\sin\theta$ find $\frac{dy}{dx}$ at $\theta = \frac{\pi}{4}$.

5. If $y = (\log x)^{\cos x} + \frac{x^2+1}{x^2-1}$, find $\frac{dy}{dx}$.

6. Find $\frac{dy}{dx}$ if $(\cos x)^y = (\cos y)^x$

APPLICATIONS OF DERIVATIVES

1) Find the point on the curve $y^2 = 8x$ for which the abscissa and ordinate change at the same rate?
2) A ladder 5m long is leaning against a wall. Bottom of ladder is pulled along the ground away from wall at the rate of 2m/s. How fast is the height on the wall decreasing when the foot of ladder is 4m away from the wall?
3) A particle moves along the curve $6y = x^3 + 2$., Find the points on the curve at which y-coordinate is changing 8 times as fast as the x-coordinate.
4) Find the intervals in which the function $f(x) = \sin x - \cos x$, $0 < x < 2\pi$ is increasing or decreasing.
5) Find the interval in which the function $f(x)=2x^3+9x^2+12x+20$ is (i) increasing (ii) decreasing
6) Length of three sides of a trapezium other than base is equal to 10cm each, then find the area of the trapezium when it is maximum ?
7) Find the point on the curve $y^2 = 2x$ which is at minimum distance from the point (1,4)

8) A window is in the shape of a rectangle surmounted by an equilateral triangle. If the perimeter of the window is 12 m, find the dimensions of the rectangle that will produce the largest area of the window.

DEFINITE INTEGRALS

1. $\int_0^{\pi/2} \frac{\sqrt{\tan x}}{1+\sqrt{\tan x}}\,dx$

2. $\int_1^3 \frac{\sqrt{4-x}}{\sqrt{x}+\sqrt{4-x}}\,dx$

3. $\int_0^{\pi/2} \frac{\sin^4 x}{\sin^4 x+\cos^4 x}\,dx$

4. $\int_0^{\pi} \frac{x\sin x}{1+\cos^2 x}\,dx$

5. $\int_{\pi/6}^{\pi/3} \frac{dx}{1+\sqrt{\tan x}}$

6. $\int_0^{\pi} \frac{x}{1+\sin x}\,dx$

7 $\int_0^{\pi/4} \log(1+\tan x)\,dx$

18. $\int_2^5 (|x-2|+|x-3|+|x-4|)\,dx$

APPLICATIONS OF INTEGRATION

Q1. Find the area enclosed by curve $4x^2 + 9y^2 = 36$

Q2. The area of the region bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$ is

Q3. The area enclosed between the graph of $y = x^3$ and the lines $x = 0$, $y = 1$, $y = 8$ is

Q4. The area enclosed by the circle $x^2+y^2 = 2$ is equal to

PHYSICS HOLIDAY HOMEWORK – AUTOMN BREAK-2025

Part A: Derivations (Any 3)

1. Derive an expression for the capacitance of a parallel plate capacitor with dielectric.
2. Derive the expression for drift velocity of electrons in a conductor and hence obtain Ohm's law.
3. Derive an expression for the force between two long parallel current-carrying conductors.
4. Derive the expression for Impedance and Phase difference in an LCR series circuit and obtain expression for Resonance frequency.

Part B: Numericals (Solve any 8)

1. A cell of emf 2 V and internal resistance 0.1 Ω is connected across a 3 Ω resistor. Find the current through the circuit and terminal voltage of the cell.
2. A capacitor of 6 μF is charged to 200 V. Find the energy stored and the charge on the plates.
3. A coil of resistance 10 Ω and inductance 0.5 H is connected to an AC source of 200 V, 50 Hz. Calculate current and power factor.
4. The magnetic field at the center of a circular coil of 50 turns, radius 10 cm, carrying 5 A current is to be found. Calculate B.
5. Calculate the velocity of an electron accelerated through a potential difference of 5 kV.
6. A convex lens of focal length 20 cm is used to form an image at infinity. Where should the object be placed?
7. The half-life of a radioactive element is 30 days. How much of a 16 g sample will remain after 90 days?
8. An alternating emf of 220 V is applied across a pure resistor of 110 Ω. Find the maximum current and power dissipated.
9. A potentiometer wire is 4 m long and has a resistance of 4 Ω. It is connected in series with a resistance of 6 Ω and a cell of emf 2 V. Calculate the potential gradient along the wire.
10. An electron moves in a circular orbit of radius 0.5 Å around the nucleus with a velocity of 2.2×10^6 m/s. Calculate the equivalent current and magnetic moment.

Part C: Conceptual Questions (Any 5)

1. Why is the sky blue? Relate your answer to scattering of light.
2. Why is it easier to transmit electricity at high voltage but low current?
3. Explain why alternating current is preferred over direct current for power transmission.
4. Why are infra-red radiations used in remote controls and not ultraviolet rays?
5. Why are magnetic field lines continuous and have no free ends?
6. Explain why nuclear fusion cannot take place at room temperature.
7. Why do transformers not work with DC supply?

Part D

Complete the Physics record of 4 Experiments and 3 Activities and also the Project report of allotted Project

CHEMISTRY

1.Exercise questions from Chapter Amines.
2.Completion of Investigatory Project.
3.Last 5 years Board Question papers
4.Practice Name reactions
5.SN1and SN2 Mechanisms
6.Distinguish Test
7.Conversions in Organic Chemistry.

CLASS XII English HHW

1. Complete your investigatory/Art-integrated Projects
2. Prepare a thematic chart on any lesson: Stoty through pictures and drawings
3. Read any self-help book/novel and write a book review (150 words).
4. Practice questions and answers of completed chapters and Reading Passages
5. Practice Listening and Speaking topics
6. Practice Writing section questions and topics.

HOLIDY HOME WORK- Autumn Break -2025

CLASS :XII **SUBJECT: BIOLOGY**

1.Make Mind maps of Biotechnology Principles and Processes, Biotechnology-Applications, Organisms and Population on A/4 papers and prepare for test.

II. Write answers of the following in HW book and prepare for TEST.

1) Explain the role(s) of the following in biotechnology
(i) Restriction endonuclease ii) Gel-electrophoresis (iii) Selectable markers in pBR322

2) State the functions of the following in the cloning vector pBR322
(i) ori (ii) rop and (iii) Hind III sites

3) Draw a schematic diagram of the E. coli cloning vector pBR322 and mark;
(i) ori (ii) rop (iii) Ampicillin resistance gene(iv) Tetracycline resistance gene
(v) Restriction site Bam HI (vi) Restriction site Eco RI

4) Explain steps involved in polymerase chain reaction (PCR).

III. Draw Simple stirred and Sparged stirred-tank bioreactor and label. Write applications.

IV. Show diagrammatic Representation of rDNA technology

V. Mention the chemical change that proinsulin undergoes, to be able to act as mature insulin. Draw diagram.

VI-Prepare for October Month Exam. Submit Practice work.

कक्षा 12 हिंदी

आरोह भाग-2, वितान, अभिव्यक्ति एवं माध्यम
Autumn Break (10 दिन) गृहकार्य

आरोह भाग-2 (काव्य एवं गद्य)
पाठ 1: "आत्मपरिचय" कविता का भावार्थ अपने शब्दों में लिखिए।
पाठ 2: "पतंग" कविता का सारांश 5-6 वाक्य में लिखिए।
पाठ 3: "कैमरे में बंद अपाहिज" इस कविता के माध्यम से कवि मीडिया पर क्या व्यंग्य करते है ?
पाठ 4: "उषा" कविता का भावार्थ और प्रमुख विचार अपने शब्दों में लिखें।

पाठ 5 : "सिल्वर वेडिंग" इस पाठ का नायक कौन है ? उनके जीवन पर किसका प्रभाव पड़ा और कैसे ?
पाठ 6. "पहलवान की ढोलक" कहानी पढ़कर यह बताइए कि ढोलक ही पहलवान का गुरु है कैसे ?

अभिव्यक्ति एवं माध्यम (लेखन कौशल)

प्रश्न 7. एक औपचारिक पत्र नगर निगम के अधिकारी को लिखिए जिसमें "शहर में हो रहे पर्यावरण प्रदूषण से संरक्षण के लिए सुझाव हो " पर लिखिए।