SD DAV PUBLIC SCHOOL, JAMTARA
Summer Vacation Assignment (2025-26)
Class: - XII

SUBJECT: ENGLISH

Holiday Homework – Class XII (English Core)

Total: 10 Questions + 1 Project Work
Instructions: Answer all questions in your notebook. Ensure answers are analytical, well-structured, and based on textual evidence.

Section A: Literature – Prose

1. **The Last Lesson**
   Franz was upset for not learning his lessons, but the villagers were more disturbed. Discuss the symbolic value of M. Hamel's last lesson in the context of language and identity.
2. **Lost Spring**
   "Saheb and Mukesh are victims of a society that forces children to live a life of exploitation." Critically analyze the role of social structures in perpetuating child labor.
3. **The Third Level**
   What does Charley's discovery of the third level represent? Analyze it as a psychological escape in the post-war American context.

Section B: Literature – Poetry

4. **My Mother at Sixty-Six**
   "...and felt that old familiar ache..."
   Explain the ache in the context of human mortality. How does the poet use imagery to express fear of separation?
5. **Keeping Quiet**
   How is "Keeping Quiet" not just a poem, but also a political and philosophical call for global introspection and peace? Discuss in depth.

Section C: Mixed Literary Analysis

6. Compare and contrast the themes of alienation and escapism in *The Third Level* and *My Mother at Sixty-Six*.
7. How do the poets and authors use **irony** in *Lost Spring* and *Keeping Quiet* to make powerful social commentary?
8. Explore the use of **symbolism** in *The Last Lesson* and *The Third Level*. How does it deepen the reader's understanding of the narrative?
9. 'Silence speaks louder than words.' Relate this idea to *Keeping Quiet* and *The Last Lesson* with critical insight.
10. Create a **character diary entry** from the perspective of any one central character (Franz, Saheb, Charley, or the speaker in *My Mother at Sixty-Six*), focusing on an emotionally intense moment. Use first-person narrative and introspection.

Project Work (as per CBSE guidelines)

Project Topic:
"Voices of Resistance: Exploring Suppressed Identities through CBSE Class XII English Texts"

Objective:
To explore how characters across the syllabus confront systems of power, cultural identity, and inner conflict.

Expected Components:

- Introduction to the theme
- Critical analysis of at least **three texts** (Prose/Poetry)
- Integration of multimedia (optional visuals, artworks, poems, maps)
- Personal reflection: What have you learned from the voices that resist or surrender?
- Bibliography and citations

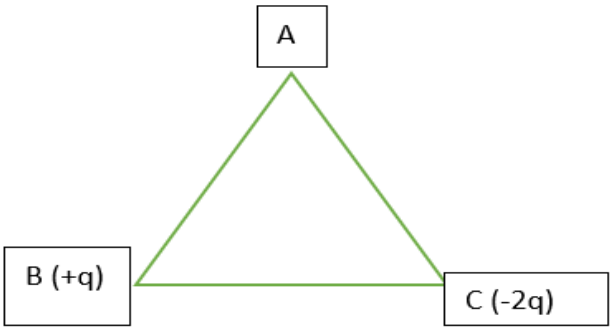
Format:
Can be presented as a file, digital presentation, scrapbook, or journal (as per teacher's instruction)

SUBJECT: PHYSICS

Q1 Derive an expression for the electric field due to an electric dipole at a point on its axial line.

Q2) Derive an expression for the electric field due to an electric dipole at a point on its equatorial line.

Q3)Find the resultant electric field and its direction at point charge placed on A. ABC is a equilateral triangle of side a



Q4) In a medium the force of attraction between two point electric charges, distance d apart is F. What distance apart should these be kept in the same medium so that the force between them becomes i) 3F ii) F/3

Q5) A charge q is placed at the centre of the line joining two equal charges Q. Show that the system of three charges will be in equilibrium if $q = -Q/4$

Q6) Explain how neutral bodies produce charges when rubbed with each other.

Q7) An electric dipole of dipole moment p is held in a uniform electric field$\vec{E}$.
(i) Prove that no translatory force acts on the dipole.
(ii) Hence prove that the torque acting on the dipole is given by pE sin θ, indicating the direction along which it acts.
(iii) How much work is required in turning the electric dipole, from the position of most stable equilibrium to the position of most unstable equilibrium?

Q8) Why must electrostatic field at the surface of a charged conductor be perpendicular to every point on it?

Q9) Draw lines of force of electric field due to a system of two equal point charges.

Q10) Why must electrostatic field at the surface of a charged conductor be normal to the surface at every point? Give reason.

PROJECT WORK :- GIVEN IN THE CLASS ACCORDING TO THE ROLL NO. (IN GROUP.)

SUBJECT: MATHEMATICS

Q1(i) If a matrix has 12 elements, what are the possible orders it can have ? What if it has 7 elements?

(ii) If a matrix has 8 elements, what are the possible orders it can have? What if it has 5 elements?

Q2. Construct a 2x3 matrix whose elements in the e^{th} row and j^{th} column is given by :-

(i) $a_{ij} = \frac{i+3j}{2}$ (i) $a_{ij} = \frac{2i+3j}{2}$ (iii) $a_{ij} = \frac{3i+j}{2}$ (iv) $a_{ij} = \frac{3i-j}{2}$

Q3. Construct a 4x3 matrix whose elements are:-

(i) $a_{ej} = 2i + \frac{e^i}{f}$ (ii) $a_{ej} = \frac{i-j}{j+j}$ (iii) $a_{ej} = i$

Q4. If

$$\begin{pmatrix} 2+3 & 2+4 & 2y-7 \\ 4x+6 & a-1 & 0 \\ b-3 & 3b & z=2c \end{pmatrix} = \begin{pmatrix} 0 & 6 & 3y-2 \\ 2x & -3 & 2c-2 \\ 2b+4 & -21 & 0 \end{pmatrix}$$

Obtain the values of a, b, c, x, y and z.

Q5. Find matrices x and y i.e.

$$2x-y = \begin{pmatrix} 6 & -6 & 0 \\ -4 & 2 & 1 \end{pmatrix} \quad \text{and } x+2y = \begin{pmatrix} 3 & 2 & 5 \\ -2 & 1 & -7 \end{pmatrix}$$

Q6. Find the value of x such that :-

$$\begin{bmatrix} 1 & 1 & x \end{bmatrix} \begin{pmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 1 & 0 \end{pmatrix} \begin{pmatrix} 1 \\ 1 \\ 1 \end{pmatrix} = 0$$

Q7. If $A = \begin{pmatrix} 3 & -4, \\ 1 & -1 \end{pmatrix}$ prove that $A^n = \begin{pmatrix} 1+2n & -4n, \\ n & 1-2n \end{pmatrix}$ where n is any positive integer.

Q8. If $A = \begin{pmatrix} 1 & 2 & 0 \\ 3 & -4 & 5 \\ 0 & -1 & 3 \end{pmatrix}$, find $A^2 - 4A + 3I3$

Q9. Express the matrix $A = \begin{pmatrix} 4 & 2 & -1 \\ 3 & 5 & 7 \\ 1 & -2 & 1 \end{pmatrix}$ as the sum of a symmetric and a skew symmetric matrix

Q10. Express the following matrices as the sum of symmetric and skew-symmetric matrices:-

(i) $A = \begin{pmatrix} 6 & 1 \\ 3 & 4 \end{pmatrix}$ (ii) $A = \begin{pmatrix} 3 & 2 & 3 \\ 4 & 5 & 3 \\ 2 & 4 & 5 \end{pmatrix}$

(iii) $A = \begin{pmatrix} 2 & 3 & -1 \\ -1 & 4 & 2 \\ 6 & 0 & 8 \end{pmatrix}$ (iv) $\begin{pmatrix} 6 & 1 & -5 \\ -2 & -5 & 4 \\ -3 & 3 & -1 \end{pmatrix}$

11. Let R be the equivalence relation on the set Z of integers given by $R = \{(a, b): 2 \text{ divides } a-b\}$. Write the equivalence class $\{0\}$.

[CBSE 2021]

12. Check if the relation R in the set R of real numbers defined as $R = \{(a, b): a < b\}$ is:
(a)symmetric;
(b)transitive

[CBSE 2020]

13. Let $R = \{x \in Z: 0 \leq x \leq 12\}$. Show that $R = \{(a,b): a,b \in A, |a-b| \text{ is divisible by } 4\}$ is an equivalence relation. Find the set of all elements related to 1. Also, write the equivalence class [2].

[CBSE 2018]

14. If $R = \{(x, y): 2x + y = 8\}$ is a relation on N, write the range of R.

[CBSE 2014]

15. Let $R = a, a^3 : a$ is a prime number less than $5\}$ be a relation. Find the range of R.

[CBSE 2014]

16. Let R be a relation defined on the set of natural numbers N as $R = \{(x, y): x \in N, y \in N \text{ and } 2x+y=24\}$. Then, find the domain and range of the relation ?.
Also, find whether ? is an equivalence relation or not.

[CBSE 2014]

17. A relation R on set $A = \{1, 2, 3, 4, 5\}$ is defined as $R = \{(x, y) : |x^2 - y^2| < 8\}$. Check whether the relation R is reflexive,symmetric and transitive.

(2024)

Long Qs (4 - 5 marks)

18. Let N be the set of all natural numbers and R be a relation on $N \times N$ defined by $(a, b)R(c, d) \Leftrightarrow ad = bc$ for all $(a, b),(c, d) \in N \times N$. Show that R is an equivalence relation on $N \times N$. Also, find the equivalence class of (2,6), i.e., [(2,6)].

[CBSE SQP 2023]

19. Given a non-empty set X, define the relation R in P(X) as follows: For $A,B \in P(X)$, $(A, B) \in R$ if $A \subset B$. Prove that R is reflexive, transitive and not symmetric.

[CBSE SQP 2022]

20. Define the relation R in the set $N \times N$ as follows: For $(a, b),(c, d) \in N \times N$, $(a, b)R(c, d)$ if $ad = bc$. Prove that R is an equivalence relation in $N \times N$.

= bc. Prove that R is an equivalence relation in N × N.

[CBSE SQP 2022]

21. Show that the relation S in the set A = [x ∈ Z : 0 ≤ X ≤ 12] given by S = [(a, b): a, b∈ Z, |a − b| is divisible by 3] is an equivalence relation.

[CBSE 2019]

22. Let N denote the set of all natural numbers and R be a relation on N × N defined by (a, b)R(c, d) if ad(b+c) = bc(a+d). Prove that ? is an equivalence relation.

[CBSE 2015]

23. Show that the relation R in the set A = {1,2,3,4,5} given by R = {(a, b): |a − b| is divisible by 2} is an equivalence relation. Write all the equivalence classes of R.

[CBSE 2015]

24. Students of a school are taken to a railway museum to learn about railway heritage and its history.

An exhibit in the museum depicted many rail lines on the track near the railway station. Let L be the set of all rail lines on the railway track and R be the relation on L defined by R = {l_2,l_2: l1 is parallel to l_2)}

On the basis of the above information, answer thefollowing questions

(i) Find whether the relation R is Symmetric or not.

(ii) Find whether the relation R is transitiveor not.

(iii) If one of the rail lines of the railway track is represented by the equations y = 3x+2, then find the set of rail lines in R related to it. (2024)

Activity 1- To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) :l perpendicular m} is symmetric but neither reflexive nor transitive.

Activity 2 To demonstrate a function which is not one- one but is onto.

SUBJECT: CHEMISTRY

Short answer questions (Type- II) (3 Marks)

1. Derive the expression for molar mass of solute in terms of boiling point elevation of solvent.
2. Explain the phenomenon of osmosis with a suitable diagram.
3. Explain with the help of vapor pressure-temperature curves for solution and solvent, why boiling point of solvent is elevated when a nonvolatile solute is dissolved into it.
4. A solution containing 3 g of solute A (M=60 g/mol) in 1L solution is isotonic with a solution containing 8.55 g of solute B in 500 mL solution. What is the molar mass of B? **(Ans:342 g/mol)**
5. The vapor pressure of a pure solvent(water) at a certain temperature is 0.0227 bar. What is the vapor pressure of a solution containing 6 g of solute (M=60 g/mol) in 50 g of solvent? **(Ans:0.02188 bar)**
6. Explain the relationship between van't Hoff factor and degree of dissociation.

Long answer questions (4 Marks)

1. What are non-ideal solutions? Explain with reasons and diagrams the positive and negative deviations from Raoult's law shown by non-ideal solutions.
2. Explain with vapor pressure-temperature curves that the freezing point of a solvent is lowered by dissolving a nonvolatile solute into it. Give a reason for such lowering of freezing of solvent.
3. Definefollowing terms a) Reverse Osmosis b) Semi permeable membrane c) Osmotic pressure d) Isotonic solution.

BIOLOGY

1.Arrange the following terms in correct developmental sequence: Pollen grain, sporogenous tissue, microspore tetrad, pollen mother cell, male gametes.

2.Why is it that the generative cell of 2-celled pollen divides in a pollen tube and not of 3-celled pollen?

3.How is it that the embryo sacs of some apomictic species look normal but contain diploid cells?

4.What is meant by emasculation? When and why does a plant breeder employ this technique?

5.Explain the role of tapetum in the formation of pollen grain walls.

6.How do self-incompatibility restrict autogamy? How does pollination occur in such plants?

7.Explain the role of pituitary and sex hormones in the process of spermatogenesis.

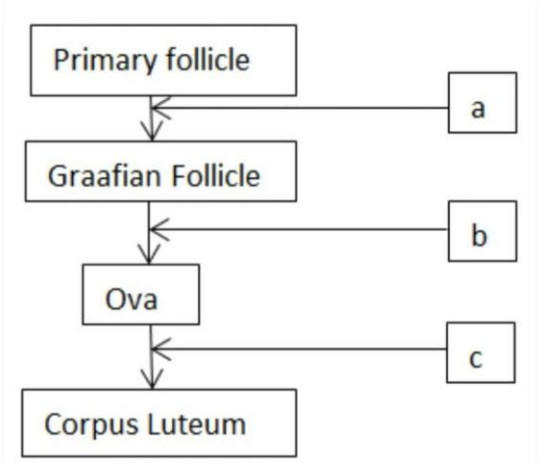
8.Explain the events in a normal woman during her menstrual cycle on the following days .

(i) Ovarian event from 13-15 days.

(ii) Ovarian hormones level from 16-23 days.

(iii) Uterine events from 24-29 days.

9.Mention the names of the hormones responsible for ovarian changes during the menstrual cycle in the boxes provided.



10.Write the pathway of sperm transportation in male reproductive system.

11.Explain the statement: “A fertile egg is the blueprint of future development.”

12.Differentiate between spermatogenesis and oogenesis.

13.How many eggs are released by a human ovary in a month? How many eggs do you think would have been released if the mother gave birth to identical twins? Would your answer change if the twins born were fraternal?

14.Why do the testes remain suspended from the scrotum outside the abdominal region?

15.What are the events that take place in the ovary and uterus during the follicular phase of the menstrual cycle?

16.Draw a well labelled diagram of T. S. of ovary, T. S. Of testis and Blastula.

SUBJECT: IP

1. " Prepare a practical file containing 20 programming with output" PDF and question numbers sent in group"
2. Write the notes of Networking sent in the group in your cw copy

SUBJECT: PHY. EDU.

Case Study Question

1.

Clubs.	Matches	Won.	Drawn.	Lost	Points
ATK Mohun Bagan.	20	10.	7.	3.	37
Bengaluru FC	20.	8	5.	7	29
Chennaiyin FC	20	. 5	5	10.	20
FC Goa.	20	4	7	9	19
Hyderabad FC.	20	11	5	4	38
Jamshedpur FC	20	13	4	3	43
Kerala Blasters FC.	20	9	7	4	34
Mumbai City FC.	20	9	4	7	31
NorthEast UFC	20	3	5	12	14
Odisha FC	20	6	5	9	23
SC East Bengal	20	1	8	11	11

a. Based on the table given above place the teams according to their ranking

b. List down two advantages of this kind of tournament

c. Write down the formula for calculating points

2. XYZ School is conducting an invitation tournament in which 25 teams have sent their entries. Matches have to be conducted on a knockout basis.

a. How many total matches will be played?

b. How many matches will be played in the first round of the tournament?

c. How many rounds will be played?

d. Which team will get 4th bye of the tournament?

Art Integration

1. Prepare a report on the Annual Sports Day of your school for publishing in a National daily.

2. Your School is hosting CBSE Regional Sports Meet. Plan and present a Folk Dance for the Opening Ceremony.