DELHI PUBLIC SCHOOL VISAKHAPATNAM
ASSIGNMENT
Half Yearly Examination Revision 2025-26

Class: XI **Date of Submission: on or before 06.09.2025**

Subject: ENGLISH

Short Answer Questions (40–50 words each)

1. What feelings does the poetess convey through the photograph of her mother?How is the passage of time highlighted in the poem?
2. How did the narrator and his family prepare for their voyage?
3. Mention two qualities of the narrator's children that helped the family during the storm?
4. Why was Tutankhamun's mummy subjected to repeated scrutiny?
5. What startling facts did the CT scan reveal about Tut's body?
6. Describe the transformation in the laburnum tree when the goldfinch arrives.
7. What is the significance of the phrase "her barred face identity mask"?
8. How does the rain describe its eternal cycle?(Voice of the rain)
9. What comparison does the poet draw between rain and music?
10. Why did the narrator decide not to take her belongings back?
11. What role does Mrs. Fitzgerald play in helping Mrs. Pearson?
12. How does the play underline the need for mutual respect in family relationships?

I. Long Answer Questions (120–150 words)

1. "The grandmother in The Portrait of a Lady was a symbol of resilience and dignity." Discuss.
2. Compare and contrast the themes of nostalgia and loss as reflected in A Photograph and The Address.
3. How does Mother's Day expose the selfishness of family members and the need for gender equality at home?

Writing Skills

I. Poster making

a.You are a member of the Social Awareness Club. Draft a poster to spread awareness on Gender Equality in society.

(Include:Catchy slogans,Messages promoting equal opportunities for men and women,Appealing layout with minimal words and maximum impact,Issuing authority)

II.Classified Advertisement

a.You want to rent out your fully furnished 2BHK flat in Delhi. Draft a suitable advertisement in not more than 50 words.

b.You have lost your school bag containing important documents. Write a "Lost & Found" classified advertisement.

III.Speech/Debate (150–200 words)

a.You are Ananya / Arjun, a student of Class XI. You have been invited to deliver a speech in the morning assembly on the topic:"Education Should Focus More on Skills than Marks." Write the speech in about 150–200 words.

(Your speech should include:A formal greeting/opening,Clear introduction of the topic,Logical arguments with suitable examples,A strong conclusion with a message.)

b.You are participating in an Inter-School Debate Competition. You are required to speak either FOR or AGAINST the motion:"Technology has Made Us Less Human."Write your debate in about 150–200 words.

(Your debate should include:A formal address to the chair/judges,Clear stand (For or Against the motion),Well-structured arguments with examples/evidence,A concluding remark)

Do as directed:

1. Rewrite in Reported Speech:

a) She said, "I am very tired today."

b) The teacher said to the students, "Complete your assignments on time."

2. Fill in the blanks with the correct form of verbs (Tenses):

a) She _____ (study) for two hours when I called her.

b) By next year, we _____ (complete) our syllabus.

c) If he _____ (work) hard, he will succeed.

Subject: MATHEMATICS

1-Decide among the following sets which sets are subsets of each another: A = {x: x ∈ R and x satisfies $x^2 - 8x + 12 = 0$}, B = {2, 4, 6}, C = {2, 4, 6, 8 ...}, D = {6}

2-If A = {a, b, c, d, e}, B = {a, c, e, g} and C = {b, e, f, g}, verify that: B ∩ C = C ∪ B

3-The function $F(x) = \frac{9x}{5} + 32$ is the formula to convert x°C to Fahrenheit units.
Find: F (-10), interpret the result in each case.
Hint: $F(-10) = \left\{\frac{9\times(-10)}{5} + 32\right\} = 14 \Rightarrow (-10)°C = 14°F$.

4-State that the given relation is a function? Give reason. If it is a function, determine its domain and range.{(2, 1), (5, 1), (8, 1), (11, 1), (14, 1), (17, 1)}

5-Find ab where $a = (\sqrt{3}+1), b = (\sqrt{3}-1)$

6-Find the value of $\sin(45^o +) - \cos(45^o - \theta)$.

7-What is the conjugate of $\frac{2-i}{(1-2i)^2}$?

8-Evaluate:$(i^{4n+1} - i^{4n-1})$.

9-Solve for x, the inequalities:$\frac{1}{|x|-3} \leq \frac{1}{2}$

10-Solve the given system of equations in R:$\left|\frac{2x-1}{x-1}\right| > 2$.

11-How many 3 -letters words can be formed using a, b, c, d, e if:
Repetition of letters is not allowed? Repetition of letters is allowed?

12-In how many ways can 5 boys and 3 girls be seated in a row so that each girl is between 2 boys?

13-Find the 4th term from the beginning and 4th term from the end in the expansion of $\left(x + \frac{2}{x}\right)^9$.

14-If the middle term of$\left(\frac{1}{x} + x\sin x\right)^{10}$ is equal to $7\frac{7}{8}$, then find the value of x.
Hint $T_6 = {}^{10}C_5 \frac{1}{x^5} \cdot x^5 \sin^5 x = \frac{63}{8} \Rightarrow \sin^5 x = \frac{1}{2^5} \quad \sin \Rightarrow x = n\pi + (-1)^n \frac{\pi}{6}$

15-If a, b, c are in AP, and a, x, b and b, y, c are in GP then show that x^2 , b^2 , y^2 are in AP.

16-Find the rational number whose decimal expansion is$0.\overline{3}$.

Subject: PHYSICS

1. Give the magnitude and direction of the net force acting on
(a) A drop of rain falling down with a constant speed,
(b) A cork of mass 10 g floating on water
(c) A kite skilfully held stationary in the sky
(d) A car moving with a constant velocity of 30 km/h on a rough road,
(e) A high-speed electron in space for from all gravitating objects, and free of electric and magnetic fields.
2. A pebble of mass 0.05 kg is throw vertically upwards. Give the direction and magnitude of the net force on the pebble
(a) During its upward motion
(b) During its downward motion
(c) At the highest point where it is momentarily at rest.
3. A constant retarding force of 50 N is applied to a body of mass 20 kg moving initially with a speed of 15m/s. How long does the body take to stop ?
4. A constant force acting on a body of mass 3kg changes its speed from 2m/s to 3.5 m/s in 25 s. The direction of motion of the force remains unchanged. What is the magnitude and the direction of the force?
5. A rocket with a lift off mass 20,000kg is blasted upwards with an initial acceleration of 5 m/s^2. Calculate the initial thrust of the blast.

Subject: CHEMISTRY

Ch-4 Chemical Bonding

1. CO_2 and SO_2 both are triatomic molecules yet there is a big difference in their dipole moment. Why?
2. Explain the structure oc carbonate ion and O_3 in terms of resonance.
3. Give shapes of ClF_3, XeF_4, AsF_5, H_2O and NH_3 using VSEPR theory.
4. AlF_3 is a high melting solid whereas SiF_4 is a gas. Explain.
5. Define hybridization. Explain the structures of C_2H_6, C_2H_4 and C_2H_2 with orbital diagrams.

6. What is the hybridization and shapes of PCl_5 and SF_6? Explain with diagrams.
7. Compare the relative stability of the species O_2^+, O_2^- and O_2^{2-} on the basis of molecular orbital theory and indicate their magnetic properties.
8. What is meant by hydrogen bond? Why HF and H_2O are liquids while HCL, H_2S are gases?
9. Covalent bonds are directional while ionic bonds are non-directional. Why?
10. Write Lewis structure of the following compounds and show formal charge on each atom: HNO_3, NO_2, H_2SO_4.
11. In both water and dimethylether, oxygen is central atom and has the same hybridization yet they have different bond angles. Why?

Ch-5 Thermodynamics

1. Differentiate:
i) Extensive and intensive properties ii) Isothermal and isobaric process
2. Calculate enthalpy of solution of NaCl if its lattice enthalpy is 788 KJ/mol. Is the process exo or endothermic?
3. If 221.4J is needed to heat 30g of ethanol from 15 to 18^0, calculate a) specific heat capacity b) molar heat capacity of ethanol. [Ans 2.46, 113 J/K/mol]
4. The combustion of benzene(l) gives CO_2 and H_2O. Given that heat of combustion at constant volume is -3263.9 kJ/mol at 25^0C, calculate heat of combustion in kj/mol at constant pressure. R=8.314.
[Ans -3267.62]
5. Calculate the maximum work obtained when 0.75 mol of an ideal gas expands isothermally and reversibly at 27^0C from a volume of 15L to 25L. [Ans -955.9 J]
6. Why is the entropy of a substance taken as zero at 0K? Calculate the standard Gibbs free energy change for the reaction $N_2+3H_2 \Leftrightarrow 2NH_3$ at 298K. The value of equilibrium constant for the above reaction is 6.6×10^5. log6.6=0.8195 [Ans -33.205kJ/mol]
7. For the gas phase reaction $H_2+Cl_2 \Leftrightarrow 2HCl$ H=-92kJ and S=-95J/K. Calculate the equilibrium constant K_P at 298K for this reaction. (Antilog $11.2166=1.646\times10^{11}$)
8. An ideal gas is allowed to expand against constant pressure of 2 bar from 10 to 50L in one step. Calculate the amount of work done by the gas. If the same expansion were carried out reversibly will the work done be higher or lower than the earlier case?1Lbar=100J. [ans more]

Assertion Reason Questions: (chapters 1 to 5)

Note: In these questions a statement of assertion and reason is given. Choose the correct option.
(a) Assertion and Reason both are correct statements and reason is correct explanation for assertion.
(b) Assertion and Reason both are correct statements but reason is not correct explanation for assertion.
(c) Assertion is correct statement but Reason is wrong statement.
(d) Assertion is wrong statement but Reason is correct statement
Now answer the following:
1. Assertion: Heat of neutralisation of HCl and NaOH is the same as that of H_2SO_4 and NaOH.
Reason: All three are strong electrolytes.
2. Assertion: Chlorine when solidifies does not have zero entropy even at absolute temperature.
Reason: Chlorine is a pungent smelling gas and it is difficult to solidify it.
3. Assertion: Covalent bonds are called directional bonds.
Reason: A covalent bond is formed by the overlap of half filled atomic orbitals which have definite directions.
4. Assertion:Among the two O-H bonds of water molecule,energy required to break both the O-H bonds is the same.
Reason: The electronic environment around O atom changes after one bond is broken.
5. Assertion: Beryllium has a smaller first ionisation enthalpy than boron.
Reason: The penetration of a 2s electron towards nucleus is more than a 2p electron, hence 2p electron is more shielded by the inner core of electrons than the 2s electron.
6. Assertion: Helium and beryllium both are chemically inert.
Reason: They have similar outer electronic configuration of the type ns^2.
7. Assertion: All types of electromagnetic radiations travel with the same velocity.
Reason: Electromagnetic radiations have dual nature.
8. Assertion: Hydrogen has only one electron in its orbit but it produces several spectral lines.
Reason: There are many excited energy levels available.
9. Assertion: Number of moles of H_2 in 0.224L of hydrogen is 0.01mol.
Reason: 22.4L of H_2 at STP contains 6.022×10^{23} mols.
10. Assertion: Combustion of 16g of methane gives 18g of water.
Reason: In the combustion of methane, water is one of the products.

Subject: BIOLOGY

1. In a cymose inflorescence, the main axis
a) has unlimited growth b) has limited growth
c) terminates in a flower d) both b and c
2. Name two plants whose ovary shows marginal placentation.
3. Differentiate between the anatomy of dorsiventral leaf and that of an isobilateral leaf.
4. Where does the ventricle pump blood into, in a frog's heart?
5. Draw a diagram of the reproductive system of a female frog and label six parts in it.
6. Match column I with column II and select the correct option.

Column I	Column II
a. Leucoplasts	1. Formation of basal bodies for cilia
b. Cytoskeleton	2. Storage of reserve food materials
c. Centriole	3. Synthesis of steroid hormone in animal cells
d. SER	4. Protection from the immediate environment
	5. Maintenance of cell shape.

7. Explain the structure of flagellum.
8. Draw a labelled diagram of fluid mosaic model of plasma membrane.
9. Explain prophase I of meiosis.
10. At what stage of mitosis does the chromosomes align at the equatorial plate?
11. List the significance of mitosis.

SUBJECT: ARTIFICIAL INTELLIGENCE

1. What is the purpose of the 'Empathize' stage in design thinking?
2. Give some examples of use case of SDGs.
3. Define 5W1H.
4. What is Capstone Project.
5. Why is iterative refinement important in design thinking?

SUBJECT: PHYSICAL EDUCATION

1. What is meant by pranayam? Explain different types of pranayams in detail.
2. What is meant by yoga? Discuss the elements of yoga.
3. What are the leadership qualities and role of a leader.