



DELHI PUBLIC SCHOOL VISAKHAPATNAM ASSIGNMENT



Annual Examination Revision 2025-26

Class: XI

Date of Submission: on or before 02.02.2026

Subject: ENGLISH

PROSE – COMPETENCY-BASED QUESTIONS

1. The Summer of the Beautiful White Horse-Aram knows stealing is wrong, yet he rides the horse. How does this situation reflect the conflict between temptation and values?
2. The Address-Why does the narrator finally decide to forget about the past possessions?
3. Mother's Day-Mrs. Pearson's transformation brings fear and respect. What does the play suggest about self-respect within a family?
4. Birth-How does Dr. Andrew Manson's struggle with the stillborn child redefine 'success' beyond textbook definitions?
5. The Tale of Melon City- How does the poem use humour and irony to criticize careless governance?
6. The Portrait of a Lady- How does the grandmother adapt herself to changing times without complaint?
7. We Are Not Afraid to Die if We Can All Be Together-How does teamwork help the family survive extreme danger?
8. Discovering Tut: The Saga Continues-Why is Tut's death still a mystery despite modern technology?
9. The Adventure-How does the story challenge our understanding of history as fixed and final?
10. Silk Road-How does the journey transform the narrator's understanding of hardship and simplicity?

POETRY – COMPETENCY-BASED QUESTIONS

11. A Photograph-How does the photograph connect memory, time, and loss?
12. The Laburnum Top- What message does the poem give about coexistence with nature?
13. The Voice of the Rain-How does the rain explain its role in sustaining life?
14. Childhood-What moment marks the poet's loss of childhood innocence?
15. Father to Son-How does lack of communication widen the gap between generations?

COMPETENCY-BASED GRAMMAR QUESTIONS

A. Gap Filling – Tenses

1. When the doctor _____ (arrive), the child _____ (already / stop) breathing.
2. The narrator _____ (travel) through Tibet when he _____ (realise) the meaning of survival.
3. By the time we _____ (reach) home, it _____ (start) raining heavily.

B. Fill in the blanks with appropriate clauses:

1. He spoke confidently _____ he was nervous inside.
2. This is the village _____ the incident took place.
3. She helped everyone _____ she expected nothing in return.

C. Transformation of Sentences

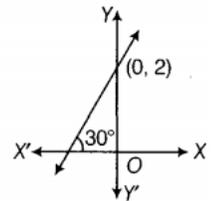
1. The family worked together and survived the storm. (Change into a complex sentence.)
2. The king was foolish. He passed careless judgments. (Combine using a relative clause.)
3. The doctor failed. He did not lose hope. (Rewrite using "though / although".)

D. Integrated Grammar

The journey was difficult, yet the travellers (1) _____ (remain) hopeful because they (2) _____ (believe) that unity (3) _____ (give) them strength.

Subject: MATHEMATICS

- If $A = \{(x, y) : y = \frac{1}{x}, 0 \neq x \in \mathbb{R}\}$ and $B = \{(x, y) : y = -x, x \in \mathbb{R}\}$, then write $A \cap B$.
- Let $f : \mathbb{R} \rightarrow \mathbb{R} : f(x) = x^2$ and $g : \mathbb{C} \rightarrow \mathbb{C} : g(x) = x^2$, where \mathbb{C} is the set of all complex numbers. Show that $f \neq g$
- Prove that: $\cos \frac{\pi}{7} \cos \frac{2\pi}{7} \cos \frac{4\pi}{7} = -\frac{1}{8}$.
- Two complex numbers $Z_1 = a + ib$ and $Z_2 = c + id$ are said to be equal, if $a = c$ and $b = d$.
- Solve: $3x^2 + 5 = 7x$.
- Solve $24x < 100$ when
 - x is a natural number
 - x is an integer
- Solve system of linear in equation: $5x - 7 < (x + 3)$ and $\frac{-3x}{2} \geq x - 5$
- In how many ways can a vowel, a consonant and a digit be chosen out of the 26 letters of the English alphabet and the 10 digits?
- From a committee of 8 persons in how many ways can we choose a chairman and a vice chairman assuming one person cannot hold more than one position?
- Find the term independent of x in the expansion of $(2x - \frac{1}{x})^{10}$.
- Show that the ratio of the sum of first n terms of a G. P. to the sum of terms from $(n + 1)^{\text{th}}$ to $(2n)^{\text{th}}$ term is $\frac{1}{r^n}$.
- Find the equation of the perpendicular bisector of the line segment joining the points $(1, 1)$ and $(2, 3)$.
- Obtain the equations of the lines passing through the intersection of lines $4x - 3y - 1 = 0$ and $2x - 5y + 3 = 0$ and equally inclined to the axes.
- Find the equation of line intersecting the Y - axis at a distance of 2 units above the origin and making an angle of 30° with the positive direction of the X - axis.
- If the minor axis of an ellipse subtends an equilateral triangle with vertex at one end of major axis, then write the eccentricity of the ellipse.
- Find the distance between the points $P (- 2, 4, 1)$ and $Q (1, 2, - 5)$.
- Evaluate: $\lim_{x \rightarrow 1} \frac{1 - \frac{1}{x}}{\sin \pi(x-1)}$.
- Evaluate $\lim_{x \rightarrow 0} \frac{(\cot 2x - \operatorname{cosec} 2x)}{x}$
- Differentiate the function $:(2x + 3) (3x - 5)$
- Calculate the mean deviation about the median of the observations: 22, 24, 30, 27, 29, 31, 25, 28, 41, 42.
- Five cards are drawn from a pack of 52 cards. What is the chance that these 5 will contain just one ace.



Subject: PHYSICS

- If $x = ar + bt^2$, where x is in meters and t in hours, what will be the units of a and b ?
- A car covers the first half of the distance between two places at a speed of 40 kmph and the second half at 60 kmph. What is the average speed of the car?
- The greatest height to which a man can throw a stone is h . What will be the greatest distance upto which he can throw the stone?
- The coefficient of friction between the ground and the wheels of a car moving on a horizontal road is 0.5. if the car starts from rest, what is the minimum distance in which it can acquire a speed of 72 kmph? Take $g = 10\text{m/s}^2$
- (a) Show that coefficient of restitution for one dimensional elastic collision is equal to one.
(b) A 10 kg ball and 20 kg ball approach each other with velocities 20m/s and 10 m/s respectively. What are their velocities after collision if the collision is perfectly elastic?

- A flywheel of mass 25 kg has a radius of 0.2 m. It is making 240 r.p.m. what is the torque necessary to bring it to rest in 20 s ? If the torque is due to a force applied tangentially on the rim of the flywheel, what is the magnitude of the force?
- Find the potential energy of a system of four particles, each of mass m , placed at the vertices of a square of side L . Also obtain the potential at the centre of the square.
- A rubber string 10 m long is suspended from a rigid support at its one end. Calculate the extension in the string due to its own weight. The density of rubber is 1.5 kg/m^3 and Young modulus for the rubber is $5 \times 10^6 \text{ N/m}^2$. Take $g = 10 \text{ N/kg}$
- Water is flowing with a speed of 2 m/s in a horizontal pipe with cross-sectional area decreasing from 2×10^{-2} to 0.01 m^2 at pressure $4 \times 10^4 \text{ pa}$. What will be the pressure at small cross-section?
- Calculate the heat required to convert 3 kg of ice at -12°C kept in a calorimeter to steam at 100°C at atmospheric pressure. Given: specific heat capacity of ice = 2100 J/kg/K
Specific heat capacity of water = 4186 J/kg K
Latent heat of fusion of ice = $3.35 \times 10^5 \text{ J/kg}$ and
Latent heat of steam = $2.256 \times 10^6 \text{ J/kg}$.
- A cylinder containing one gram molecule of the gas was compressed adiabatically until its temperature rise from 27°C to 97°C . Calculate the work done and heat produced in the gas. Given $\gamma = 1.5$.

Subject: CHEMISTRY

Ch-8 Organic chemistry-Basic Principles and techniques

- Draw cis and trans isomers of hex-2-ene. Which isomer will have higher boiling point and why?
- Write the structural formulae of i) o-ethyl anisole ii) 4-ethyl-1-fluoro-2-nitro benzene
- Write all possible isomers of aromatic compound C_8H_{10} .
- Define hyperconjugation. Explain hyperconjugation in ethyl cation.
- Explain inductive effect and resonance effect with examples.
- Arrange ethyne, ethene and ethane in the order of increasing acidity.
- Explain the chemistry of Lassaigne's test for N,S and halogens.
- 0.35g of an organic compound was Kjeldahlised. The ammonia evolved on distilling the kjeldahlised extract with 100ml of M/10 sulphuric acid. The residual acid required 154 ml of M/10NaOH for complete neutralization. Calculate the percentage of nitrogen in the compound. [Ans 18.4%]
- i) What type of intermediate species are formed by homolytic fission?
ii) which substance is used as adsorbent in thin layer chromatography?
iii) Why is resonance hybrid more stable than resonating structures?
iv) In Kjeldahl's method which compound is formed during digestion ie reaction of organic compound with con sulphuric acid on heating?

Ch-9 Hydrocarbons

- How can we obtain iso-butane from n-butane?
- Draw the Newman's projection formula of the staggered form of 1,2-dichloroethane.
- Give the structural formula of 4-tert, butyl-4-ethyl-2,2,5,5-tetra methyl hexane and 5-sec butyl-4-isopropyl decane.
- What is geometrical isomerism? Draw the geometrical isomers of 1,2-dichloroethene. Which one has zero dipole moment and why?
- Compound A C_4H_8 reacts with ozone followed by Zn and water to give B. B is also obtained from C by reaction with sulphuric acid, water and mercuric sulphate. Identify A,B,C and write the reactions involved.
- Convert but-2-yne to trans-but-2-ene.
- How will you convert i) Propyne to propanone ii) Sec butyl bromide to but-2-ene?
- Give the product when 1-methyl cyclohexene reacts with i) acidified hot KMnO_4
ii) Ozone followed by Zn/acetic acid
- Give an alkyne which produces acetic acid and propanoic acid on treatment with alk KMnO_4 at 100°C .
- Which alkene on heating with KMnO_4/KOH gives Hexane-1,6-dioic acid?
- Compound A ($\text{C}_6\text{H}_6\text{O}$) on reaction with con sulphuric acid gives two products B and C. A reacts with con sulphuric acid to form highly acidic compound D. Identify A,B,C and D and write the reactions involved.

12. An alkane C_8H_{18} is obtained as the only product on subjecting a primary alkyl halide to Wurtz reaction. On monobromination this alkane yields a single isomer of a tertiary bromide. Write the structure of alkane and the tertiary bromide.

Subject: BIOLOGY

1. Give two differences between gymnosperms and angiosperms with respect to complex tissues.
2. Make a table showing occurrence, structure and function of different types of simple Tissues in plants.
3. Euglena are myxotrophic. Why? Also identify the outer layer of Euglena.
4. Differentiate between chlorophyll a and chlorophyll b.
5. What is the law of limiting factors? Explain this with a suitable example.
6. Select an appropriate chemical bond among ester bond, glycosidic bond, peptide bond and hydrogen bond and write against each of the following.
 - a. Polysaccharide _____
 - b. Protein _____
 - c. Between nitrogen base and sugar in a nucleotide _____
 - d. between two nitrogen bases in a DNA _____
7. What is oxygen dissociation curve? Write its significance.
8. It is observed that heart cells do not exhibit cell division. Such cells do not divide further and exit _____ phase to enter an inactive stage called _____ of cell cycle.
9. Differentiate between gram positive and gram negative bacteria.
10. Describe three reasons for generation of a proton gradient between the lumen of thylakoids and stroma of chloroplasts.
11. How is the foetus with Rh-positive blood affected if the mother is Rh- negative?
12. Explain how the pituitary and the hypothalamus glands function as an integrated system.
13. a) Write the scientific name of the fungus A and B respectively.
b) What is the class to which they belong? Write one more example for each of these two classes.

OR

- a) What is a dikaryon?
 - b) Write the economic importance of B.
14. Explain the structure of Actin and myosin proteins.

