



DELHI PUBLIC SCHOOL VISAKHAPATNAM ASSIGNMENT

Annual Examination Revision 2024-25



Class: XI

Date of Submission: on or before 3.2.2025

Subject: ENGLISH

I. Choose the correct alternative form of the Verb given in brackets:

- i. She said that she _____ (finish) her work before leaving.
a. finished b. has finished c. had finished d. will finish
- ii. I wish I _____ (know) the truth earlier.
a. knew b. know c. had known d. will know

II. Fill in the blanks with the correct determiner to complete the sentences given below:

- i. There is hardly _____ water left in the bottle.
ii. _____ of the students were present at the seminar.
ii. I saw _____ interesting movie last night.

III. Read the jumbled words and arrange the sentences in their correct order:

- i. The/park/in/the/children/playing/were
ii. Parents/to/their/vacation/a/planning/for/are/summer
iii. Meeting/had/office/the/the/in/been/organized

IV. Complete the sentences using the appropriate conjunction:

1. I stayed at home _____ it was raining heavily.
a. because b. but c. though
2. You can borrow my book _____ you promise to return it soon.
a. so b. if c. and

V. Fill in the blanks with the correct determiner to complete the sentences given below:

- i. There isn't _____ time left to complete the task.
ii. _____ of the students completed the assignment on time.
iii. I need _____ information about the project to proceed further.

VI. Read the passage carefully, Write notes in an organized format using headings and subheadings, Use abbreviations wherever necessary (provide a key). Write a summary of it.

The world is facing a significant environmental crisis due to the deforestation. Forests, often referred to as the lungs of the planet, play a crucial role in maintaining ecological balance. They absorb carbon dioxide, provide oxygen, and support countless species of flora and fauna. However, large-scale deforestation for agriculture, urbanization, and industrial purposes is leading to devastating consequences.

Deforestation contributes to climate change by increasing the concentration of greenhouse gases in the atmosphere. Additionally, the loss of forest cover affects rainfall patterns, leading to severe droughts or floods in different regions. Wildlife is also severely impacted, as their natural habitats are destroyed, pushing many species toward extinction.

Efforts are being made globally to combat deforestation. Governments and organizations are promoting reforestation and afforestation programs. Sustainable practices, such as agroforestry, are being encouraged to strike a balance between development and conservation. However, these initiatives require widespread public support and awareness to be successful.

• **Tasks:**

1. Prepare Notes:

Use Headings and Subheadings.

Include at least 4-5 abbreviations (e.g., defor. For deforestation).

Follow an indented format for clarity.

2. Key to Abbreviations:

List the abbreviations used in your notes.

3. Summary Writing:

- Write a short summary (in 50-60 words) of the passage in your own words.

VI. Answer the following questions.(50-60 words)

- How does the grandmother in The Portrait of a Lady maintain her dignity and independence throughout her life? What does this reveal about her personality?
- What alternate reality does Professor Gaitonde encounter in The Adventure? How does this reality contrast with his understanding of history?
- According to Childhood, what key realizations mark the poet's transition from innocence to maturity?
- What is the central theme of the play Mother's Day? How does it challenge traditional family dynamics?
- How does the poem The Voice of the Rain symbolize the life cycle of nature?

VII. Answer the following questions in about 120-150 words:

- Discuss how modern technology has helped solve mysteries related to King Tut. What role did the CT scan and forensic advancements play?
- What makes a travelogue unique as a literary genre? How does Nick Middleton's Silk Road reflect these characteristics? Compare it with the theme of exploration in The Adventure by Jayant Narlikar.
- In We're Not Afraid to Die... If We Can All Be Together, how do the family's hope and teamwork help them survive?

Subject: MATHEMATICS

1-Let $A = \{a, b\}$ and $B = \{a, b, c\}$. Is $A \subset B$? What is $A \cup B$?-

2-Draw the graph of the rational function $f(x) = \frac{x^2-1}{x-1}$.

3-Prove that $(\cos^4 x + \sin^4 x) = \frac{1}{2} (2 - \sin^2 2x)$.

4-Evaluate: \sqrt{i} .

5-Solve the given system of equations in R: $\frac{|x-2|}{x-2} > 0$.-

6-If ${}^n C_{12} = {}^n C_{13}$, find the value of ${}^{25} C_n$.

7-Using binomial theorem, compute the following: $(10.1)^5$.

8-The sum of first two terms of an infinite geometric series is 15 and each term of the series is equal to the sum of all the terms following it. Find the series.

9-The sum of the squares of the distances of a moving point from two fixed points $(a,0)$ and $(-a, 0)$ is equal to a constant quantity $2c^2$. Find the equation to its locus.

10-Find the equation of the ellipse whose vertices are $(\pm 13, 0)$ and foci are $(\pm 5, 0)$.

11-Find the distance between the points: P $(1, -1, 0)$ and Q $(2, 1, 2)$.

12-Differentiate: $\frac{x}{\sin x}$ respect to x.

13-Find the mean deviation from the median for the data 34, 66, 30, 38, 44, 50, 40, 60, 42, 51.

14-In a simultaneous toss of two coins, find the probability of getting exactly one tail.

Subject: PHYSICS

1. If $x = at + bt^2$, where x is in meters and t in hours, what will be the units of a and b ?

2. 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?

3. 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?

4. 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 $g = 10 \text{ m/s}^2$

5. (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?

6. 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 $2 \times 10^{-2} \text{ m}^2$ 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

- 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 $M/10 \text{ NaOH}$ 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.
- 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: ARTIFICIAL INTELLIGENCE

1. Write any two advantages and disadvantages of linear regression.
2. How can outliers impact regression analysis?
3. What is the primary difference between classification and regression?
4. List the types of clustering methods.
5. How does classification model work?
6. What is Machine learning? Name the three methods of machine learning.
7. Explain the concept of data literacy and its importance in today's digital age.
8. What is data visualization and why is it important?
9. When would you use a scatter plot?
10. What do you mean by web scraping?
11. Explain the terms mean, median and mode.
12. Write down the steps of Problem decomposition
13. What do you mean by a capstone project? Explain briefly.
14. Define Design Thinking. Explain briefly the different stages of Design thinking.
15. Name some examples of regression algorithms?