

SRI RAM KRISHAN DAV PUBLIC SCHOOL,SURIYA

Durga Puja Home work 2025-26

Class-XII (SCIENCE)

English

A. Write the main points of the following prose-

1. The Last Lesson
2. Lost Spring
3. The Third Level

B. Write the main points of the poem "My Mother at Sixty-six".

C. You are Prem/Parul, 16, TT Nagar, Bhopal. You would like to apply for the post of the Marketing Manager in a reputable firm in Mumbai. Write a letter to the Public Relations Officer, Chaitanya Enterprises, Mumbai, applying for the job. Write the letter in 120-150 words giving your biodata.

D. The History Club of your school organized a picnic on a river bank. During the picnic you observed a small boat (with two persons in it) sinking. You saw a good swimmer jumped into the river and rescued the two persons in the boat. Write a report in 120-150 words on the picnic and the rescue. You are Rohit of 2, Mall Road, Kanpur.

BIOLOGY

1. Make a project work on any one of the subtopics of biology included in class 12.

Following instructions should be followed while making the project work:

- i. Cover file should be well decorated.
- ii. Use A4 size coloured or white chart papers.
- iii. Front page must include your name, board roll number (left blank), class, topic name.
- iv. Certificate either handwritten or in printed format. (as present in biology practical file)
- v. Photographs and drawing must be given as per the need of the topic.

Sequence of the project should be according to the given format:

1. Front page
2. Certificate
3. Acknowledgments
4. Index
5. Introduction (brief intro about your topic)
6. Body
 - i. Previous research and analysis about the topic.
 - ii. New discoveries and inventions in the field.
 - iii. Brief analysis of the content of your topic.
7. Conclusion (mention about your analysis and short summary of your learning achievement)
8. Bibliography (source from where the content has been taken)

CHEMISTRY

1. State and explain Raoult's law for a solution containing non-volatile solute.
2. Differentiate between ideal and non-ideal solutions with examples.

3. Numerical: Calculate the boiling point of a solution containing 18 g of glucose ($C_6H_{12}O_6$) in 100 g of water. (K_b for water = $0.52 \text{ K kg mol}^{-1}$, b.p. of water = 373 K).

4. Define osmotic pressure and derive its formula.

5. Write the Nernst equation and apply it to a cell reaction.

6. Define conductivity and molar conductivity. How does molar conductivity vary with concentration for strong and weak electrolytes?

7. What is electrolysis? Explain with the electrolysis of molten NaCl.

8. Write the mechanism of dehydration of ethanol.

9. Explain why phenol is more acidic than ethanol.

10. Give equations for the preparation of phenol from:

(i) Cumene (ii) Chlorobenzene

11. Write the reactions of phenol with:

(i) Bromine water (ii) Dilute NaOH (iii) Neutral $FeCl_3$ solution

12. Write the Williamson ether synthesis reaction with an example.

PHYSICS

1. Solve all NCERT exercise questions from chapter 1 to 7

Case-Study

1. Read the text carefully and answer the questions:

Priyanka and Renu are playing Ludo at home during Covid-19. While rolling the dice, Priyanka's sister Pummy observed and noted the possible outcomes of the throw every time belongs to set $\{1, 2, 3, 4, 5, 6\}$. Let A be the set of players while B be the set of all possible outcomes.

- i). Pummy wants to know the number of functions from A to B. How many number of functions are possible?
- ii). Pummy wants to know the number of relations possible from A to B. How many number of relations are possible?
- iii). Let R be a relation on B defined by $R = \{(1, 2), (2, 2), (1, 3), (3, 4), (3, 1), (4, 3), (5, 5)\}$. Is R an equivalence relation?

2. Read the text carefully and answer the questions:

The nut and bolt manufacturing business has gained popularity due to the rapid Industrialization and introduction of the Capital-Intensive Techniques in the Industries that are used as the Industrial fasteners to connect various machines and structures. Mr. Suresh is in Manufacturing business of Nuts and bolts. He produces three types of bolts, x, y, and z which he sells in two markets. Annual sales (in ₹) indicated below:

Markets	Products		
	x	y	z
I	10000	2000	18000
II	6000	20000	8000

- i). If unit sales prices of x, y and z are ₹2.50, ₹1.50 and ₹1.00 respectively, then find the total revenue collected from Market-I & II.
- ii). If the unit costs of the above three commodities are ₹2.00, ₹1.00 and 50 paise respectively, then find the cost price in Market I and Market II.

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- iii). If the unit costs of the above three commodities are ₹2.00, ₹1.00 and 50 paise respectively, then find gross profit from both the markets.

3. Read the text carefully and answer the questions:

Minor of an element a_{ij} of a determinant is the determinant obtained by deleting its i^{th} row and j^{th} column in which element a_{ij} lies and is denoted by M_{ij} .

Cofactor of an element a_{ij} , denoted by A_{ij} , is defined by $A_{ij} = (-1)^{i+j} M_{ij}$, where M_{ij} is minor of a_{ij} . Also, the determinant of a square matrix A is the sum of the products of the elements of any row (or column) with their corresponding cofactors. For example, if $A = [a_{ij}]_{3 \times 3}$, the $|A| = a_{11}A_{11} + a_{12}A_{12} + a_{13}A_{13}$.

$$\begin{vmatrix} 1 & -2 \\ 4 & 3 \end{vmatrix} ?$$

- i). What is the sum of the cofactors of all the elements of

ii). What is the minor of a_{21} of $\begin{vmatrix} 5 & 6 & -3 \\ -4 & 3 & 2 \\ -4 & -7 & 3 \end{vmatrix}$?

iii). In the given determinant $\begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$ what is the value of the element at position of a_{32} · A_{32} ?

4. Read the text carefully and answer the questions:

A potter made a mud vessel, where the shape of the pot is based on $f(x) = |x - 3| + |x - 2|$, where $f(x)$ represents the height of the pot. i). What is the height in terms of x when $x > 4$?

ii). Will the slope vary with x value? iii). Will the potter be able to make a pot using the function $f(x) = [x]$? Why or why not?

5. Read the text carefully and answer the questions:

The Government declare that farmers can get ₹300 per quintal for their onions on 1st July and after that, the price will be dropped by ₹3 per quintal per extra day. Govind's father has 80 quintals of onions in the field on 1st July and he estimates that the crop is increasing at the rate of 1 quintal per day.

i). If x is the number of days after 1st July, then express price and quantity of onion and the revenue as a function of x .

ii). Find the number of days after 1st July, when Govind's father attains maximum revenue.

iii). On which day should Govind's father harvest the onions to maximize his revenue?