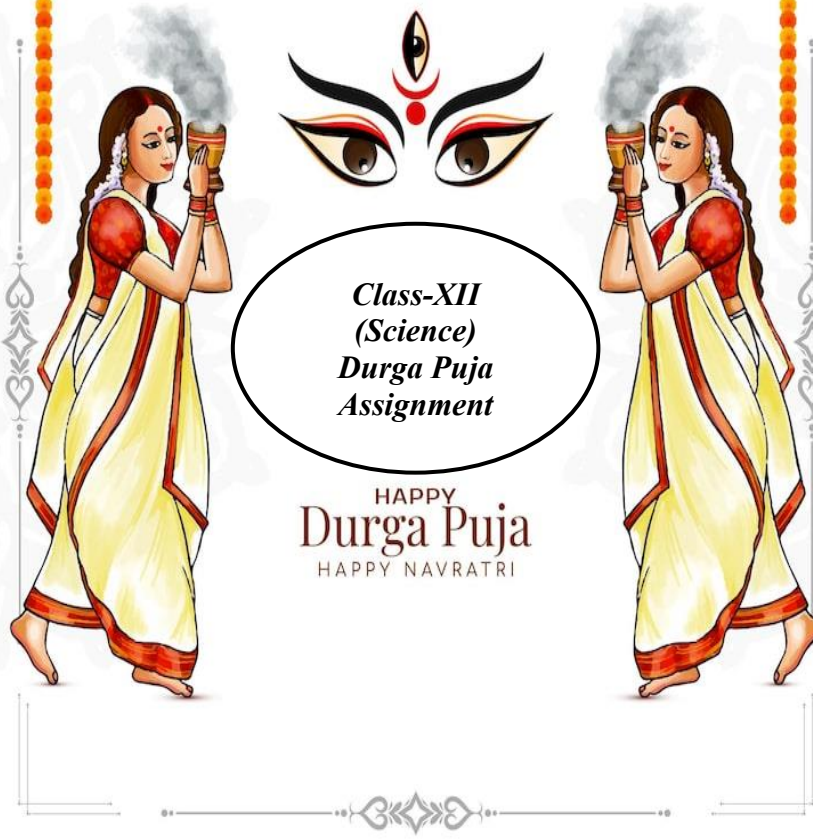
Delhi Public School, Chas Bokaro

Session-2026-2027



Class-XII
(Science)
Durga Puja
Assignment

English

"FORGOTTEN VICTIMS"

QUESTION A

The beauty of the glass bangles of Firozabad contrasts with the misery of people who produce them.

This paradox is also found in some other situations, for example, those who work in gold and diamond mines, or carpet weaving factories, and the products of their labour, the lives of construction workers, and the buildings they build.

Look around and find examples of such paradoxes.

1. Write a paragraph of about **200 to 250** words on any one of them. You can start by making notes.

Here is an example of how one such paragraph may begin:

You never see the poor in this town. By day they toil, working cranes and earthmovers, squirreling deep into the hot sand to lay the foundations of chrome. By night they are banished to bleak labour camps at the outskirts of the city...

QUESTION B

1. Choose an issue that has provoked a controversy like the Bhopal Gas Tragedy or the Narmada Dam Project in which the lives of the poor have been affected.

2. Find out the facts of the case.

3. Present your arguments.

4. Suggest a possible settlement.

QUESTION C

Collect about **FIVE** cartoons from newspapers and magazines in any language to discuss how important people or events have been satirised. Comment on the interplay of the words and the pictures used.

NOTE:

1. Use a hard file for your project.

2. Follow the Sequence:

- Main file cover
- Introduction page
- Certificate

- Acknowledgement
- Index
- Project work (on any two)
- Conclusion
- Bibliography

3. Prepare project on any two out of given three.

4. Name of Project :- "**FORGOTTEN VICTIMS"**

Maths

1. $\int_0^{\frac{\pi}{2}} \frac{\sec^5 x}{(\sec^5 x + cosec^5 x)} dx = ?$

2. If $\int_0^a \frac{1}{1+4x^2} dx = \frac{\pi}{8}$, then a equal

3. $\int_{-\pi/4}^{\pi/4} x^3 \cos^2 x dx$ is equal to:

4. Let $f'(x) = 3(x^2 + 2x) - \frac{4}{x^3} + 5, f(1) = 0$. Then $f(x)$ is:

5. $\int \frac{x+3}{(x+4)^2} e^x dx$ =

Section B

6. Read the following text carefully and answer the questions that follow:

If a relation between x and y is such that y cannot be expressed in terms of x, then y is called implicit function of x.

Assume a function, $y = 6x^2 - 11e^y$

This function can be rewritten as

$y + 11e^y = 6x^2$

But it is not possible to completely separate and represent it as a function of y. This type of function is known as an implicit function.

To differentiate an implicit function, we consider y as a function of x and then we use the chain rule to differentiate any term consisting of y.

Now to differentiate the above function, we differentiate directly w.r.t. x the entire function. This step basically indicates the use of chain rule.

i.e., $\frac{dy}{dx} + \frac{d(11e^y)}{dx} = \frac{d(6x^2)}{dx}$

$\Rightarrow \frac{dy}{dx} + 11e^y \frac{dy}{dx}$ = 12x

$\Rightarrow \frac{dy}{dx}(1 + 11e^y)$ = 12x

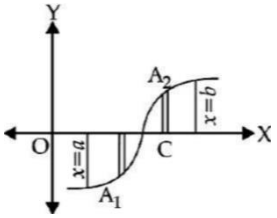
$$\Rightarrow \frac{dy}{dx} = \frac{12x}{(1 + 11e^y)}$$

1. If $x^3 + x^2 y + xy^2 + y^3 = 81$, then find $\frac{dy}{dx}$. (1)
2. Find the slope of the tangent to the curve $y = x^2 + 6y^2 + xy$. (1)
3. Find $\frac{dy}{dx}$ at x = 1, y = $\frac{\pi}{4}$ if $\sin^2 y + \cos xy = K$. (2)

   OR

   If $y = \left(\sqrt{x}\right)^y$, then find $\frac{dy}{dx}$. (2)

7.



Assertion (A):

Area = $|A_1| + |A_2|$

Reason (R): It may happen that some portion of the curve is above x - axis and some portion is below x - axis as shown in the figure. Let A_1 be the area below x - axis and A_2 be the area above the x - axis. Therefore, area bounded by the curve y = f(x), x - axis and the ordinates x = a and x = b is given by Area = $|A_1| + |A_2|$

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

Section C

8. Find $\int \frac{2^{x+1} - 5^{x-1}}{10^x} dx$.

9. Evaluate: $\int_{-\pi/4}^{\pi/4} \frac{x^{11} - 3x^9 + 5x^7 - x^5 + 1}{\cos^2 x} dx$

10. Evaluate $\int (x + 2)\sqrt{3x + 5} dx$.

11. Evaluate $\int_0^4 [|x| + |x-2| + |x-4|]\, dx$.

12. Find $\int \frac{\sin^{-1}\sqrt{x} - \cos^{-1}\sqrt{x}}{\sin^{-1}\sqrt{x} + \cos^{-1}\sqrt{x}} dx, x \in [0,1]$.

13. Evaluate: $\int \frac{\sqrt{x^2+1}\left(\log|x^2+1| - 2\log|x|\right)}{x^4} dx$.

14. Evaluate: $\int_0^\infty \frac{1}{(x^2+a^2)(x^2+b^2)} dx$

15. If f and g are continuous functions on interval. Given that $f(a-x) = f(x)$ and $g(x) + g(a-x) = a$, show that $\int_0^a f(x)g(x)dx = \frac{a}{2}\int_0^a f(x)dx$.

PHYSICS

Q.1 A convex lens is put 10 cm from a light source and it makes a sharp image on a screen, kept 10 cm from the lens. Now a glass block (refractive index 1.5) of 1.5 cm thickness is placed in contact with the light source. To get the sharp image again, the screen is shifted by a distance d. Then find d.

Q.2 The mean intensity of radiation on the surface of the Sun is about 10^8 W/m^2. Find RMS value of the corresponding magnetic field.

Q.3 A series AC circuit containing an inductor (20 mH), a capacitor (120 μF) and a resistor (60 Ω) is driven by an AC source of 24 V/50 Hz. Calculate energy in joule dissipated in the circuit in 60 s.

Q.4 In an a.c. circuit, the instantaneous e.m.f. and current is given by

e = 100sin30t, i = 20sin(30t – π/4)

In one cycle of A.C, find 1.the average power consumed by the circuit and 2. the wattless current

CHEMISTRY

1.write the physical and chemical properties of alkene.

2. Differentiate between SN1 and SN2 reaction. Also Explain racemisation and inversion with example.

3. write Faradays first and second law of electrolysis.

4. Explain the different Electrophilic substitution reaction with example.

BIOLOGY

Practical

1. To isolate the DNA from available plant material like Banana, Onion, Spinach etc.

2. To prepare a temporary mount of Onion root tip to study mitosis.

3. To study of prepared pedigree charts of genetic traits such as

a. Rolling of tongue b. blood groups c. Widow's peak d. colour blindness.

4. To study Homologous and Analogous organ with the help of charts of Animals and plants.

Note: Prepare in your Biology practical notebook.

PHE

1.Draw the fixture of 19 teams on the basis of knockout tournament.

2.Draw the fixture of 7 teams in league tournament on the basis of cyclic method.

GRAPHICS

1. Draw & Paint five Layout in your Graphics File on the following Topics.

a) Festivals & occasion b) Sports & yoga c) Nature / Fantasy World

d) Historical monuments e) Family Affairs

2. Write down about all 12 Painting / Graphis prints / Sculptures in a test copy and submit after vacation. Notes Already given to you.

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Delhi Public School, Chas Bokaro

Session-2026-2027



Class- XII
(Commerce) Durga Puja Assignment

English

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ACCOUNTANCY

Q1. Which of the following items is excluded from Current Assets while computing the **Current Ratio** as per CBSE guidelines?

(a) Short-term Loans and Advances (b) Loose Tools and Stores & Spares

(c) Trade Receivables (d) Cash and Cash Equivalents

Q2. If Revenue from Operations is ₹10,00,000, Gross Profit is ₹2,50,000, and Operating Expenses are ₹1,00,000, the **Operating Ratio** will be:

(a) 15% (b) 85% (c) 75% (d) 25%

Q3. From the following information, calculate the **Interest Coverage Ratio**:

- Net Profit after Tax: ₹1,40,000
- Income Tax Rate: 30%
- 10% Mortgage Debentures: ₹8,00,000
- 12% Long-Term Bank Loan: ₹5,00,000

Q4. From the following particulars, calculate the **Inventory Turnover Ratio**:

- Revenue from Operations (Net Sales): ₹15,00,000
- Gross Profit: 25% on Cost of Revenue from Operations
- Closing Inventory was ₹40,000 more than Opening Inventory
- Opening Inventory was ₹1,80,000

Q5. The following details relate to **Vanguard Ltd.** for the year ended 31st March, 2024:

- Current Ratio: 2.5:1
- Quick Ratio (Liquid Ratio): 1.5:1
- Working Capital: ₹3,00,000
- Cost of Revenue from Operations: ₹16,00,000
- Gross Profit: 20% on Revenue from Operations

Calculate:

1. **Current Liabilities**
2. **Current Assets**
3. **Quick Assets**
4. **Inventories**
5. **Revenue from Operations**
6. **Working Capital Turnover Ratio**

BST

Q1. Radhika Ltd. manufactures organic cosmetic products. To expand operations, the Chief Financial Officer (CFO) decides to purchase a new German automated packaging plant worth ₹1.5 crore. Which financial decision is reflected in this step?

(a) Financing decision

(b) Investment decision (Capital Budgeting)

(c) Dividend decision

(d) Working capital decision

Q2. An enterprise has a high proportion of fixed operating expenses (such as rent, salaries, and insurance). To keep its overall financial risk low, the company should ideally choose:

(a) Higher proportion of Debt in capital structure

(b) Higher proportion of Equity in capital structure

(c) High Dividend Payout

(d) Increased Short-term Borrowings

Q3. SmartLogix Ltd., an Indian IT logistics firm, is evaluating whether to acquire a cloud-based server network worth ₹80 lakh or continue renting private third-party servers. Mr. Aniket, the financial manager, states:

"This decision will lock our funds for a multi-year horizon, directly affect our operational scale, and cannot be reversed without substantial financial loss."

1. Identify the specific type of financial decision mentioned above.
2. State any **two factors** that Mr. Aniket must analyze before committing funds to this project

Q4. V-Mart Retail sets a standard sales target of 1,000 apparel units per week for its South Delhi outlet. At the end of the week, the actual performance report shows 720 units sold. Upon investigation, the manager discovers that nearby road repairs blocked customer access for four consecutive days.

1. Identify the steps of the **Controlling Process** highlighted in the situation above.
2. Suggest the appropriate **corrective action** that the management should take in this situation.

Q5. Solaris Power Ltd. requires ₹30,00,000 for expansion. The finance manager presents two alternative plans:

- **Plan I:** Issue 3,00,000 Equity Shares of ₹10 each.
- **Plan II:** Issue 1,50,000 Equity Shares of ₹10 each and ₹15,00,000, 10% Debentures.

The company's Earnings Before Interest and Tax (EBIT) is ₹6,00,000, and the corporate tax rate is 30%.

1. Calculate the **Earnings Per Share (EPS)** under both plans.
2. State which plan the company should adopt to maximize shareholder wealth, naming the financial concept at work.

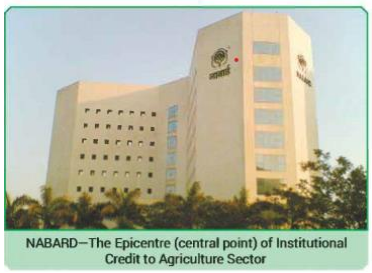
ECONOMICS



Small-scale Industry

Q.1. On account of above picture explain the role of small-scale enterprises in economic development of the country.

Q.2. On account of below picture explain the role of NABARD in rural and agriculture development of the country.



NABARD—The Epicentre (central point) of Institutional Credit to Agriculture Sector

Q.3. Explain the importance of MSP for the farmers.



Price Support Policy—Protection against Uncertainties of the Market

Q.4. On account of below picture, explain the journey of industrial development growth in India.



Industry—A Significant Source of Employment

GRAPHICS

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INFORMATICS PRACTICES

Note:-

a. Complete the assignment in classwork notebook.

1. The Durga Puja committee has five computers in its control room for CCTV monitoring, accounts, visitor information, announcements and administration. All computers are connected to a central switch.

(a) Identify the network topology used (b) Draw a labelled diagram of this topology

(c) State two advantages of using this topology

2. A Durga Puja committee maintains digital records of donations, expenses and vendor payments. Explain any two advantages of using a computer network for this purpose.

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