DELHI PUBLIC SCHOOL, CHAS BOKARO
(2026-27)

Diwali & Chhath Puja



Class – XI (Science)
Diwali &
Chhath Puja Assignment

English

"Behind Every Mother Is a Story Untold!"

Theme: An Exclusive Interview with Mothers – Celebrating Their Experiences, Emotions and Dreams







1. Activity: Become a Young Journalist!

Inspired by the chapter *Mother's Day* by J.B. Priestley, you are going to step into the shoes of a journalist. Interview your mother or any other mother around you and discover the beautiful, challenging and sometimes untold dimensions of motherhood.

Ask questions that go beyond routine conversations and help you understand her identity, dreams, struggles, achievements and expectations.

Interesting Interview Questions

1. Before becoming a mother, what were your biggest dreams and ambitions?
2. What is one thing about your personality that you feel motherhood has changed?
3. Did you ever give up a personal dream or ambition for your family?
4. Is there any dream you still wish to fulfil?
5. What makes you feel the happiest and most appreciated as a mother?
6. Do mothers also need emotional support and encouragement? Why?
7. Do you think the responsibilities of mothers have changed over the years?
8. How is parenting today's generation different from the way you were raised?
9. Do you think family members sometimes take a mother's love and care for granted?
10. What is one small gesture from your children that makes you feel valued?
11. How difficult is it for a working mother to balance professional and family responsibilities?

After conducting the interview, complete these creative tasks:

1. Give your interview an attractive and meaningful headline.
2. Write a short introduction presenting the mother you interviewed.
3. Select 5 most interesting questions and record her responses and prepare slides on it.
4. Include memorable photographs or a creative illustration.
5. Write a concluding paragraph explaining what you discovered about motherhood.

3. Write a poem or an essay on any one of the following in about 1000 words:

a. Empowered women, Sustainable Future.

b. Policy Interventions and Social Reforms in Female Empowerment.

(NOTE: - Q2 is to be done in the separate sheet.)

Maths

1. To distinguish between a Relation and a Function.
2. To verify the relation between the degree measure and the radian measure of an angle.
3. To find the values of sine and cosine functions in second, third and fourth quadrants using their given values in first quadrant.
4. To prepare a model to illustrate the values of sine function and cosine function for different angles which are multiples of $\pi/2$ and π.
5. To plot the graphs of sin x, sin 2x, 2sinx and sin x/2, using same coordinate axes.

Physics

Q.1 A uniform rod of mass 20 kg and length 5 m leans against a smooth vertical wall making an angle of 60 Degree with it. The other end rests on a rough horizontal floor. Find friction force that the floor exerts on the rod?

Q.2 The Sun rotates around its centre once in 27 days. What will be the period of revolution if the Sun were to expand to twice its present radius without any external influence? Assume the Sun to be a sphere of uniform density.

Q.3 The ratio of radius of gyration of a solid sphere of mass M and radius R about its own axis to the radius of gyration of the thin hollow sphere of same mass and radius about its axis is ….

Q.4 An energy of 484 J is spent in increasing the speed of a flywheel from 60 rpm to 360 rpm. The moment of inertia of the flywheel is :

Q.5 From a circular ring of mass 'M' and radius 'R' an arc corresponding to a 90 Degree sector is removed. The moment of inertia of the remaining part of the ring about an axis passing through the centre of the ring and perpendicular to the plane of the ring is 'K' times 'MR^2'. Then the value of 'K' is :

Q.6 A solid cylinder of mass 2 kg and radius 50 cm rolls up an inclined plane of angle of inclination is 30 Degree . The centre of mass of the cylinder has speed of 4 m/s. The distance travelled by the cylinder on the inclined surface will be

Q.7 The height 'h' at which the weight of a body is the same as that at the same depth 'h' from the Earth's surface is…..

Q.8 A solid sphere of radius R attracts a particle placed at 3R from its centre with force F1. A spherical cavity of radius R/2 is made. The force becomes F2. The ratio F1:F2 is:

Q.9 Consider two satellites S1 and S2 with periods of revolution 1hr and 8hr, revolving around a planet in circular orbits. The ratio of angular velocity of S1 to S2 is:

Q.10 Four particles each of mass M move along a circle of radius R under their mutual gravitational attraction. The speed of each particle is:

Q.11 Two stars of masses m and 2m at distance d rotate about their common centre of mass in free space. Period of revolution is:

Q.12 A body of mass M is taken from the surface of earth to a height equal to twice the radius of earth. The increase in potential energy will be.

(g is acceleration due to gravity at the surface of earth)

Q.13 The height in terms of radius of the earth R, at which the acceleration due to gravity becomes g/9, where g is acceleration due to gravity on earth's surface, is

Q.14 Three masses 200 Kg, 300 Kg and 400 kg are placed at the vertices of an equilateral triangle with sides 20 m. They are rearranged on the vertices of a bigger triangle of side 25 m and with the same centre. The work done in this process J.

Q.15 An object is kept at rest at a distance of 3R above the earth's surface where R is earth's radius. The minimum speed with which it must be projected so that it does not return to earth is: (Assume M= mass of earth,G= Universal gravitational constant)

16. PHYSICS PRACTICAL-Complete Physics practical file as per given instructions in class.

Chemistry

1. Calculate the number of protons, neutrons and electrons in Br, Co, H_2o.
2. The wavelength range of the visible spectrum extends from violet (400 nm) to red (750 nm). Express these wavelengths in frequencies (Hz).
3. When electromagnetic radiation of wavelength 300 nm falls on the surface of sodium, electrons are emitted with a kinetic energy of 1.68 ×105 J mol–1. What is the minimum energy needed to remove an electron from sodium? What is the maximum wavelength that will cause a photoelectron to be emitted?
4. The mass of an electron is 9.1×10–31 kg. If its K.E. is 3.0×10–25 J, calculate its wavelength.
5. A golf ball has a mass of 40g, and a speed of 45 m/s. If the speed can be measured within accuracy of 2%, calculate the uncertainty in the position.
6. What is the total number of orbitals associated with the principal quantum number n = 3.
7. Explain why the electron gain enthalpy of fluorine is less negative than that of chlorine.
8. Among alkali metals which element do you expect to be least electronegative and why?
9. Discuss and compare the trend in ionisation enthalpy of the elements of group1 with those of group17 elements.
10. Discuss VSEPR theory. Explain hybridisation in different molecule.
11. Explain the postulates of molecular orbital theory.
12. Use the molecular orbital energy level diagram to show that N2 would be expected to have a triple bond, F2, a single bond and Ne2, no bond.

Biology

Project work

1. To study different types of leaves and their venation with suitable examples.

2. Demonstrating that germinating seeds undergo cellular respiration and actively release CO_2 gas.

3. Study of Normal and Abnormal **ECG Patterns** and Values

a. Introduction	**b. Aim of the Project**	**c. Principle of ECG**
d. Parts of a Normal ECG	**e. Diagram of Normal ECG**	**f. Normal ECG Values**
g. Abnormal ECG and Its Values	**h. Comparison Between Normal and Abnormal ECG**	
i. Sample ECG Observations	**j. Diagram of Abnormal ECG**	**k. Uses of ECG**

4. prepare a **PPT** Understanding **Heart Function Through Real-Life Situations** and a Family Heart Rate Survey.

5. Prepare model on the **Krebs Cycle (Citric Acid Cycle)** using thermocol and chart paper, connected with real-life situations (i.e- **Running and Playing, Studying for Examinations, Sleeping etc).**

Physical Education

1.Write the process of ruler drop test.

2.Write the importance of test and measurement in sports.

3.What is the process of flamingo balance test.

IP

General Instructions:

a. Write these python program in the practical copy.
b. Write questions, python program and output of the program.

1. WAPP to find the largest and smallest numbers in a list.
2. WAPP to find the third largest/smallest number in a list.
3. WAPP to find the sum of squares of the first 100 natural numbers.
4. WAPP to count the number of vowels in user entered string.
5. WAPP to print number of occurrences of a given alphabet in each string.

Graphics

1. Complete your Graphics file with all Layout drawn and painted on the theme already given to you. Topic - Nature, Sports & Games, Yoga, fantasy world, Famous monuments & statues, Family Affairs, Festivals. (Total 12 Layouts must be there in your file.)
(Total 12 Layouts, make sure that minimum 8 to 10 fresh sheets are there in you file for Prints to be done after school reopen, File must be properly covered and submitted on school reopen day)

2. Write the notes given to you of PT-3 portion, in a copy and submit on school reopen day

Painting

1. Complete your Painting file with all Topics already given to you.
   Topic –
   i) Still life-3

   ii) Nature study – 2

   iii) Water color Composition- 3

   iv) Folk art- 3 (Warli-1, Madhubani Art - 1, Gond Art- 1)

   Total 11, File must be properly covered and submitted on school reopen day)

HVM

- Define These Terms

1. Thaat
2. Nada and Its Type
3. Write Taal Jhaptaal, Teentaal, Ektaal Thah Dugun Tigun and Chaugun
4. Write Raag Bhairavi and Raag Bhimpalashi Chhota Khayal & Bada Khayal and Its Importance
5. Write The Tuning Process of Tanpura
6. Describe the biography of Tansen.

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Physical Education

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2.Write the importance of test and measurement

3.Write the process of ruler drop test.

Accountancy

Section A: Conceptual & Objective Type (1 Mark Each)

1. State the objective of preparing a **Trading Account**.
2. How does **Operating Profit** differ from **Net Profit**?
3. Where is **Closing Stock** shown if it appears *inside* the Trial Balance?
4. Outstanding rent of ₹5,000 appears in the Trial Balance. Where will it be recorded in the Financial Statements?
    - (a) Trading A/c (Debit)
    - (b) Profit & Loss A/c (Debit)
    - (c) Balance Sheet (Liabilities)
    - (d) Both P&L A/c and Balance Sheet
5. If Cost of Goods Sold is ₹3,20,000 and Gross Profit is 20% on Sales, calculate the amount of Sales.

Section B: Comprehensive Problem Without Adjustments (6 Marks)

6.From the following balances extracted from the books of **Shree Ram Traders**, prepare the **Trading and Profit & Loss Account** for the year ended 31st March 2026 and a **Balance Sheet** as on that date:

Debit Balances	Amount (₹)	Credit Balances	Amount (₹)
Opening Stock	30,000	Capital	1,80,000
Purchases	1,40,000	Sales	2,80,000
Wages	18,000	Creditors	42,000
Carriage Inwards	4,000	Commission Received	3,000
Salaries	26,000	Bank Overdraft	15,000
Rent & Rates	12,000	Return Outwards	4,000
Return Inwards	5,000		
Furniture	25,000		
Plant & Machinery	1,10,000		
Sundry Debtors	60,000		
Cash in Hand	14,000		
Total	**4,44,000**	**Total**	**4,44,000**

Closing Stock on 31st March 2026 was valued at ₹40,000.

Economics

All students of Class XI are hereby informed that they have to prepare and submit their Economics Annual Project as per their roll numbers. The topics are allotted as follows:

- **ODD Roll Numbers 1:** Producer's Equilibrium
- **EVEN Roll Numbers 2:** Theory of supply and Market Equilibrium

1. The project should be neat, well-organised, and properly presented.
2. It should include a cover page, index, acknowledgement, introduction, main content, conclusion, and bibliography.
3. Students may use relevant pictures, charts, and examples to make their projects informative and attractive.

4. The project must be completed individually and submitted within the stipulated deadline.

All students are instructed to complete their projects sincerely and submit them on time.

Business Studies

Festive Entrepreneurship: Financing a Small Business

Diwali is a season of business opportunities, innovation and entrepreneurship. From traditional diya makers to modern gift-box manufacturers, small businesses play an important role in the festive economy.

Students are required to prepare an **interesting, creative and research-based project file** exploring the concepts of Sources of Business Finance and MSMEs through a real-life business context.

Project File Preparation Guidelines

- Prepare a handwritten project file of approximately **8–12 pages**.
- include a cover page, index, introduction, main content, conclusion and bibliography.
- Use relevant pictures, newspaper clippings, charts, tables and illustrations.
- Include at least **2 flowcharts, 1 financial table and 1 graphical representation**.
- Use creative borders, colourful headings and attractive layouts.
- Ensure that all facts and figures are properly acknowledged.
- Maintain originality, neatness and conceptual accuracy.

For reference -

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Applied Maths

1. To distinguish between a Relation and a Function
2. Arithmetic Mean is defined as the sum of the value of all observations divided by the number of observations.
3. In our everyday life and in the business world, we encounter transactions involving sales and purchases. Every time such a transaction occurs, it may be observed that there is a seller and a buyer involved.
4. Division of two complex numbers.
5. The Modulus and the conjugate of a complex number.
6. To distinguish between permutation and combination.

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