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WINTER BREAK ASSIGNMENT (CLASS- XI)

SUBJECT	HOME WORK
English	1. Compile a list of 50 commonly used 'Phrasal Verbs', provide their meanings and illustrate their usage with example sentences. 2. Draft a conversation between the father and his son that illustrates the restoration of their relationship, with reference to the poem "Father to Son by 'Elizabeth Jennings'. Note- Do the above given work in the notebook.
Physics	1. What is Surface Tension? 2. Discuss molecular theory of surface tension 3. Derive a relation between surface tension and surface energy. 4. Derive an expression for excess pressure inside a drop of liquid and shop bubble. 5. Derive the ascent formula for the rise of liquid in a capillary tube. 6. State and prove bernoulli's theorem 7. A sphere is dropped under gravity through a fluid of viscosity η . Taking the average ac celeration as half of the initial ac celeration, show that the time to attain the terminal velocity is independent of the fluid density.
Chemistry	Q1. Electrons are emitted with zero velocity from a metal surface when it is exposed to radiation of wavelength 6800 Å. Calculate threshold frequency (ν0) and work function (W0) of the metal. Q2. What is the wavelength of light emitted when the electron in a hydrogen atom undergoes transition from an energy level with n = 4 to an energy level with n = 2? Q3. How much energy is required to ionise a H atom if the electron occupies n = 5 orbit? Compare your answer with the ionization enthalpy of H atom (energy required to remove the electron from n=1 orbit). Q4. (i) The energy associated with the first orbit in the hydrogen atom is –2.18 × 10–18 J atom–1 . What is the energy associated with the fifth orbit? (ii) Calculate the radius of Bohr's fifth orbit for hydrogen atom. Q5. What is the energy in joules, required to shift the electron of the hydrogen atom from the first Bohr orbit to the fifth Bohr orbit and what is the wavelength of the light emitted when the electron returns to the ground state? The ground state electron energy is –2.18 × 10–11 ergs. Q6. The electron energy in hydrogen atom is given by En = (–2.18 × 10–18)/n2 J. Calculate the energy required to remove an electron completely from the n = 2 orbit. What is the longest wavelength of light in cm that can be used to cause this transition? Q7. What transition in the hydrogen spectrum would have the same wavelength as the Balmer transition n = 4 to n = 2 of He+ spectrum? Q8. An element with mass number 81 contains 31.7% more neutrons as compared to protons. Assign the atomic symbol.

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Biology	1. What are the cytoskeletal structures present in eukaryotic cells? 2.How is a multicellular organisation more advanced than a unicellular organisation? 3.Describe hormones of the kidney and GI tract. 4.On an educational trip to Uttarakhand, Ketki and her friends observed that many local people had swollen necks. Please help Ketki and her friends find the solution to the following questions. Which probable disease are these people suffering from? How is it caused? What effect does this condition have on pregnancy? 5.What are the significant features that you find in parasitic Platyhelminthes? 6.Can the number of eggs or young ones produced by an oviparous and viviparous mother be equal? Why? 7.What happens to the respiratory process in someone going uphill?
Maths	#Activity 1- To distinguish between a Relation and a Function. #Activity 2- To plot the graphs of $sin\ x$, $sin\ 2x$, $2sinx$ and $\sin\frac{x}{2}$, using same coordinate axes.
Economics	1. What are the characteristics of a perfectly competitive market? 2. A consumer spends ₹1,000 on a good priced at `8 per unit. When price rises by 25 percent, the consumer continues to spend ₹1,000 on the good. Calculate price elasticity of demand by percentage method 3. Explain the conditions of producer's equilibrium. 4. Explain any three factors that determine supply of a commodity. 5. Explain the distinction between budget set and budget line. When can a budget line shift?
B.St.	1. Discuss the benefits that a nation receives when they engage in international business? 2. Explain the conditions of producer's equilibrium. 3. Explain any three factors that determine supply of a commodity. 4.Explain the distinction between budget set and budget line. When can a budget line shift? 5. What are the characteristics of a perfectly competitive market?
Accountancy	Q1 : Prepare accounting equation on the basis of the following: (a) Harsha started business with cash Rs 2,00,000 (b) Purchased goods from Naman for cash Rs 40,000 (c) Sold goods to Bhanu costing Rs 10,000/- Rs 12,000 (d) Bought furniture on credit Rs 7,000 Q2 : Prepare accounting equation from the following: (a) Kunal started business with cash 2,50,000 (b) He purchased furniture for cash 35,000 (c) He paid commission 2,000 (d) He purchases goods on credit 40,000 (e) He sold goods (costing Rs 20,000) for cash 26,000 Q3 : Mohit has the following transactions, prepare accounting equation: (a) Business started with cash 1,75,000 (b) Purchased goods from Rohit 50,000 (c) Sales goods on credit to Manish (Costing Rs 17,500) 20,000 (d) Purchased furniture for office use 10,000 (e) Cash paid to Rohit in full settlement 48,500 (f) Cash received from Manish 20,000 (g) Rent paid 1,000 (h) Cash withdrew for personal use 3,000 Q4 : Rohit has the following transactions: (a) Commenced business with cash 1,50,000 (b) Purchased machinery on credit 40,000 (c) Purchased goods for cash 20,000 (d) Purchased car for personal use 80,000 (e) Paid to creditors in full settlement 38,000 (f) Sold goods for cash costing Rs 5,000 4,500 (g) Paid rent 1,000 (h) Commission received in advance 2,000 Q5 : Use accounting equation to show the effect of the following transactions of M/s Royal Traders: (a) Started business with cash 1,20,000 (b) Purchased goods for cash 10,000 (c) Rent received 5,000 (d) Salary outstanding 2,000 (e) Prepaid Insurance 1,000 (f) Received interest 700 (g) Sold goods for cash (costing Rs 5,000) 7,000 (h) Goods destroyed by fire 500 Q6 : Show the accounting equation on the basis of the following transaction: (a) Udit started business with: (i) Cash (ii) Goods (b) Purchased building for cash (c) Purchased goods from Himani (d) Sold goods to Ashu (Cost Rs 25,000) (e) Paid insurance premium (f) Rent outstanding (g) Depreciation on building (h) Cash withdrawn for personal use (i) Rent received in advance (j) Cash paid to Himani on account (k) Cash received from Ashu

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Computer	1. Write a query to create a table students with the following columns: o id (INT, primary key) o name (VARCHAR(100) o age (INT) o email (VARCHAR(255) 2. Create a table employees with the following structure: o emp_id (INT, primary key, auto-increment) o first_name (VARCHAR(50) o last_name (VARCHAR(50) o salary (DECIMAL(10,2) o hire_date (DATE) 3. How would you create a database named school? 4. Insert a new record into the students table where: o id = 1 o name = 'John Doe' o age = 20 o email = 'john.doe@example.com' 5. Add multiple records to the employees table with the following data: o emp_id = 101, first_name = 'Alice', last_name = 'Smith', salary = 50000.00, hire_date = '2023- 01-15' o emp_id = 102, first_name = 'Bob', last_name = 'Brown', salary = 60000.00, hire_date = '2022- 07-10' 6. Write a query to add a record to the employees table, leaving out the emp_id column (auto-increment). 7. How would you add a new column phone_number (VARCHAR(15) to the students table?