DAV BR PUBLIC SCHOOL, BINA
Session (2024-25)
Class: XI
Integrated Assignment No: 01

Date Posted	05-10 -24	Expiry Date	15-10-2024

	PHYSICS
1.	Write the following practical in your practical record under the following heads . Aim, apparatus required, theory and formula, diagram, observation tables, precautions, sources of errors Diameter and radius by screw gauge.
2.	Radius of curvature by spherometer.
3.	Coefficient of friction by normal reaction and friction graph.
4.	Unknown mass by parallelogram law of vector addition
5.	Diameter and radius by vernier calipers.
6.	Density of the material of a metallic cuboid by using vernier calipers.
7.	Capacity of calorimeter by vernier calipers.
8.	Effective length of a second's pendulum or acceleration due to gravity using a simple pendulum by plotting l-T^2 graph.

CHEMISTRY

1.	Which quantity out of Δ_rG and $\Delta_rG^\ominus$ will be zero at equilibrium?
2.	When in thermodynamics, a process is called reversible?
3.	Although heat is a path function but heats absorbed by the system under certain specific conditions is independent of path. What are those conditions? Explain.
4.	For the reaction $X_2Y_4(I) \rightarrow 2\ XY_2(g)$ at 300 K the values of ΔU and ΔS are 2 kCal and 20 Cal K^{-1} respectively. The value of ΔG for the reaction is
5.	A open vessel at 300 K is heated until 3/5 of the air in it has been expelled. Assuming that volume of the vessel remain constant, find the temperature to which the vessel has been heated?
6.	Standard molar enthalpy of formation, $\Delta_f H^\ominus$ is just a special case of enthalpy of reaction, $\Delta_r H^\ominus$. Is the $\Delta_r H^\ominus$ for the following reaction same as $\Delta_f H^\ominus$? Give the reason for your answer. $CaO(s) + CO2(g) \rightarrow CaCO3(s)$; $\Delta_f H^\ominus = -178.3$ kJ mol^{-1}
7.	Expansion of gas in a vacuum is called free expansion. Calculate the work is done and the change in internal energy when 1 litre of an ideal gas expands isothermally into a vacuum until its total volume is 5 litre?
8.	Write all the laws of thermodynamics.
9.	A sealed iron container 4 m^3 of nitrogen gas at .99 atm and 25° C is thrown into fire where the tempertaure is 1100° . What is the new pressure of the gas in the container assuming constant volume and ideal behaviour?
10.	Calculate the volume occupied by 8.8 g of CO2 at 31.1 ° C and 1 Bar pressure

BIOLOGY	
1	Complete the notes of all the chapters taught in the class and learn the concepts.
2	Visit the nearby Botanical garden. Collect one plant and make a herbarium of it..
3	Make a 3D model showing T.S of Dicot stem or Monocot Root using clay.
4.	Complete your Journal work.
5.	Prepare a PPT on any one chapter of Biology of your choice and present the concept to your classmates after the school reopens.
6.	Make a collage or a Chart on phylum/ Groups belonging to plant or Animal kingdom
7.	Complete your notebook work in all aspects.

	MATHS
S.NO	
1.	If the term free from x in the expansion of $\left(\sqrt{x} - \dfrac{k}{x^2}\right)^{10}$ is 405, find the value of k.
2.	Find the middle term in the expansion of $\left(2ax - \dfrac{b}{x^2}\right)^{12}$.
3.	Show that $2^{4n+4} - 15n - 16$, where $n \in \mathbf{N}$ is divisible by 225.
4.	Find the coefficient of x^{50} after simplifying and collecting the like terms in the expansion of $(1 + x)^{1000} + x\,(1 + x)^{999} + x^2\,(1 + x)^{998} + ... + x^{1000}$.
5.	Find the term independent of x, $x \neq 0$, in the expansion of $\left(\dfrac{3x^2}{2} - \dfrac{1}{3x}\right)^{15}$.
6.	Find the coefficient of x in the expansion of $(1 - 3x + 7x^2)\,(1 - x)^{16}$.

	ENGLISH
1	Write a speech in 120-150 words to be delivered in the school assembly on the topic, "World peace and harmony is at stake today".
2	Write a debate in 120-150 words on the topic, " The Indian Education System needs a revamp". Write your debate either For or Against the motion on the given topic.

ECONOMICS

1.	Explain in brief,the principles to be followed while preparing a table
2.	What do you mean by Pie Diagram?Discuss the steps involved in constructing it.
3.	What is an ogive curve?How it is constructed?
4.	What are the main degrees of Price Elasticity of Demand?
5.	What are the main factors affecting price elasticity of demand?
6.	Price Elasticity of Demand of a good is (-) 3. If the price rises from ? 10 per unit to X12 per unit, what is the percentage change in demand?

BUSINESS STUDIES

1.	Explain various principles of insurance?
2.	Distinguish between life insurance and General insurance
3.	Elaborate the steps involved in Online Trading.
4.	What are the threats to e-transactions? Which measures have been devised for their protection?
5.	"E-commerce is the need of the hour". Comment.
6.	"E-commerce is giving way to a paperless society and the government is supporting it." Substantiate.
7.	Discuss the utility of E commerce in: a) Health b) Education c) Governance

	ACCOUNTANCY
1.	Explain the limitations of accounting.
2.	Explain any three qualitative characteristics of accounting
3.	Distinguish between Accrual and cash basis of accounting.
4.	Describe the advantages of Double entry system of accounting.
5.	Define the following terms: (a) Deferred Revenue Expenditure (b) Revenue (c) Fictitious Asset (d) Bill Receivable (e) Bad debts (f) Gain
6.	Write 10 transactions related to Cash and Bank and prepare Double column cash book from them
7.	What are accounting standards, List the accounting standards required to prepare the financial statements of a business enterprise.
8.	Source Documents are evidence of transactions that have taken place and contain details like the amount, date, name of the concerned party, etc. In context of above a. Define the following : • Cash Memo • Invoice • Cheque • Pay in slip • Receipt b. Students are required to collect source documents like receipts, bills, counter foils of bank slips etc. and paste them in their project file. Minimum five such documents have to be pasted (one sample for each document)
9.	Take 20 imaginary transactions of a business organization of your choice, record them in a journal, post them in ledger accounts and prepare the trial balance. Present the transactions in a form of a project report.

COMPUTER SCIENCE

1.	**Knowledge (Remembering)** **Define** the terms "algorithm" and "data structure." **List** the different types of data structures. **Identify** the key components of a computer system.
2.	**Comprehension (Understanding)** **Explain** the concept of recursion. **Describe** the difference between a compiler and an interpreter. **Summarize** the steps involved in software development.
3.	**Analysis (Analyzing)** **Compare** the advantages and disadvantages of different programming paradigms (e.g., procedural, object-oriented, functional). **Evaluate** the impact of AI on society. **Analyze** the security implications of cloud computing.
4.	**Synthesis (Creating)** **Create** a presentation on the history of computer programming.
5.	**Evaluation (Evaluating)** **Assess** the effectiveness of different network topologies. **Critique** the ethical implications of data mining.

	APPLIED MATHS
1.	The sum of first four terms of an A.P. is 56. The sum of the last four terms is 112. If the first term is 11, then find the number of terms.
2.	The ratio of the sums of m and n terms is $m^2:n^2$. Show that the ratio of mth and nth terms is $(2m - 1): (2n - 1)$.
3.	Find three numbers in G.P. whose product is 216 and the sum of their product in pairs is 156.
4.	The 5th, 8th and 11th terms of a G.P, are p, q and s respectively. Show that $q^2 = p\,s$.
5.	The sums of n terms of two arithmetic progressions are in the ratio $(5n+4):(9n +6)$. Find the ratio of their 18th terms.