



P.V.G.'s
Muktangan English School & Jr. College,
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Annual Examination (2025-26)
Standard - XI

Subject : Chemistry

Marks : 70

Date : 01.04.2026

Time : 8.30 am to 11.30 am

Instructions :

- 1) Use of log table is allowed. Use of calculator is not allowed.
- 2) Figures to the right indicate full marks.
- 3) Write balanced chemical equations wherever required.
- 4) The question paper is divided into four sections.

Section A : Each 1 mark

Section B : Each 2 marks

Section C : Each 3 marks

Section D : Each 4 marks

- 5) For each multiple choice type of question . Write the correct answer along with it's alphabets.

Section A

Q.1 Select and write correct answers.

(15)

- 1) _____ hybridization present in ethene molecule.
a) sp^3 b) sp c) sp^2 d) sp^3d^2
- 2) _____ grams of H_2O are present in 0.25 mol of it.
a) 4.5 b) 0.25 c) 18 d) 5.4
- 3) _____ molecule shows p-p overlap.
a) H- F b) BF_3 c) F_2 d) H_2
- 4) Volume of CO_2 occupied by 0.5 mole of CO_2 gas measured at STP is _____.
a) 112 dm^3 b) 1.12 dm^3 c) 11.2 dm^3 d) 22.4 dm^3
- 5) Arsenic based antibiotic is _____.
a) azodye b) prontosil c) salvarsan d) sulphapyridine
- 6) _____ reagent is used in Wurtz reaction.
a) NaOH b) Na/ dry ether c) Na/ Hg d) NaCl
- 7) Heterolytic cleavage of $CH_3 - Br$ will form _____.
a) $^{\oplus}CH_3$ b) $^{\ominus}CH_3$ c) $^{\oplus}Br$ d) $Br^{\bullet}$

- 8) Homolytic fission is favoured in presence of _____.
 a) polar solvents b) U. V. radiation c) H_2 gas d) O_2 gas
- 9) The H- C- H bond angle in ethene molecule is _____.
 a) $109^\circ 28'$ b) 180° c) 120° d) 98°
- 10) _____ is the type of intermolecular interaction present in HCl molecule.
 a) Hydrogen bonding b) Dipole- dipole
 c) Ion- dipole d) Covalent bonding
- 11) Interactive forces are _____ in ideal gas.
 a) nil b) small
 c) large d) same as that of real gas
- 12) The oxidation number of 'S' in H_2SO_4 is _____.
 a) +3 b) -2 c) +6 d) 0
- 13) Which of the atomic number represent the s- block elements.
 a) 7, 15 b) 3, 12 c) 6, 14 d) 9, 17
- 14) Adsorption and absorption occur simultaneously is known as _____.
 a) adsorption b) absorption c) desorption d) sorption
- 15) $H_2O_{(l)} \rightleftharpoons H_2O_{(g)}$ is an example of _____ process.
 a) reversible chemical b) irreversible physical
 c) reversible physical d) irreversible chemical

Q.2 Answer the following in short.

(10)

- 1) Define : Unit
- 2) Write the name of radioactive isotope of hydrogen.
- 3) What are s- block elements?
- 4) What is drug?
- 5) Write medicinal property of turmeric.
- 6) Write the unit of diffusion.
- 7) How many π bonds present in Pent- 1- en- 4-yne?
- 8) Write the types of hydrogen bonding.
- 9) State : Law of mass action
- 10) Write any two factors that affect adsorption of gases on solids.

Section B

Attempt the following. (Any Eight)

(16)

- Q.3 What is the action of following reagents on Zn metal?
a) aq.HCl b) aq.NaOH
- Q.4 Arjun purchased 250 g glucose. ($C_6H_{12}O_6$) for Rs.40. Find the cost of glucose per mole.
(Molecular mass of glucose is 180 g/mol)
- Q.5 Write the general reaction for the action of X_2 on group I and group II elements.
- Q.6 Give reason : Atomic size decreases across the period
- Q.7 Define : a) Oxidant b) Reductant
- Q.8 Draw two position isomers of pentene.
- Q.9 What is primary and secondary carbon?
- Q.10 Distinguish between adsorption and absorption (any 4 points)
- Q.11 Write any 4 names of measurable properties of gases.
- Q.12 Identify A and B in following reactions.
a) $CH_3 - CH_2 - Br + 2[H] \xrightarrow{Zn, HCl} \underline{A} + HBr$
b) $CH_3 - Mg - I + \underline{B} \xrightarrow[\text{ether}]{\text{dry}} CH_4 + MgI(OH)$
- Q.13 Calculate the pressure in atmosphere of 1.0 mole of helium in a 2.0 dm^3 container at $20.0^\circ C$.

Section C

Attempt any Seven of the following.

(21)

- Q.14 What is ionization enthalpy?
What is its trend
- down in the group
 - across the period
- Q.15
- Write any two characteristics of 's' block elements.
 - Find the formula mass of $\text{Cu}(\text{NO}_3)_2$
[At.mass of Cu = 63.5u , N= 14u , O = 16 u]
- Q.16 Write the electronic configuration of following elements.
- P (z = 15)
 - V (z = 23)
 - Ar (z = 18)

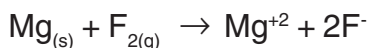
Q.17 What is the action of following reagents on benzene ?

- a) H_2/Ni
c) Cl_2/Fe in dark

Q.18 Write the reactions for action of 2 moles of HBr on acetylene. Write any two uses of acetylene.

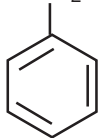
Q.19 What is soap? Explain mechanism of cleansing action with diagram.

Q.20 Identify whether the following reaction is redox or not. State oxidant and reductant theirin.



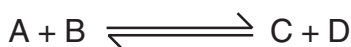
Q.21 Write the IUPAC name of following compounds.

- a) NH_2
- b) $\text{HC} \equiv \text{C} - \text{CH}_2 - \text{CH} = \text{CH} - \text{CH}_3$



- c)
$$\begin{array}{ccccccc} \text{CH}_3 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_3 \\ & & | & & & & \\ & & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_3 \end{array}$$

Q.22 Derive an expression for equilibrium constant K_c for the reaction.



Section D

Attempt any two of the following.

(8)

Q.23 Draw outline of modern Periodic table.

Q.24 Explain in detail sp^3 hybridization in methane molecule with respect to

- Hybridization
- Orbital overlap
- Bond angle and geometry
- Diagram

Q.25) a) State Boyle's law.

- b) The volume of a given mass of a gas at 0°C is 2dm^3 , Calculate the new volume of the gas at constant pressure when the temperature is increased by 10°C .

