

CHRIST THE KING MATRIC.HR.SEC.SCHOOL.
I MID TERM TEST
CHEMISTRY

MARKS: 50
1hr=10

STD : XI

I. CHOOSE THE CORRECT ANSWER:

- Which of the following represents 180g of water?
a) 5 moles of water b) 90 moles of water
c) 6.022×10^{23} moles of water d) 6.022×10^{24} molecules of water
- When 22.4 litres of H_2O_2 is mixed with 11.2 litres of $Cl_{2(g)}$, each at 273k and 1 atm the moles of $HCl_{(g)}$ formed is equal to,
a) 2 moles of HCl b) 0.5 moles of HCl c) 1.5 moles of HCl d) 1 moles of HCl
- Which one of the following is used as a standard for atomic mass.
a) $^{12}_6C$ b) $^{12}_7N$ c) $^{12}_6C$ d) $^{14}_6C$
- The maximum number of electron in a sub-shell is given by the expression
a) $2n^2$ b) $2l + 1$ c) $4l + 2$ d) none of these
- Splitting of spectral lines in an electric field is called
a) Zeeman effect b) Shielding effect c) Compton effect d) Stark effect
- The value of the gas constant 'R' is
a) 0.082 dm³ atm b) 0.987 cal mol⁻¹ k⁻¹ c) 8.3 J mol⁻¹ k⁻¹ d) 8 erg mol⁻¹ k⁻¹
- Maximum deviation from ideal gas is expected from
a) CH_4 b) NH_3 c) H_2 d) N_2
- Heat of combustion is always
a) Positive b) Negative c) Zero d) either positive (or) negative
- Which of the following is not a thermodynamic function?
a) internal energy b) enthalpy c) entropy d) fractional energy
- Which one of the following shows functional isomerism?
a) Ethylene b) Propane c) Ethanol d) CH_2Cl_2

II. ANSWER ANY FIVE QUESTIONS: (QN.NO: 17 IS COMPULSORY) 5x2=10

- What do you understand by the term mole?
- Define Orbital.
- State and explain Pauli's exclusion principle.
- What is inversion temperature?
- Distinguish Real gas and ideal Gas.
- What is lattice energy?
- What is Functional Group?
(i) $C_6H_{12}O_6$ (Glucose) (ii) NH_2CONH_2 (Urea)

III. ANSWER ANY FIVE QUESTIONS: (QN.NO: 25 IS COMPULSORY) 5x3=15

- Define Equivalent Mass.
- How many orbitals are possible for $n = 4$?
- The stabilisation of half filled d-orbital is more pronounced than that of p-orbital why?
- Explain the classification of Organic compound.
- Give the IUPAC name
(i) $CH_2 = CH - CH = CH_2$ (ii) $CH_3 - CH_2 - CH - OH$

|
 CH_3
- Distinguish between diffusion and effusion.
- Calculate the Oxidation number. (i) C in CO_2 (ii) S in H_2SO_4 (iii) Mn in $KMnO_4$

IV. ANSWER IN DETAIL: 3x5=15

- Calculate the empirical and molecular formula of a compound containing 76.6% carbon, 6.38% Hydrogen and rest oxygen its vapour density is 47. (OR)
b) (i) Derive de-broglie equation (3)
(ii) State Heisenberg uncertainty principle. (2)
- Explain the postulates of Bohr's Quantum model. (OR)
b) (i) Explain the General character of organic compound (3)
(ii) State Hess's law. (2)
- List the characters of Internal energy (5) (OR)
b) Derive the value of critical constant from Vanderwalls equation.

* * * * *