

SECTION 'A'

MULTIPLE CHOICE QUESTIONS (33 Marks)

Note: i) This section consists of 33 part questions and all are to be answered. Each question carries ONE marks.

Q.1 Choose the correct answer for each from the given options:

- (1) 3.01×10^{23} molecules of oxygen gas at STP occupy a volume of:
 ☆ 22.4 dm^3 ☆ 224 dm^3 ☆ 11.2 dm^3 ☆ 2.24 dm^3
- (2) 602.10 has significant figures:
 ☆ 3 ☆ 4 ☆ 5 ☆ 6
- (3) One mole of H_2O contains this number of Hydrogen atoms:
 ☆ 6.02×10^{23} ☆ 1.204×10^{24}
 ☆ 3.01×10^{23} ☆ 1.204×10^{23}
- (4) The number of molecules in this pair are same:
 ☆ $10 \text{ gm } \text{H}_2$ and $10 \text{ gm } \text{CH}_4$ ☆ $10 \text{ gm } \text{H}_2$ and $50 \text{ gm } \text{CH}_4$
 ☆ $10 \text{ gm } \text{H}_2$ and $80 \text{ gm } \text{CH}_4$ ☆ $10 \text{ gm } \text{H}_2$ and $16 \text{ gm } \text{CH}_4$
- (5) The vapour pressure of water at 100°C will be:
 ☆ 760 torr ☆ 76 torr ☆ 14.2 psi ☆ 100 torr
- (6) Number of crystal system on the basis of unit cell is:
 ☆ 5 ☆ 6 ☆ 7 ☆ 8
- (7) Capillary action in liquids is due to:
 ☆ Viscosity ☆ Surface Tension
 ☆ Density ☆ Fluidity
- (8) The rate of diffusion of CO_2 is equal to:
 ☆ CH_4 ☆ CO ☆ SO_2 ☆ C_3H_8
- (9) The $(n + l)$ value for 5d orbital is:
 ☆ 4 ☆ 5 ☆ 6 ☆ 7
- (10) By emitting α particles ${}_{92}\text{U}^{238}$ converts into:
 ☆ ${}_{82}\text{Pb}^{214}$ ☆ ${}_{84}\text{Po}^{210}$ ☆ ${}_{80}\text{Ac}^{227}$ ☆ ${}_{90}\text{Th}^{234}$
- (11) The maximum number of electrons in a particular sub-energy level is:
 ☆ $2n^2$ ☆ n^2 ☆ $(2l + 1)$ ☆ $2(2l + 1)$
- (12) e/m value is minimum for positive rays when discharge tube contains:
 ☆ Hydrogen ☆ Helium ☆ Nitrogen ☆ Oxygen
- (13) The bond energy of this molecule is maximum
 ☆ CH_4 ☆ O_2 ☆ N_2 ☆ Cl_2
- (14) This molecule has the maximum bond angle:
 ☆ NH_3 ☆ CO_2 ☆ SO_2 ☆ H_2O
- (15) This hydrogen halide has the highest percentage of ionic character:
 ☆ HF ☆ HCl ☆ HBr ☆ HI
- (16) This molecule has zero dipole moment:
 ☆ NH_3 ☆ CO_2 ☆ H_2O ☆ HCl
- (17) This is an intensive property:
 ☆ Density ☆ Mass ☆ Mole ☆ Volume
- (18) 1 Cal is equal to:
 ☆ 0.239 J ☆ 1.98 J ☆ 4.184 J ☆ 8.314 J
- (19) This colour has the shortest wavelength:
 ☆ Red ☆ Blue ☆ Violet ☆ Orange
- (20) 400 J of heat is supplied to a system at constant volume, the change in internal energy is:
 ☆ 400 J ☆ -400 J ☆ 300 J ☆ 200 J
- (21) For the reaction $2\text{NH}_3 \rightleftharpoons \text{N}_2 + 3\text{H}_2$ the relation between K_c and K_p is:
 ☆ $K_p = K_c$ ☆ $K_p > K_c$ ☆ $K_p < K_c$ ☆ $K_p < K_c$
- (22) The extent reaction will be maximum for the K_c value:
 ☆ 10^{-3} ☆ 0.1 ☆ 10 ☆ 10^3
- (23) In an exothermic reaction increase of temperature favours:
 ☆ Forward Reaction ☆ Reverse Reaction
 ☆ to remain in equilibrium ☆ Irreversible Reaction
- (24) Precipitation occur if the product of ionic concentration is:
 ☆ greater than K_{sp} ☆ less than K_{sp}
 ☆ equal to K_{sp} ☆ equal to K_c
- (25) When 2 moles of solute are present in 2 dm^3 of solution, then concentration of solution is:
 ☆ 0.5M ☆ 1M ☆ 2M ☆ 3M
- (26) This one has the highest pH value:
 ☆ 0.01 M NaOH ☆ 0.02M HCl
 ☆ 0.01M NaHCO_3 ☆ 0.1M H_2SO_4
- (27) The oxidation number of Cr in $\text{Cr}_2\text{O}_7^{2-}$ is:
 ☆ +2 ☆ +4 ☆ +6 ☆ +7
- (28) Universal indicator in acid gives this colour:
 ☆ Green ☆ Yellow ☆ Pink ☆ Red
- (29) Human body is an example of:
 ☆ Open System ☆ Closed System
 ☆ Isolated System ☆ Isochoric System
- (30) The reaction $2\text{NO}_2 \rightarrow 2\text{NO} + \text{O}_2$ has order:
 ☆ Zero ☆ 1st ☆ 2nd ☆ 3rd
- (31) These reactions have low value of activation energy:
 ☆ Slow ☆ Fast ☆ Moderate ☆ Ionic
- (32) The change in concentration of reacting substance in a unit time is called:
 ☆ Rate of Reaction ☆ Rate Constant
 ☆ Rate Law ☆ Specific Rate Constant
- (33) The threshold energy of a chemical reactions is 31 KJ/mole and the average internal energy of the reactant is 12 KJ/mole the activation energy will be:
 ☆ 55 KJ/mole ☆ 43 KJ/mole
 ☆ 25 KJ/mole ☆ 19 KJ/mole