CHAPTER # 01 FUNDAMENTAL CONCEPT OF CHEMISTRY

SUB TOPIC	Multiple Choice Question	ANSWER
1.2 Significant figures	**1.** **This number has five significant figures:** a. 3.0031 b. 2202 c. 10000 d. 1.000	**3.0031**
1.5 Empirical Formula	**2.** **9. 6600 contains significant figures.** a. One b. two c. three d. four	**two**
	3. **Round off 7.865 in to two significant figures:** a. 7.8 b. 7.7 c. 7.900 d. 7.9	**7.9**
1.6 Molecular Formula	**4.** **The formula, which expresses the actual number of each kind of atom present in themolecule of a compound, is called** a. molecular formula b. empirical formula c. structural formula d. ionic formula	**molecular formula**
	5. **The empirical Formula of a compound indicates,** a. Actual no. of atoms b. least no. of atom c. both a and b d. none	**least no. of atom**
	6. **Atomic mass, molecular mass or formula mass expressed in grams is called** a. Molar mass b. mole c. molar volume d. both a and b	**Molar mass**
1.8 Calculations Based onchemical equation	**7.** **Atomic mass of gold is 197, the number of moles of one gram of gold is:** a. 6.03×10^{-23} b. 5.076×10^{-3} c. 4.076×10^{-3} d. both b & c	**5.076×10^{-3}**

	8. The mass of 6.02×10^{23} molecules of water is a. 1.8g b. 18g c. 180g d. none of these	**18g**
1.9 Limiting reactant	**9.** The formula, which gives the simple ratio of each kind of atoms present in the molecule ofcompound, is called a. molecular formula b. empirical formula c. structural formula d. ionic formula	**Empirical formula**
	10. Two moles of water contains molecules. a. 6.02×10^{23} b. 6.02×10^{22} c. 1.204×10^{23} d. 1.204×10^{24}	**1.204×10^{24}**
	11. 9 grams of water is equal to a. 1 mol b. 0.5 mol c. 1.2 mol d. 1.5 mol	**0.5 mol**
	12. 6600 contains significant figures. a. One b. Two c. Three d. four	**Two**
	13. While considering the full of significant figures the simplified result of 3.1+14.367 is: a. 17.467 b. 17.47 c. 17.50 d. 18	**18**
	14. The number of moles in 58.5 gm of NaCl is: a. 8.5 b. 1 c. 35.5 d. 23	**1**

CHAPTER # 02 STATES OF MATTER

SUB TOPIC	Multiple Choice Question	ANSWER
2.1 Kinetic Theory	**1.** **Crystalline solids are** a) Asymmetrical b) symmetrical c) both a and b d) none	**b) symmetrical**
2.3 Gas laws	**2.** **Diamond and graphite are** a) Isomorphous b) polymorphous c) allotropes d) both a and c	**c) allotropes**
	3. **A small building block which shows whole information about crystal is** a) Crystal b) unit cell c) both a and b d) none	**b) unit cell**
2.4 Ideal Gas	**4.** **Liquid molecules show** a) Brownian motion b) zigzag motion c) rotatory motion d) all of thes20. 2	**a) Brownian motion**
	5. **Movement of one liquid molecule into the other liquid is called** a) Osmosis b) diffusion c) both a and b d) none	**b) diffusion**
2.7 Viscosity	**6.** **Vapour pressure of a liquid is measure at** a) Boiling point b) melting point c) equilibrium state d) none	**a) Boiling point**
2.8 Surface Tension	**7.** **He expressed the relation between volume and temperature of a gas at constant Pressure** a) Charles b) Boyle c) Gay-Lussac d) Avogadro	**a) Charles**
	8. **Boiling point of water in Celsius scale is** a) $273C^0$ b) $100C^0$ c) $-273C^0$ d) none of these	**b) $100C^0$**
2.12 Types of crystal	**9.** **Boiling point of water in Fahrenheit scale is** a) 50F b) 100F c) 110F d) 212F	**d) 212F**

		10. The highest value of viscosity is of: a) Water b) Ether c) Benzene d) Mercury	**c) Benzene**
2.13	Isomorphism		
		11. _____ reduces surface tension: a) Oil b) Detergent c) Caustic soda d) Both b and c	**d) Both b and c**
2.14	Polymorphism	**12.** Water can exist in states a) one b) two c) three d) four	**c) three**
		13. In general gas equation (PV=nRT), R is called a) Gas constant b) universal gas constant c) ideal gas constant d) all of these	**b) universal gasconstant**
		14. The temperature at which volume of a gas theoretically becomes zero is called a) Critical temperature b) transition temperature c) absolute zero d) both a and b	**c) absolute zero**
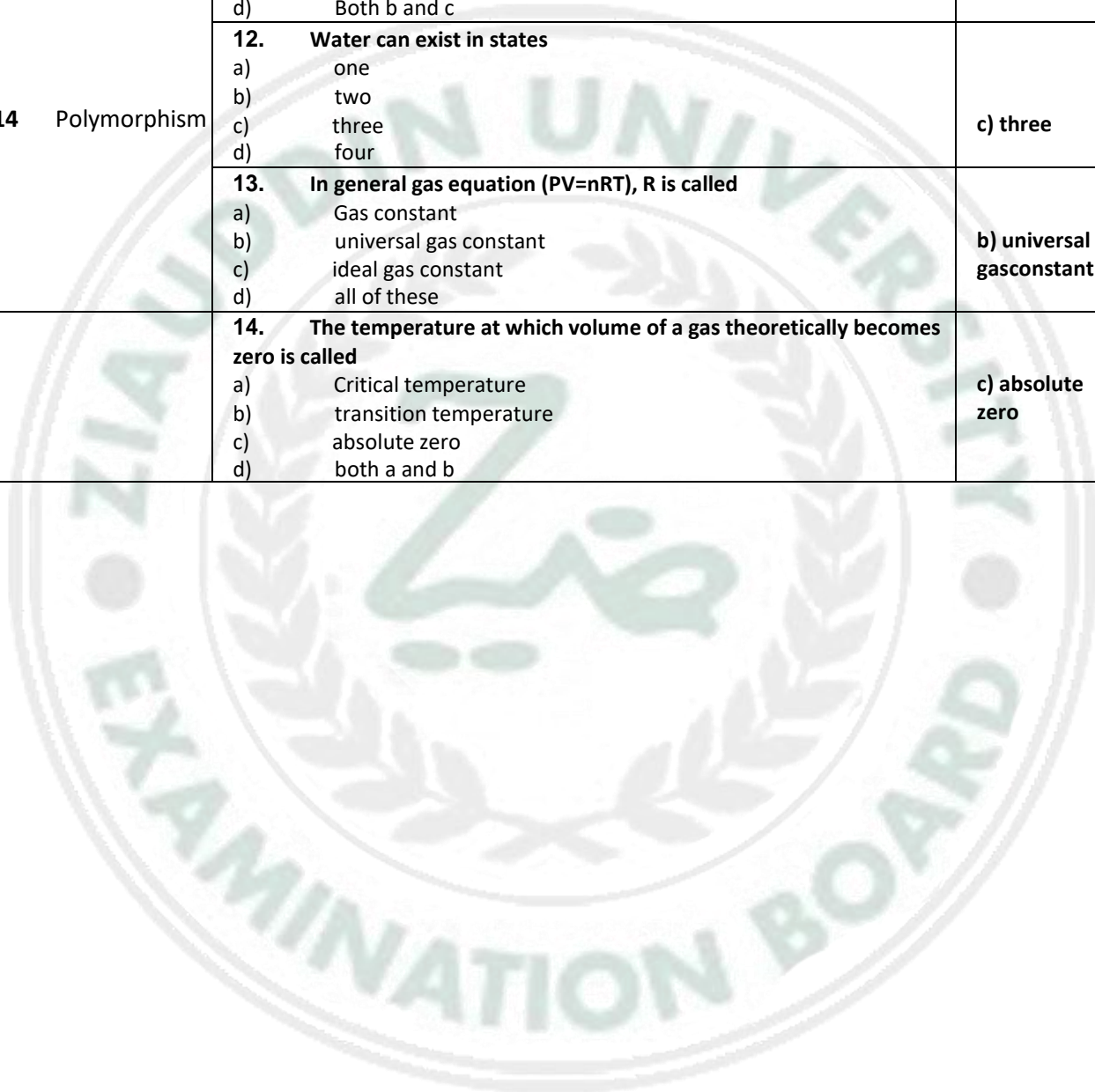
CHAPTER # 03 ATOMIC STRUCTURE

SUB TOPIC	Multiple Choice Question	ANSWER
3.2 Crookes's tube Experiment	**1.** The maximum number of electrons that can accommodated by a p-orbital is a)2 b) 4 c) 6 d) 10	c) 6
3.4 Radioactivity	**2.** **A proton is** a) a helium ion b) a positively charged particle c) a negatively charged particle d) None of these	b) a positively charged particle
3.5 Chadwick Experiment	**3.** **The fundamental particles of an atom are** a) Electrons and protons b) electrons and neutrons c) Electrons d) Protons, Neutrons and electrons	d) Protons, Neutrons and electrons
	4. **Neutrons were discovered by.** a) Rutherford b) Bohr c) Chadwick d) Dalton	c) Chadwick
3.7 Plank's Quantum Theory	**5.** **Electrons are always filled in order of increasing energy. This statement is relate to** a) Pauli's Exclusion Principleb)Uncertainty Principle c) Aufbau Principle d) none of these	c) Aufbau Principle
3.8 Spectra	**6.** **Which model says that, an atom consists of small, dense, positively charged nucleus,which is surrounded by electrons, revolving around it:** a) Max Plank b) Neil Bohr c) Rutherford d) Moseley	c) Rutherford
3.9 Rutherford's Model of anAtom	**7.** **These radioactive rays are material in nature** a) Alpha b) Beta c) Gamma d) both a & b	d) both a & b
3.11 Bohr's Theory	**8.** **The energy required to break a chemical bond to form neutral atoms is called** a) Ionization Potential b) Electron Affinity c) Bond Energy d) electronegativity	c) Bond Energy
3.12 Bohr's theory & Hydrogenatom	**9.** **Sodium ion is iso-electronic with:** a) Ne b) Mg^{2+} c) Al^{3+} d) All of these	d) All of these

3.13 Determination of energy	**10.** Lyman Series of spectral lines appear in the region a) Ultraviolet b) Infra red c) Visible d) far infra red	**a) Ultraviolet**
	11. Nitrogen has three unpaired electrons, this information is given by: a) Hund's rule b) Pauli's exclusion principle c) (n+l) rule d) Aufbau principle	**b) Pauli's exclusion principle**
3.15 Heisenberg's UncertaintyPrinciple	**12.** When an electron falls from n=4 to n=2, the light rays belong to: a) Ultraviolet region b) Infra red region c) Visible region d) Infar infra red region	**c) Visible region**
3.16 Energy Level	**13.** Which of the following quantum number describes the shape of the orbital? a) Principle b) Azimuthal c) Spin d) Magnetic	**b) Azimuthal**
3.17 Orbitals & Quantumnumber	**14.** The electronic configuration of $_7N$ = 1s2, 2s2, 2px2, 2py1, 2pz0, the rule or principle violated is: a) Pauli's exclusion b) Aufbau c) (n+l) d) Hund's	**b) Aufbau**
3.18 Pauli's Exclusion Principle	**15.** When Beryllium was bombarded by alpha particles, the ray emitted is: a) Cathode ray b) Canal ray c) Proton d) Neutron	**d) Neutron**
3.19 Shapes of Orbitals	**16.** Phenomenon of radioactivity was discovered by: a) Rutherford b) Neil Bohr c) Henry Bacquerel d) Pierie curie	**c) Henry Bacquerel**
3.20 Electronic configuration	**17.** It consists of Helium Nuclei or Helium ion (He^{++}). a) alpha rays b) Beta rays c) gamma rays d) none of these	**a) alpha rays**

CHAPTER # 04   CHEMICAL BONDING

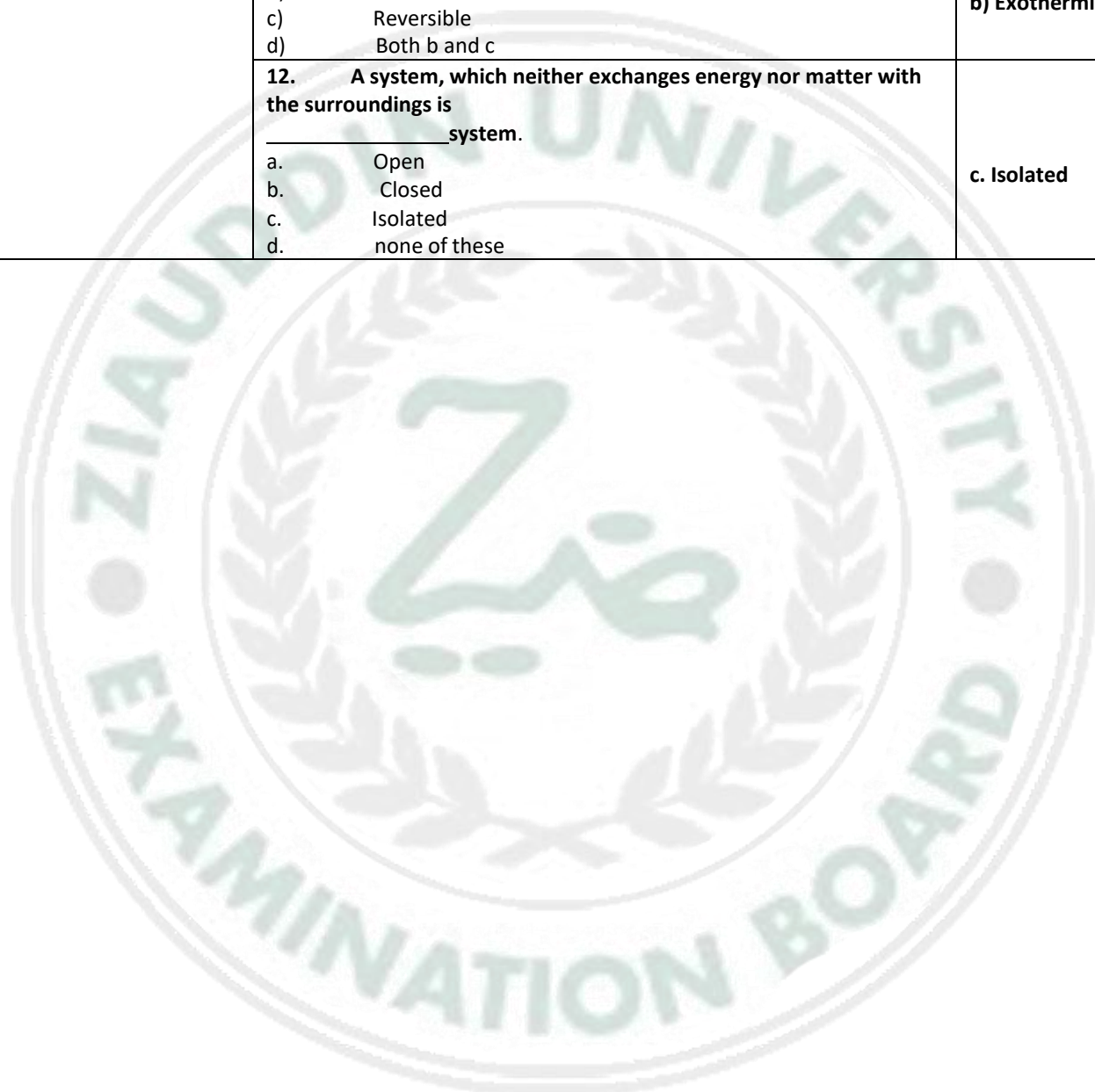| SUB TOPIC	Multiple Choice Question	ANSWER
4.2 Electrovalent OR Ionic Bond	**1.** The energy required to break a chemical bond to form neutral atoms is called a) Ionization Potential b) Electron Affinity c) Bond Energy d) electronegativity	**c) Bond Energy**
	2. The chemical bond present in H-Cl is a) Non Polar b) Polar Covalent c) Electrovalent d) co-ordinate covalent	**b) Polar Covalent**
	3. The most polar covalent bond out of the following is a) H-Cl b) H-F c) H-I d) none of these	**b) H-F**
4.5 Dipole Moment	**4.** A chemical bond in which an electron has been completely transferred from one atomto another. a) Ionic b) Covalent c) co-ordinate d) none of these	**a) Ionic**
4.7 Bond Energy	**5.** The sp³ orbitals are_____in shape. a) Tetrahedral b) Trigonal c) Tetragonal d) angular	**a)Tetrahedral**
	6. The shape of CH₄ molecule is_____.a)Tetrahedral b) Trigonal c) tetragonal d) angular	**a)Tetrahedral**
4.8 Sigma & Pi-Bond	**7.** Nitrogen atom in NH₃ has_____unshared electron pair. a) One b) two c) three d) none of these	**a) One**
	8. Bond is formed due to linear overlap. a) Sigma bond b) Pi bond c) Hydrogen bond d) none of these	**a)Sigma bond**
4.9 Hybridization	**9.** In ethene molecule there are _____ a) 4sigma and 1 pi bond b) 5sigma and 1 pi bond c) 3sima and 2 pi bond d) 2sigma and 3 pi bond	**b) 5sigma and 1 pibond**

4.10 Shape of Simple Molecule	**10.** The atom which accepts a lone pair of electron, is called: a) Lewis acid b) Lewis base c) Bronsted acid d) Bronsted base		**a) Lewis acid**
	11. **S.I unit of dipole moment**: a) Debye b) Coulomb c) Electron volt d) All of these		**a) Debye**
	12. **Bond angle in the molecule of C_2H_4 is of** a) 120° b) 109.5^o c) 180° d) 107°		**a)120^0**
	13. **A molecule of H_2O has_____structure.** a) Linear b) Trigonal c) tetragonal d) angular		**d) angular**
4.11 Hydrogen Bonding	**14.** **Shape of_____molecule is linear.** a) $BaCl_2$ b)BF_3 c)NH_3 d) none of these		**a)$BaCl_2$**
	15. **Repulsive force between electron pair in a molecule is maximum when it has an angleof_____.** a) 120° b)109.5^o c) 180° d) None of these		**c) 180°**
	16. **Best hydrogen bonding is found in_____.** a) HBr b) HCl c) HI d) HF		**d) HF**
	17. **The cloud of charge that surrounds two or more nuclei is called** a) Atomic b) Molecularc)Hybrid d) none of these		**b) Molecular**

CHAPTER # 05   CHEMICAL ENERGETICS

SUB TOPIC	Multiple Choice Question	ANSWER
5.1 Thermodynamic system	**1.** The reaction which gives positive enthalpy of heat ΔH+ 408KJ/mole represents _____reaction. a) Endothermic b) Exothermic c) Reversible d) None of these	**a) Endothermic**
	2. During which reaction container used becomes cold? a) Endothermic b) Exothermic c) Reversible d) Both b and c	**b) Exothermic**
5.2 First Law of thermodynamic	**3.** Combustion reaction is an example of: a) Endothermic b) Exothermic c) Reversible d) Both b and c	**b) Exothermic**
	4. Jug is an example of: a) Open system b) Closed system c) Isolated system d) None of these	**a) Open system**
5.5 Hess's Law	**5.** If heat content of product is less than reactant, the reaction is known as: a) Endothermic b) Exothermic c) Reversible d) Both b and c	**b) Exothermic**
	6. When work is done by the surrounding, the sign of 'w' will be: a) Positive b) Negative c) No sign d) none of these	**b) Negative**
	7. At constant pressure, the heat absorbed or evolved is used to: a) Change of enthalpy b) Change in internal energy of system c) Work done of the system d) none of these	**a) Change of enthalpy**
	8. All combination reaction reactions are usually: a) Endothermic b) Exothermic c) Reversible d) Both b and c	**b) Exothermic**
5.6 Heat of Formation	**9.** When work is done on the surrounding, the sign of 'w' will be: a) Positive b) Negative c) No sign d) Both	**a) Positive**

|		
10.	**The heat content of the reaction is represented by:** a) ΔE b) ΔH c) E d) H	**b) ΔH**
11.	**Neutralization reaction is an example of:** a) Endothermic b) Exothermic c) Reversible d) Both b and c	**b) Exothermic**
12.	**A system, which neither exchanges energy nor matter with the surroundings is _____system.** a. Open b. Closed c. Isolated d. none of these	**c. Isolated**

CHAPTER # 06   CHEMICAL EQUILIBERIUM

SUB TOPIC	Multiple Choice Question	ANSWER
6.2 Equilibrium state	**1.** At equilibrium the rate of forward reaction and the rate of reverse reaction are _____ . a. Equal b. changing c. Different d. none of these	**a. Equal**
6.3 The Law of Mass Action(Equilibrium Law)	**2.** Such reactions which proceed to forward direction only and are completed aftersometime are called_reaction. a. Irreversible b. Reversible c. Molecular d. none of these	**a. Irreversible**
6.4 Determination of Equilibrium constant	**3.** NH_3 is prepared by the reaction $N_2 + 3H_2 \longrightarrow 2NH_3$ $\Delta H = -21.9$ Kcal. The maximumyield of NH3 is obtained_____. a).At low temperature and high pressureb).at high temperature and low pressurec).at high temperature and high pressured).at low temperature and low pressure	**a).At low temperature andhigh pressure**
6.5 Application of The Law ofEquilibrium	**4.** The active masses of reacting substances mean: a).mol/dm^3 b). g/dm^3 c).mol/cm^{3}d). g/cm^3	**a).mol/dm^3**
	5. Solubility product constant is denoted by_____ . a).Kc b). Ksp c). Kr d).K	**b). Ksp**
6.6 Le-Chatlier's Principle	**6.** Ratio of acitive masses of products an reactants at equilibrium is called:a).Kc b). Ksp c).Kr d).Kf	**a).Kc**
6.7 Industrial Application of Le-Chatlier Principle	**7.** For an endothermic reaction, when temperature is increases the equilibrium willshifts: a). Forward b). Backwardc).Both d). None	**a). Forward**
	8. The substance which increases the rate of reaction but remains unchanged at the endof reaction, is called: a). Reactant b).Product c).Limiting reactant d). Catalyst	**d). Catalyst**

		9. The rate of chemical reaction is proportional to the product of the active masses of the reacting substances. This is the statement of: a). First law of thermodynamics b). Equilibrium law c). Hess's law d). Le-Chatelier's Principle	**b). Equilibrium law**
6.8	Solubility Product	**10. In Haber's process, catalyst used is:** a). Al2O3 b). V2O5 c). Pt d). Ni	**d). Ni**
		11. In an equilibrium, if concentration of product decreases reaction will move: a). Forward b). Backward c). Both d). Remain unchanged	**a). Forward**
		12. In an equilibrium; A + B === C ; when some amount of 'A' is added, reaction will shift towards: a). Forward b). Backward c). Both d). None	**a). Forward**
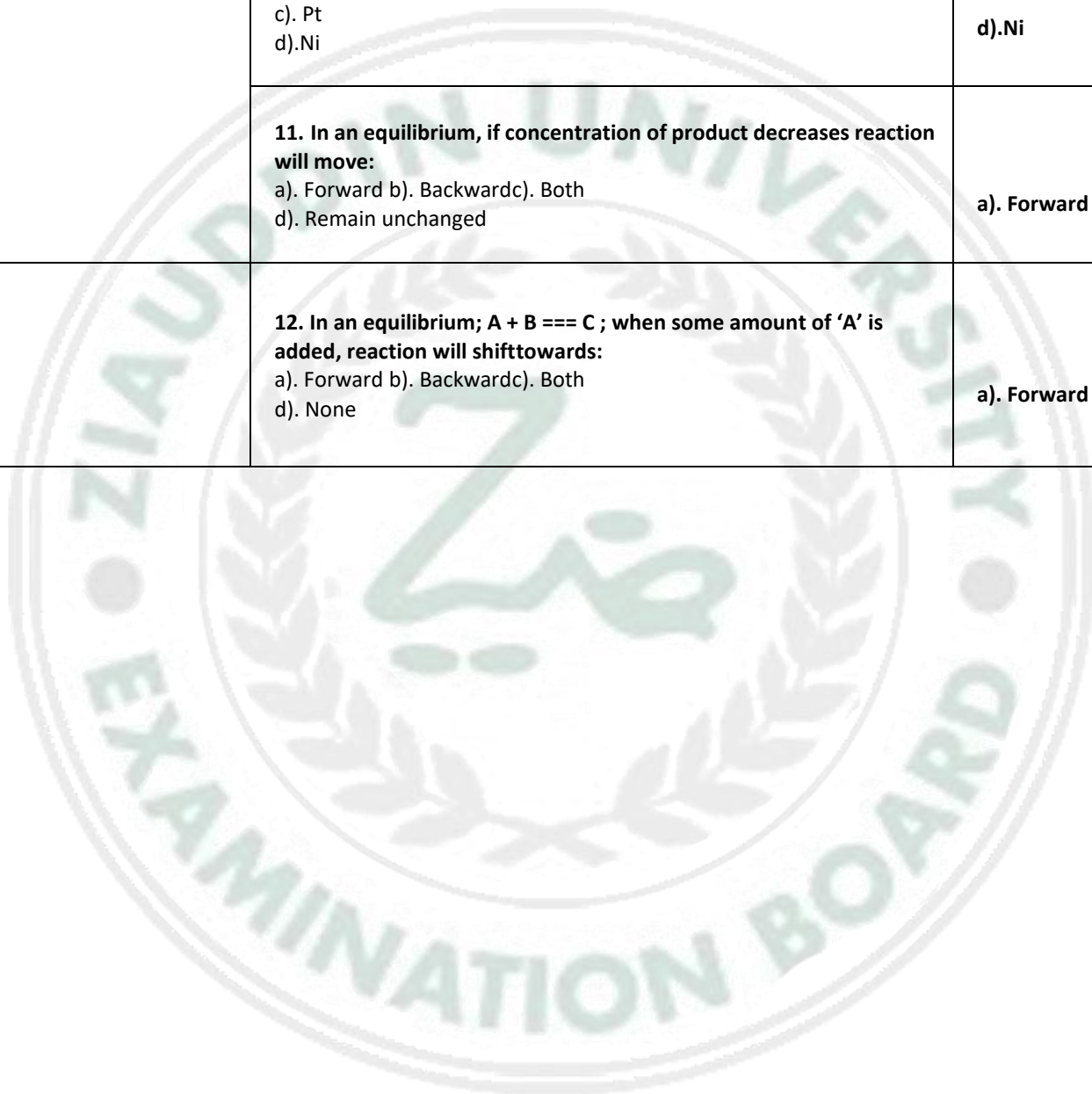
CHAPTER # 07   SOLUTION AND ELECTROLYTE

SUB TOPIC	Multiple Choice Question	ANSWER
7.2 Hydration **7.3** Hydrolysis	**1.** **What is the pOH of a solution whose pH is 7?** a) 7 b) 10c)4 d) 2	**a) 7**
7.4 Theory of ionization	**2.** **Universal indicator has_____color in basic medium.** a) Red b) Blue c) Green d) Purple	**b) Blue**
7.7 Oxidation number	**3.** **When Na$_2$CO$_3$ is hydrolyzed, the solution will be_____.** a) Acidic b) Basic c) Neutral d) None of these	**b) Basic**
7.8 Oxidation & ReductionReactions	**4.** **In_____water molecules dissociation into ions.** a. Hydration b. Hydrolysis c. Neutralization d) none of these	**b. Hydrolysis**
7.9 Ionic Balance Equation	**5.** **Reduction is a chemical process in which the oxidation number of a substance is:** a. Not change b. Increases c. Decreases d. Remain same	**c. Decreases**
	6. **_____Solution turns red litmus to blue.** a. Acidic b. Basic c. Neutral d. Amphoteric	**b. Basic**
	7. **In a solution, if some quantity of base is added, its pH:** a. Increases b. decreases c. has no effect d. First increase then decrease	**a.Increases**
7.10 Indicators	**8.** **Which indicator should be used in the titration of HCl Vs NH$_4$OH** a. Phenolphthalein b. Methyl Orange c. Litmus d. All of these	**b. Methyl Orange**

7.12 pH	9. Which of the following is most powerful reducing agent? a). Sodium b). Oxygen c). Fluorine d). Nitrogen	a). Sodium
	10. Which of the following is an example of oxidation reaction? a. $M^{+3} === M^{+2}$ b. $M^{+2} === M^{+3}$ c. $Cl^{-1} === Cl^{-1}$ d. both b and c	b. $M^{+2} === M^{+3}$
	11. What is the pOH of a solution whose pH is 3? a. 6 b. 11 c. 4 d. 2	b. 11
	12. Universal indicator has_____color in acidic medium. a. Red b. Blue c. Green d. Purple	a. Red
	13. Water is an/a_____compound: a. Acidic b. Basic c. Neutral d. Amphoteric	d. Amphoteric
	14. The pH of human blood is: a. 7.0 b. 7.4 c. 8.6 d. 6.0	b. 7.4
	15. During balancing the equation by ion electron method, basic medium is balanced by: a. H+ b. −OH c. Ion d. Electrons	b. −OH

CHAPTER # 08   CHEMICAL KINETICS

SUB TOPIC	Multiple Choice Question	ANSWER
8.2 Rate Constant & RateExpression	**1.** **A catalyst speeds up a chemical reaction because it increase:** a. Internal energy b. Potential energy c. Threshold energy d. Activation energy	**a. Internal energy**
	2. **The unit of specific rate constant**: a. mol/dm3 b. mol/dm3.s c. dm3/mol. s d. s-1	**d. s-1**
8.3 Types of Reaction	**3.** **In zero order reaction, the rate is independent of** (a) Temperature of reaction (b) concentration of reactants (c) Concentration of products (d) none of above	**(b) concentration of reactants**
	4. **The rate of reaction** (a) Increases (b) decreases (c) Remains the same (d) may decrease or increase as the reaction proceeds	**(d) may decreaseor increase as thereaction proceeds**
	5. **Rate ofreaction can be measured by_____methods.** a) Two (b)Only one (c) Zero (d) Four	**a) Two**
8.4 Factors Affecting Rate ofreaction	**6.** **By increasing the temperature rate of reaction will:** (a) Decrease (b) Increase (c) Zero (d) Unchanged	**(b) Increase**
	7. **When a reaction occurs in many steps then the slowest step is the** (a) Main step (b) enthalpy determining step (c) Mechanism determining step (d) rate determining step	**(d) rate determining**
	8. **Photochemical reactions usually have order** (a) One (b) zero (c) two (d) three	**(b) zero**

9. The experimental relationship between a reaction rate and the concentration ofreactants is called (a) Order of reaction (b) specific rate (c) Law of mass action (d) rate law	**(d) rate law**
10. The sum of exponents of the conc. terms in the rate equation is called (a) Rate of reaction (b) order of reaction (c) Specific rate constant (d) average rate	**(b) order of reaction**