

CHEMISTRY (34) QUESTION PAPERS 2

Time: 3:15 Hrs.

Max. Marks: 70

Instruction:

II PUC

10. Tollen's reagent is

a) Silver nitrate solution

c) ammonium nitrate solution

- 1. The question paper has four parts. All parts are compulsory.
- 2. Part-A carries 20 Marks. Each question carries 1 Mark.

Part-B carries 08 Marks. Each question carries 2 Marks.

Part -C carries 12 Marks. Each question carries 3 Marks

Part -D carries 30 Marks. Each question carries 5 Marks

- 3. Write balanced chemical equations and draw diagrams wherever necessary.
- 4. Use log tables and simple calculators if necessary. (Use of scientific calculator is not allowed)

PART-A $1 \times 15 = 15$ I. Select the correct option from the given choices. 1. If the solute dissociate then molecular mass is a) Increases b) Decreases b) First increases then decreases d) Remains unchanged 2. Quantity of electricity required for reduction of one mole of Mg²⁺ ion is. c) 193000 C a) 96500 C b) 95500 C d) 19300 C Which of the following is the example for inert electrode? 3. b) Copper electrode a) Gold electrode c) Zinc electrode d) Silver electrode 4. A reaction is second order with respect to reactant. How is the rate of reaction affect. If concentration of reactant is doubled. b) Rate = 4Ka) Rate = 2Kc) Rate =8Kd) Rate =16K5. The maximum oxidation state shown by the transition element is d) Copper a) Manganase b) Mangnasium c) Chromium 6. The coordination number of a metal in coordination compound is a) Same as primary valency b) Sum of primary and secondary valencies d) None of the above c) Same as secondary valencies 7. The geminal dihalids is a) 2,2 – dichloropropane b) 1,2 - dichloroethane c) Vinyl chloride d) Allyl chloride 8. The most acidic compound among the following is d) Picric ac a) Phenol b) p-cresol c) p-nitrophenol 9. Ethylene glycol is an example for a) Monohydric alcohol b) Dihydric alcohol c) Trihydric alcohol d) Non of this

b) Ammonical silver nitrate solution

d) Silver chloride solution

11. Carboxylic acids reacts with metals t	to form salts with li	beration of
a) H ₂	b) N ₂	
c) CO ₂	d) CO	
12. Carbylamine reaction is answer by		
a) Phenol b) Aldehyde	c) 1° amines	d) 2° amine
13. IUPAC name of $(CH_3)_3N$ is		
a) Methanamine	b) N, N-dimethy	
c) N-methyl ethanamine	d) N-ethyl metha	namine
14. The rickets diseas is caused by defici		
a) Vitamin - D b) Vitamin - A	<i>'</i>	d) Vitamin - C
15. The nitrogen base present only in RN		N. G.
a) Adenine b) Thiamine	c) Uracil	d) Guanine
II. Fill in the blanks choosing the appro	opriate word from	_
[Zono oudon monotion A notalistica D	lavana aamaaia Cu	$1 \times 5 = 5$
[Zero order reaction, Acetylation, R		Pnosgenj
16. Desalination of sea water is applicati17. Decomposition of HI on surface of g		
18. The non-transitional metal present is	_	·
19. The poisonous gas formed when ch		I to air and light is
20. To get monosubstituted product of an	_	
20. 10 Set monosassinatea product of an	amine is protected o	
	PART- B	
III. Answer any THREE of the following	PART- B s. Each question ca	arries 2 marks. $2 \times 3 = 6$
III. Answer any THREE of the following 21. Give any two applications of Henry	g. Each question ca	arries 2 marks. $2 \times 3 = 6$
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-	s. Each question ca 's law.	
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30. Using VBT explain the geometry, hybridisation and magnetic property of	
$[CoF_6]^{3-ion}$. (Z for $Co = 27$)	
31. a) What are homoleptic complexes? Give an example.	2m
b) Write the IUPAC name of the complex $K_4[Fe(CN)_6]$	1m
32.a) Draw the energy level diagram to show splitting of degenerated orbitals in an o	
tetrahedral crystal field.	2m
b) Write the type of isomerism exhibited by coordinate complexes having ambidents	ate
ligands.	1m
 V. Answer any TWO of the following. Each question carries 3 marks 33. What are maximum boiling azeotropes? Give example. 34. Define molar conductivity? How is it related to concentration and conductivity? 35. a) State Kohlrausch law of independent migration of ions. b) Write the mathematical expression for limiting molar conductivity of sodium chloromators. 	2m
36. Derive integrated rate equation for the rate constant of a zero order reaction.	1111
PART-D	
VI. Answer any FOUR of the following. Each question carries 5 marks 4 x 5	= 20
37. a) Explain S_N1 mechanism taking alkaline hydrolysis of t-butyl bromide as example	3m
b) Explain Finkelstien reaction with an example.	2m
38. a) How is phenol manufactured from cumene process? Give its chemical reaction.	3m
b) What is the product formed when formaldehyde is treated with Grignard reagent.	
Write its reaction.	2 m
39.a) How do you prepare methoxy ethane by Williamson reaction?	2m
39.a) How do you prepare methoxy ethane by Williamson reaction?b) How does anisole react with nitrating mixture? Write equation.	2m 2m
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- **42.** a) Explain Hoffmann bromamide degradation for the preparation of aniline.
 - b) How do you convert benzene diazonium chloride into chlorobenzene by Gatterman reaction? Give equation.2m
 - c) Arrange Ammonia, Aniline and Methanamine in the increasing order of their basic strength.
- **43.** a) Write chemical reaction to elucidate,

3m

2m

- i) Six carbon atoms is glucose are in straight chain.
- ii) The presence of carbonyl group.
- iii) Presence of aldehyde functional group.
- b) What are reducing Sugars? Give an example.

2m

PART – E (PROBLEMS)

VII. Answer any THREE of the following. Each question carries THREE marks. $3 \times 3 = 9$

- 44. The boiling point of benzene is 353.23 K. When 1,80 g of non volatile solute is dissolved in 90gof benzene the boiling point of solution is raised to 354.11 K. Calculate molar mass of solute. (Kb for benzene is 2,53K Kg per mol).
- 45. A solution is prepared by dissolving 18 gm of glucose in 150 g of water. The resulting solution was found to have boiling point of 100.34° C. Calculate Ebullioscopic constant for water.
- 46. The resistance of M/10 solution is found to be 2.5×10^3 ohms. Calculate the molar conductance. (Cell constant = $1.15 \ cm^{-1}$)
- 47. Calculate the EMF of the cell in which the following reaction takes place.

$$Ni_{(s)} + 2Ag^{+}(0.002M) \rightarrow Ni^{+2}(0.16M) + 2Ag_{(s)}(E_{cell}^{\circ} = 1.05 V)$$

- 48. Calculate time in seconds for the decomposition of nitrogen pentaoxide which follows first order kinetics when concentration of N_2O_5 is dropped from 0.1 M to 0.001 M ($K=6,22 \times 10^{-4} \text{ s}^-$)
- 49. The rate of a reaction increases by 4 times when the temperature of the reaction is raised from 340 K to 360 K. Calculate the energy of activation of the reaction. Given R=8.314 J/K/mol.