TSBIE - MODEL PAPER
CHEMISTRY - II

Time: 3 Hours ***Max.Marks: 60***

Each Question Carries TWO marks. 2 x 10 = 20

SECTION - A

1. What is Frenkel defect?
2. How do you distinguish between Crystal lattice & Unit Cell.
3. Calculate the molefraction of H_2SO_4 in a solution containing 98% of H_2SO_4 by mass.
4. What are isotonic solutions.
5. What are Micelles? Give one example?
6. Why H_2O a liquid while H_2S is gas?
7. Write any two uses of Argon.
8. What is an ambidentate ligand? Give example?
9. Write the biological functions of Nucleic acids.
10. Write the reaction showing α-halogenation of Carboxylic acid and give its name.

SECTION - B

Each Question Carries FOUR marks. 6 x 4 = 24

11. Derive Bragg's equation.
12. Give the construction and working of a standard hydrogen electrode with a neat diagram.
13. What are different types of adsorption. Give any four differences between Characteristics of these different types.
14. Explain Lyophilic and Lyophobic sols with one example each.
15. What are interhalogen compounds? Give some examples to illustrate the definition. How are they classified.
16. How are XeF_2 and XeF_4 prepared. Give their structures.
17. Explain Werner's theory of Coordination Compounds with suitable examples.
18. Write any four characteristic properties of transition elements.

19. Write notes on Amino acids.

20. Explain the mechanism of Nucleopilic bimolecular substitution (SN^2) reaction with one example.

21. Explain the acidic nature of phenols and compare with that of alcohols.

22. Write the reactions of (i) aromatic and (ii) aliphatic primary amines with nitrous acid.

SECTION - C

Each Question Carries EIGHT marks. 2 x 8 = 16

23. a) What is relative lowring of vapour pressure? How is it useful to determine the molar mass of a solute.

    b) Vapour pressure of water at 293k is 17.535 nm Hg. Calculate the vapour pressure of the solution at 293k when 25g of glucose in dissolved in 450g of water.

24. a) State and explain Kohlrausch's law of independent migration of ions.

    b) Write differences between order and molecularity.

25. a) How is ammonia manufactured by Haber's process.

    b) How is Ozone prepared? How does it react with the following:

    i) pbs ii) KI iii) Hg iv) Ag

26. With a suitable example write equations for the following:

    a) Kolbe's Reaction

    b) Riemer Tiemann Reaction

    c) Williamson Ether Synthesis

    d) Aldol Condensation