

Time allowed: 3 Hours

Max. Marks: 70

Section-A (1 mark each)

Q1. Define organometallic compounds

OR

Reagents used for Clemmensen's reduction.

Q2. What is invert sugar?

Q3. . Write the composition of a composite rocket propellant.

OR

Define ferromagnetic substances.

Q4. How osmotic pressures depend upon the temperature?

Q5. How half-life period of any first order reaction depends on concentration?

Section-B (2 marks each)

Q6. State the Faraday's Laws of Electrochemistry.

OR

Give 2 differences between Absorption and Adsorption.

Q7. Give reason for each of the following.

- (i) Why methyl amine is stronger base than ammonia?
- (ii) Why boiling point of ethanamine is more than N-Methylmethanamine?

OR

Define following: (i) Micelle and (ii) Critical micellization concentration (CMC)

Q8. Give an ore of Sn and Pb.

Q9. What is Flux and its role in metallurgy?

Q10. (a) What is the coordination number of Fe in $[\text{Fe}(\text{EDTA})]$?

(b) Give the IUPAC name of $[\text{Pt}(\text{NH}_3)\text{Cl}_2]\text{Cl}_2$

Q11. (a) Which order does radioactive decay follow?

(b) What is the end product of natural radioactive series?

Q12. (a) What is the reason of geometrical isomerism in case of alkenes?

(b) Give the total number of stereoisomers for a compound having 4 chiral carbon atoms.

Section-C (3 marks each)

Q13. What is racemisation? Give the methods to convert optically active compound into a racemic mixture.

Q14. Give reaction for each:

- (a) Friedel Crafts alkylation reaction
- (b) Nitration of anisole
- (c) Chlorination of anisole

Q15. Complete following conversions:

- (a) Acetic acid to methylamine
- (b) Acetylene to aldehyde
- (c)

Q16. Give three methods for the preparation of Amines

OR

Give the monomers and uses of Nylon 66

Q17. (a) What does PMMA stand for?

- (b) Name a synthetic polymer which is an ester.
- (c) Give a natural elastomer.

Q18. Give three differences between enzymes and catalysts

Q19. Name three nucleic acids which are used in protein synthesis.

OR

What is ATP? Give two enzymes which are required in the digestion of proteins.

Q20. Write the deficiency of vitamin A, C and D.

Q21. Define medicine. Give two types of medicines with examples.

Q22. (a)What are dyes?

(b)Give an example of sulpha drug.

(c)Give one use of equanil.

OR

(a)Give example of Vat dye.

(b)Give use of Morphine.

(c)Name of liquid which is used both as fuel and an oxidizer

Q23. Write the units of enthalpy, entropy and free energy.

Q24. Mention three colligative properties.

Section-D (5 marks each)

Q25. Discuss the extraction of Aluminium.

OR

Discuss allotropic forms of Sulphur.

Q26. Discuss the difference between Physisorption and Chemisorption

OR

Discuss characteristics of d-block elements:

Q27. What are carbohydrates? Discuss the classification of carbohydrates with examples.

OR

Discuss cannizzaro reaction.

