

(2) Attempt any four questions from remaining six questions.

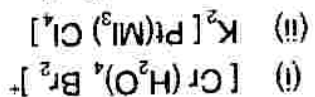
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1. Answer any four :

- How phenol is converted into 2, 4, 6 tribromophenol and anisole.
- Write any two methods of manufacture of benzyl alcohol.
- Explain Mannich reaction with its applications.
- How HNO_3 is prepared by Ostwald's process.
- Explain preparation, properties and structure of Xenon difluoride.
- Explain the term ligand and co-ordination number with suitable examples.

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2. (a) Write IUPAC names of the following co-ordination compounds :



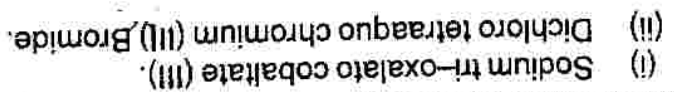
(b) Explain the term effective atomic number with suitable examples.

(c) What are lanthanides and actinide ? Explain with reference to radioactivity.

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3. (a) What is lanthanide contraction ? How lanthanides are separated by ion exchange method.

(b) Write notes on High spin and Low spin complexes.

(c) Explain Sigicks EAN rule with suitable examples.

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4. Write notes on : (any four)

- Polymer of silicon
- Werner's co-ordination theory
- Geometrical isomerism in octahedral complexes
- Preparation, properties and structure of XeF_6
- Valence Band Theory
- Limitations of CFT.

(a) Distinguish between phenol and carboxylic acid.

(b) Give any two methods for the preparation of benzoic acid.

(c) Explain following reactions with their applications :

- Pinacol - Pinacolone - rearrangement
- Cannizzaro - reaction.

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How following compounds are prepared : (any four)

- Phthalic acid (two methods)
- Benzaldehyde (two methods)
- 2-methyl indole
- Salicylaldehyde and benzophenone
- Cinnamic acid.

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(a) Explain following reactions with their mechanisms and applications : (any two)

- Oppenauer oxidation
- Reformatsky reaction
- Perkins reaction.

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(b) Explain formation, structure and stability of carbocations.
