

Time: 2:40 Hours

SUBJECTIVE

Marks: 68

Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.**(SECTION – I)****2. Write short answers to any EIGHT questions.****(2 x 8 = 16)**

- i. Why oxidation state of noble gases is usually zero?
- ii. Why metallic character increases from top to bottom in group?
- iii. Define alkali and alkaline earth metals.
- iv. Why is the aqueous solution of Na_2CO_3 alkaline in nature?
- v. Write down four uses of silicones.
- vi. Why CO_2 is acidic in character?
- vii. How does nitrogen differ from other elements of its group?
- viii. Give methods of preparation of PCl_3 .
- ix. How chromate ions are converted into dichromate ions?
- x. Define ligand. Give one example.
- xi. Discuss ammonia as a fertilizer.
- xii. Define cement, Write down names of its important raw materials.

3. Write short answers to any EIGHT questions.**(2 x 8 = 16)**

- i. Why HF is weak acid than that of HI?
- ii. Write down any four uses of bleaching powder.
- iii. Define cis-trans isomerism. Give one example.
- iv. How wood can be converted into anthracite?
- v. How will you convert i) Ethene into ethane ii) Ethyne into ethene
- vi. How does propyne react with the following reagents?
i) $\text{AgNO}_3 / \text{NH}_4\text{OH}$ ii) $\text{Cu}_2\text{Cl}_2 / \text{NH}_4\text{OH}$
- vii. Why alkenes are more reactive than alkanes?
- viii. Write down any two differences between E_1 and E_2 reactions.
- ix. What is Grignard reagent? How it can be prepared?
- x. Define proteins. Give any two importance of proteins.
- xi. Define iodine number and acid number.
- xii. Write down any four importance of lipids.

4. Write short answers to any SIX questions.**(2 x 6 = 12)**

- i. Give the mechanism of sulphonation of benzene.
- ii. Give two methods for the preparation of benzene in laboratory.
- iii. How phenol reacts with dil. and conc. HNO_3 ?
- iv. Dehydration of ethyl alcohol occur under different conditions. Give reactions.

(Turn Over)

- v. Give any four uses of formaldehyde.
- vi. How would you convert acetic acid into i) acetyl chloride ii) acetic anhydride
- vii. What are essential and non-essential amino acids?
- viii. What are primary pollutants? Give examples.
- ix. Give any four causes of water pollution.

(SECTION - II)

Note: Attempt any THREE (3) questions from Section II.

- 5. (a) Define the oxides. Classify the oxides on the basis of their acidic and basic character. (4)
(b) Discuss briefly triplumbic tetraoxide (Pb_3O_4) and lead dioxide (PbO_2). 2+2 (4)
- 6. (a) Write down any eight points regarding the peculiar behaviour of lithium. (4)
(b) Explain the electrochemical theory of corrosion. (4)
- 7. (a) What is orbital hybridization? Explain SP^3 hybridization with example. (4)
(b) Define nucleophilic substitution reaction and discuss the $\text{S}_{\text{N}}1$ reaction in detail. (4)
- 8. (a) Discuss the Kolbe's electrolysis method for the preparation of alkene. (ethene) (4)
(b) Explain the mechanism of cannizzaro's reaction with one example. (4)
- 9. (a) How will you prepare benzene from 1x4 (4)
i) cyclohexane ii) n-hexane
iii) phenol iv) acetylene
(b) Define alcohols. How different types of alcohols are differentiated by Lucas test. 1+3 (4)

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