

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) of the following

D4K-G1-22

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| i | Differentiate between Hydrides and Halides |
| ii | Why oxidation state of noble gases is usually zero ? |
| iii | Write formula of Calcite and Barite |
| iv | What is effect of heat on LiOH and Mg(OH) ₂ , give equations |
| v | Write four common properties of group IVA elements |
| vi | Write formulas of following minerals of silicon (i) Zircon (ii) Talc |
| vii | Conc. H ₂ SO ₄ is oxidizing agent , prove the statement by two reactions |
| viii | What is effect of heat on H ₃ PO ₄ ? |
| ix | Define coordination number and coordination sphere |
| x | How does cathode coating prevent iron from corrosion ? |
| xi | Write chemical reactions involved in preparation of urea from CO ₂ and NH ₃ |
| xii | Write names and formula of two phosphatic fertilizer |

QUESTION NO. 3 Write short answers any Eight (8) of the following

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| i | Write down the factors on which the oxidizing power of halogens depends on |
| ii | What are Freons and Teflon ? |
| iii | Define hetero cyclic compounds. Give two examples |
| iv | Why there is no free rotation around a double bond ? |
| v | How the Ethylene Glycol is prepared from ethane. Give the reaction |
| vi | Write down four uses of Ethyne |
| vii | What is Mustard gas ? How is it prepared ? |
| viii | Define Nucleophile. Give two examples |
| ix | Give the reaction of Ethyl magnesium Bromide with ethylene epoxide |
| x | What are thermoplastic polymer ? Give two examples |
| xi | Enlist four properties of enzymes |
| xii | Discuss the rancidity of fats and oils |

QUESTION NO. 4 Write short answers any Six (6) of the following

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| i | Give names and possible isomeric structure of xylene |
| ii | Convert the Benzene into m-chloronitrobenzene |
| iii | Why absolute alcohol cannot be prepared by fermentation ? Discuss |
| iv | Complete the reaction : Phenol + Br ₂ → |
| v | How will you distinguish between methanal and ethanal ? Give reaction |
| vi | How does alanine react with alcohol ? |
| vii | Convert CH ₃ COOH into Glycine |
| viii | What is ozone hole ? Give its significance |
| ix | Mention some harmful effects of acid rain |

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

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| Q.5-(A) | Discuss the position of hydrogen on top of Group VIIA (Four similarities and Four differences) |
| (B) | Write note on peculiar behaviour of Boron |
| Q.6-(A) | Write down any eight properties of lithium in which it behave differently from its own group members |
| (B) | Write down the systematic names of following complexes
(i) [Fe(CO) ₅] (ii) [Co(NH ₃) ₆] Cl ₃ (iii) Na ₃ [CoF ₆] (iv) K ₂ [PtCl ₆] |
| Q.7-(A) | Explain Reforming of petroleum with example |
| (B) | Define Nucleophilic substitution reaction. Also explain S _N 1 mechanism with example |
| Q.8-(A) | Write a comprehensive note on the polymerization of alkynes |
| (B) | Define and explain aldol condensation along with mechanism |
| 9.(A) | Describe the structure of benzene on the basis of atomic orbital treatment |
| (B) | How would you convert ? : (i) Phenol to Bakelite (ii) Methanol to Ethanol |