

- (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions from the remaining **six** questions.

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Attempt any **four** of the following :-

- (a) Write the chemical formula of the co-ordination compounds.
 (i) Potassium hexacyano ferrate (III)
 (ii) Trichlorotriammine cobalt (III)
- (b) Write the mechanism of Breckmann reaction.
- (c) Give synthesis of Vitamin C.
- (d) Give the preparation and properties of $\text{Fe}_3(\text{CO})_{12}$.
- (e) Give the Drawbacks of VBT.
- (a) Give the limitation of CFT. 5
- (b) What is CFSE ? Calculate CFSE for d^4 and d^9 . 5
- (c) What is EAN ? Calculate EAN of complex $\text{K}_4[\text{Fe}(\text{CN})_6]$ 5
- (d) Explain oxygen atom transfer bimolecular reactions containing iron. 5
- (a) Explain Debye Huckel theory of electrolyte. 5
- (b) Explain structure of $\text{Ni}(\text{CO})_4$. 5
- (c) Applications of Cytochromes. 5
- (d) Effect of temp. on conductivity. 5
- (a) Derive an expression for concentration cell without transference. 5
- (b) Application of Cytochromes. 5
- (c) On the basis of MOT, explain molecular orbital energy pattern of N_2 . 5
- (d) Explain Magnetic behaviour of $[\text{Fe}(\text{CN})_6]^{4-}$. 5
- (a) Explain structure of BrF_3 on the basis of VSEPR theory. 5
- (b) Write the structure of (i) Congored (ii) Malachite green. 5
- (c) Difference between bonding and antibonding orbital. 5
- (d) Write the synthesis of :—
 (i) Aspirin (ii) Alizarin.
- (a) Give the synthesis of Alizarin. 20
- (b) What are drawbacks of CFT.
- (c) Give the mechanism of Fischer Indole Synthesis.
- (d) Give the nomenclature of dyes.

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Write reaction with mechanism :—

- (a) Benzyl-Benzyllic acid
 (b) Darzen reaction
 (c) Michel reaction
 (d) Pincol-pinacolone rearrangement.