

- 8 a Discuss on bent Sandwich complexes.
OR
- b What are multidecker complexes? How are they synthesised?
- 9 a How is IR spectroscopy used to identify the terminal and bridging carbonyl group in carbonyl complexes?
OR
- b What are carboranes? How is 1,2-dicarbido-*closo*-dodecaborane prepared?
- 10 a What is *cis* platin? Write its mode of action in chemotherapy.
OR
- b Explain the role of manganese in photosystem II.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Explain the mechanism of the following reaction.
 $(OC)_5Mn-CH_3 + CO \rightleftharpoons (OC)_5Mn-COCH_3$
OR
- b What are carbene complexes? Explain the electrophilic and nucleophilic nature of carbene complex with appropriate reaction.
- 12 a Explain Ziegler-Natta polymerisation of olefins.
OR
- b How is Ziese's salt prepared? Explain the structure and bonding
- 13 a Discuss the structure of ferrocene.
OR
- b What are half sandwich complexes? How are they synthesised? Explain their structure and reactivity.
- 14 a What is photoredox reaction? Explain the reactions involving inner sphere mechanism and outer sphere mechanism.
OR
- b Discuss the preparation and properties of carbonyl hydride complexes.
- 15 a Explain the designing of molecular host - guest complexes.
OR
- b What are synthetic oxygen carriers? Explain.

Z-Z-Z

END