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Name: _____

Reg. No. _____

FOURTH SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY)
EXAMINATION, APRIL, 2023

(CBCSS)

Chemistry

CHE 4E 08—ORGANOMETALLIC CHEMISTRY

(2019 Admission onwards)

Time : Three Hours

Maximum : 30 Weightage

Section A

Answer any eight questions.
Each questions carries a weightage of 1.

1. Give the structure of $\text{Co}_2(\text{CO})_8$ and $\text{Ru}_3(\text{CO})_{12}$.
2. Find out the hapticity of cyclo octa tetraene (COT) complexes which obeys 18 electron rule :
(a) $\text{Cr}(\text{CO})_3(\text{COT})$; and
(b) $\text{Ru}(\text{CO})_3(\text{COT})$.
3. What is Colman's reagent ? Give its structure and use.
4. How is enantioselective synthesis carried out using metal complexes ? Give an example.
5. Give the nucleophilic addition reactions of an η^4 diene complex.
6. Write down the reaction of metal vapor synthesis for η^6 arene complexes.
7. When PPh_3 is added to a solution of Wilkinson's catalyst reduces the rate of hydrogenation of propylene. Explain the observation in terms of the mechanism of the catalysis involved.
8. What are the disadvantages of hydroformylation of alkenes when carried out by Cobalt catalyst ?
9. Write down the applications of poly(ferrocenylsilane)s.
10. Give an example for SN^2 organometallic reaction.

(8 × 1 = 8 weightage)

Turn over