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School of Basic Sciences

Master of Science in Chemistry
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem II - C1PK202T - Reaction mechanism and Basics of group theoryGeneral Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Summarize the metal carbonyls with their importance. K2 (2)
- 2) Why the transition metal complexes having 18-electrons are stable? K1 (3)
- 3) Illustrate the factors affecting the lability and inertness of transition metal complexes. K2 (4)
- 4) Explain any three physical properties of metal carbonyls. K2 (6)
- 5) Utilize the concept of carbonyl cluster and draw the structure of $Co_2(CO)_8$ in solid as well as solution state. K3 (6)
- 6) Apply the concept of reaction mechanism of electron transfer reaction of any type (Inner or outer sphere). K3 (9)
- 7) Compare the terminal and bridging carbonyls using the structure of appropriate examples. K4 (8)
- 8) Analyze the types of metal carbonyls with examples. K4 (12)

OR

Analyze the metal nitrosyls and write the synthetic routes of metal nitrosyls? Give any two reactions. K4 (12)