

School of Basic Sciences

Master of Science in Chemistry
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

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

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|-----|--|--------|
| 1) | Why Carbon makes bond with metal in metal carbonyls? | K1(3) |
| 2) | Illustrate the Redox reactions in octahedral complexes with examples. | K2(4) |
| 3) | Explain the Halide clusters with example. | K2(6) |
| 4) | Utilize the formula of metal-metal bond calculation, for calculating the no. of metal-metal bond for any two examples. | K3(6) |
| 5) | Utilize Wade rule to predict the structure of $Os_5(C)(CO)_{15}$. | K3(6) |
| 6) | Apply the concept of substitution reaction in square planar complexes by using appropriate reaction. | K3(9) |
| 7) | Apply the concept of wade rule on any two examples. | K3(9) |
| 8) | Compare the different types of electron transfer reactions. | K4(8) |
| 9) | Analyze the symmetry elements with examples. | K4(12) |
| 10) | Conclude the point group and molecules with low symmetry with example. | K5(10) |
| 11) | Justify the role of VBT in inertness and lability of the transition metal complexes. | K5(15) |
| | OR | |
| | Justify the role of CFT in inertness and lability of the transition metal complexes. | K5(15) |
| 12) | Discuss the drawbacks of VBT with example. | K6(12) |
| | OR | |
| | Discuss the postulates of Werner's theory. | K6(12) |