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**GIET UNIVERSITY, GUNUPUR – 765022**

M. Sc. (Second Semester) Examinations, September – 2021

20CHPC 202 - Inorganic Chemistry- II

(Chemistry)

Time: 2 hrs

Maximum: 50 Marks

(The figures in the right hand margin indicate marks.)**PART – A**Q.1. Answer **ALL** questions**(2 x 10 = 20 Marks)**

- Identify the 18 electron species.
[Ir CO Cl (PPh₃)] [Fe (CO)₅]
- Complete the reaction
 $\text{Mn}_2(\text{CO})_{10} + 2\text{Na} \longrightarrow ?$
- Determine the structure of Ru₆C(CO)₁₇ by using Wade's rule.
- Write down the general formula & structure of closo boranes.
- What is kinetics stability?
- Explain Inert complexes.
- Find out the order of lability of Ni⁺², V⁺² & Cr⁺³
- Define hydrolysis reaction.
- Calculate the effective atomic number of single metal atom
Fe (CO)₁₂, Mn₂(CO)₁₀
- Explain anation reaction of co-ordination compounds.

PART – B (6 x 5 = 30 Marks)Answer ANY FIVE questions

Marks

- Calculation of Metal- Metal bond and structure of the following complexes
(a) Co₂(CO)₈ (b) Fe₂(CO)₉ (c) Os₄(CO)₁₄ 6
- Write the preparation, properties and structure of Ni (CO)₄ 6
- Write down the preparation properties of Carbides. 6
- Determine the structure of heteroboranes
C₂B₇H₁₃, C₂B₂H₆, C₂B₉H₁₂⁻, C₂B₈H₁₀ 6
- Explain different Kinetics of octahedral substitution. Explain kinetics of square planner complex 6
- Explain the difference between stepwise stability and overall stability constants. 6
- What is acid hydrolysis? Give evidence to support the mechanism. 6

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