Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| --- | --- | --- | --- |
| **Code :** | **16CH2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CHEMISTRY OF TRANSITION AND INNER-TRANSITION ELEMENTS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | Discuss variable oxidation state and abundance with examples and  describe non- stoichiometry in transition elements with examples. | CO1 | 20 |
| **(OR)** | | | | |
| 2. | a. | Discuss in detail on isomerisms with suitable examples. | CO1 | 10 |
| b. | Decribe the function of magnetic balance with neat diagram. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Werner’s Coordination theory - Explain it. | CO2 | 10 |
| b. | What do you understand from Valence Bond theory?  How will you correlate VBT on [Ni(NH3)4]2+ complexes. | CO2 | 10 |
| **(OR)** | | | | |
| 4. | a. | Write a short notes on different types of ligand with examples. | CO2 | 10 |
| b. | Compare and contrast double salt and coordination compounds. | CO2 | 10 |
|  |  |  |  |  |
| 5. |  | Explain the method of finding out the CFTS values for on octahedral complex with an example. Give its mertis, assumptions and consequences. | CO3 | 20 |
| **(OR)** | | | | |
| 6. |  | State and explain Jahn-Teller theorem with neat diagrams. | CO1 | 20 |
|  |  |  |  |  |
| 7. |  | Write a note on the following terms.  i) Ferrocene preparation (any two)  ii) Chemical properties of ferrocene (any two) | CO2 | 20 |
| **(OR)** | | | | |
| 8. | a. | Describe the importance of chelates in biology and analytical chemistry. | CO2 | 10 |
| b. | Bring out the role of Ziegler Natta catalyst in the preparation of polyethylene and discuss it. | CO2 | 10 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the oxidation states and separation of lanthanide elements. | CO3 | 10 |
| b. | Describe the methods which have been used to separate the isotopes of uranium and explain the difficulties present in these methods. | CO3 | 10 |