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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

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

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12CH206** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **INORGANIC AND COORDINATION CHEMISTRY** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Define “Covalent bond”. | (1) |
| 2. | Mention any one limitation of VBT. | (1) |
| 3. | Define “bond order”. | (1) |
| 4. | What is meant by Roasting? | (1) |
| 5. | Define “primary valency”. | (1) |
| 6. | Define “organometallic compound”. | (1) |
| 7. | Draw the structure of ferrocene. | (1) |
| 8. | Define “Isotope”. | (1) |
| 9. | Give an example for polydentate ligand. | (1) |
| 10. | List out different types of radioactive rays. | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Discuss the different types of hybridization. | (3) |
| 12. | What is meant by 18 electron rule? | (3) |
| 13. | Write short note on “Spectrochemical Series”. | (3) |
| 14. | Mention the functions of haemoglobin and myoglobin. | (3) |
| 15. | Discuss the structure and demerits of *cis*-platin anticancer drug. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. | a. | Explain various Acid-Base concepts. | (8) |
| b. | Explain the salient features of VSEPR theory. | (7) |
| (OR) | | | |
| 17. | a. | Explain the magnetic properties of O2 and N2 based on MO theory. | (10) |
| b. | Explain HSAB principle. | (5) |
| 18. | a. | Explain the different typesof nuclear reactions. | (10) |
| b. | Define: Mass Defect and Binding energy. | (5) |
| (OR) | | | |
| 19. | a. | Explain nuclear stability based on N/P ratio? | (10) |
| b. | Highlight the medical applications of radioisotopes. | (5) |
| 20. | a. | Discuss geometrical and optical isomerism in coordination compounds. | (8) |
| b. | Discuss the postulates of Werner’s theory. | (7) |
| (OR) | | | |
| 21. | a. | Describe the crystal field splitting of 'd ' orbitals in octahedral complexes. | (10) |
| b. | Explain about spin-only magnetic moment calculation. | (5) |
| 22. |  | Explain Preparation, Structure and uses of the TiO2. | (15) |
| (OR) | | | |
| 23. |  | Explain Preparation, Structure and uses of the V2O5. | (15) |
| 24. | a. | Discuss the nature of bonding in metal carbonyls. | (8) |
| b. | Explain the structure and functions of haemoglobin. | (7) |
| (OR) | | | |
| 25. |  | Describe the structure and reaction mechanism of Ziegler-Natta catalyst in olefins polymerization. | (15) |

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