Reg. No…….. Name…… **15U506**

# B.Sc. DEGREE END SEMESTER EXAMINATION OCTOBER 2017

SEMESTER **–5: CHEMISTRY (CORE COURSE)**

COURSE: **15U5CRCHE05: INORGANIC CHEMISTRY - I**

*(For Regular 2015 admission)*

Time: Three Hours Max. Marks: 60

## SECTION A

Answer **all** questions. Each question carries 1 mark

1. Give two examples for chelating ligands.
2. What is meant by leveling effect of solvents on the acidity?
3. Why do Zr & Hf exhibit similar properties?
4. Write any two functions of copper
5. Calculate the EAN of Fe in $Fe(CO)_5$
6. What is the metal present in chlorophil?
7. Write any one of the preparatory method of 'zeise's salt'
8. Why do transition elements show variable valency? (1 x 8 = 8)

## SECTION B

Answer **any six** questions. Each question carries 2 marks

9. Explain the geometry of $Ni(CO)_4$ on the basis of valence bond theory
10. Write the postulates of Werner's theory of co-ordination compounds
11. Predict whether $SiCl_4$ is a lewis acid or not. Justify your answer.
12. What are the conjugate bases for a) $HSO_4^-$, b) $HClO_4$, c) $NH_3$, d) HF
13. What do you meant by charge transfer spectra?
14. Give any two uses of lanthanides and actinides.
15. What is meant by synergic effect?
16. What is hapticity? Give one example for a penta hapto ligand (2 x 6 = 12)

## SECTION C

Answer **any four** questions. Each question carries 5 marks

17. Write a note on Zeigler Natta polymerization
18. What are the functions of myoglobin in organisms?
19. Give a brief description of metalloenzymes

20. Describe the splitting of *d* orbitals in octahedral field with a suitable example
21. Explain the Lux-flood theory of acids and bases
22. Discuss in detail the magnetic properties of 3d series. (5 x 4 = 20 )

**SECTION D**

Answer **any two** questions. Each question carries 10 marks

23. State HSAB principle. Discuss its applications.
24. Explain the isomerism in coordination compounds with examples.
25. Explain the lanthanide contraction in detail with respect to the causes and consequences.
26. Explain the structure and bonding in ferrocene (10 x 2 = 20)

**********