Reg. No............................   Name...........................

B. SC DEGREE END SEMESTER EXAMINATION OCTOBER 2016
SEMESTER – 5: CHEMISTRY
COURSE: **U5CRCHE5 – CHEMSITRY OF D AND F BLOCK ELEMETNS**

Time: Three Hours   Max. Marks: 60

Section A
(Answer **all** questions. Each question carries **1 mark**)

1. Give the electronic configuration of Cu^{2+} ion.
2. Give two examples for sigma bonded organo metallic compounds.
3. Name the prosthetic group present in Hb and Mb.
4. Find the correct value of n in $Cr(CO)_n$.
5. IUPAC name of the complex $K_3[Fe(CN)_6]$ is ------------------
6. Give two examples of anticancer drugs.
7. Geometry of $[Zn(NH_3)_4]^{2+}$ is ------------
8. Give an example of an outer orbital complex. $(1 \times 8 = 8)$

Section B
(Answer **any six** questions. Each question carries **2 marks**)

9. What are inner transition elements? Give two examples.
10. What are the fundamental postulates of Werner's coordination theory?
11. The homogenous hydrogenation of ethylene in presence of Wilkinson's catalyst is very slow. Explain.
12. What is 18 electron rule?
13. Explain the mechanism of enzyme action in our body.
14. Give the structure of $Fe_3(CO)_{12}$.
15. What is CFSE? Find CFSE of d^2 configuration in tetrahedral field.
16. What is Bohr effect? $(2 \times 6 = 12)$

Section C
(Answer **any four** questions. Each question carries **5 marks**)

17. Write a note on transuranic elements.
18. What is stability constant? Mention the factors that affect the stability of a complexion.
19. Explain the absorption spectra of $[Ti(H_2O)_6]^{3+}$ ion.
20. Write a note on lanthanide contraction. What are its consequences?
21. Write a note on the biochemistry of magnesium and calcium.
22. Write a note on Ziegler- Natta catalyst. $(5 \times 4 = 20)$

Section D
(Answer **any two** questions. Each question carries **10 marks**)
23. Write a short note on carbonyl clusters and halide clusters.
24. Discuss the mechanism of oxygen transport in blood.
25. Discuss the splitting of d orbitals in octahedral, tetrahedral an square planar fields according to crystal field theory.
26. Explain the structure of ferrocene based on VBT and MOT.   (10 × 2 = 20)

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