TB165115D

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

B. Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2018
(2016 Admission Regular & 2015 Admission Supplementary)
SEMESTER V- CORE COURSE (CHEMISTRY)
CH5B05TB – CHEMISTRY OF INORGANIC COMPOUNDS

Time: Three Hours **Maximum Marks: 60**

PART A

I. Answer all questions. Each question carries 1 mark

1. Give the styx number of B_2H_6
2. Zn and Cd are normally not considered as transition metals. Why?
3. What are bridging ligands?Give one example.
4. Define metal carbonyl.
5. Name any two trace elements.

(5 × 1 = 5)

PART B

II. Answer any five questions. Each question carries 2 marks.

6. Comment on the flame colour of alkali and alkaline earth metals
7. Compare lanthanides and actinides (Any 4 points)
8. What are the consequences of lanthanide contraction?
9. Give the formulae of the following complexes.
   a) Bromochlorotetra ammine cobalt(III) chloride
   b) Hexaaquoiron(II) sulphate.
10. Give two examples each for a) hydrate isomerism b) co-ordination isomerism,.
11. Write a short note on organozinc compound.
12. What is meant by polynuclear carbonyl? Give one example.
13. Draw the structure of heme.

(5 × 2 = 10)

PART C

III. Answer any five questions. Each question carries 5 marks.

14. Give a short note on preparation and structure of ClF and ICl_3.
15. Explain the alloy formation of transition metals.
16. Compare the properties of 1st row and 2nd row of transition metals.
17. Explain the following: a) CFSE b) pairing energy and c) EAN with one example each.
18. Discuss the geometrical isomerism of the complexes with co-ordination number six.
19. Write a note on preparation and structure of $Fe_2(CO)_9$,$Mn_2(CO)_{10}$ and $Ni(CO)_4$
20. Give a detailed note on organolithium compound along with its application
21. Explain chelation therapy.

(5 × 5 = 25)

PART D

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

22. Explain a) Nuclear applications of f block elements
    b) Catalytic uses of d block elements.
    c) Alloys formed from d block elements
    d) Transition metal complex formation of d block elements.
23. What is meant by MOT ? Explain the formation of the following complexes with the help of MOT a) $[Fe(CN)_6]^{2-}$ b) $[Fe(CN)_6]^{4-}$. Explain their magnetic property and calculate μ_{eff} in each case.
24. a) Describe the applications of Grignard Reagent in organic synthesis.
    b) Discuss fluxional behavior of metal carbonyls.
25. a)Write a note on the preparation and structure of diborane
    b) List out the functions of myoglobin.

(2 × 10= 20)