C 60130 (Pages : 3) Name.....

Reg. **No**.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2014

(UG–CCSS)

Chemistry

CH 6B 15—INORGANIC CHEMISTRY—II

Time : Three Hours Maximum : 30 Weightage

I. Answer all the *twelve* questions. Each question carries a weightage of $\frac{1}{4}$. This section contains ple choice, fill in the blanks and *one* word answer type questions.

1. Write an example for quadridentate ligand.
2. What is the EAN of Fe in $[Fe(CO)_5]$
3. According to Werner's theory, the secondary valencies of the central metal atom co respond to its _____
4. Hexaflourocobaltate (III) ion is found to be high spin complex, the probable hybrid state of cobalt in it is :

   (a) $d^2 sp^3$. (b) dsp^3.

   (c) sp^3d. (d) spa d^2.

5. Organo metallic compound used in the purification of its metal is :

   (a) $Ni(CO)_4$. (b) $Pb(C_2H_5)_4$.

   (c) Li-C_4H_9. (d) $Na_2[Ni(CN)_4]$.

6. Why is $Fe_2(CO)_9$ diamagnetic ?
7. Porphyrine contains a central 16-membered ring which consists of _____ carbon atoms and _____ nitrogen atoms.
8. SEMs of aligned nanotubes are obtained by the pyrolysis of
9. What is phospham ?

Turn over

10. Complete the following equation :

$3CaO + Al_2O_3$ ———

11. What is the substance added for the setting of cement ?

12. What is the main component in crown glass ?

(12 x 4= 3 weightage)

II. Answer all the *nine* questions. Each question carries 1 weightage.

13. What do you mean by a flexidentate ligand ?

14. Write the IUPAC name of $K_4[Fe(CN)_6]$.

15. Write an example of a complex showing $d^2 sp^3$ hybridization.

16. What is Wilkinson's catalyst ?

17. What is haemoglobin ?

18. Describe cytochromes.

19. How will you prepare gallium nitrate nanowire ?

20. Write the preparation of ZrS_2 nanotubes.

21. What is pyrex glass ?

(9 x 1 = 9 weightage)

III. Answer any *five* questions. Each question carries 2 weightage.

22. On the basis of VB theory, explain the hybridised state of $Ni(CO)_4$.

23. Draw and explain the crystal field splitting in tetrahedral complexes.

24. Explain the use of organosilicon compounds in medicine.

25. Write a note on the application of organometallic compounds as catalysts.

26. Write briefly on anti-cancer drugs.

27. Explain the application of nanotechnology in biology.

28. Write a short note on phosphate fertilizers.

(5 x 2 = 10 weightage)

IV. Answer any *two* questions. Each question carries 4 weightage.

29. Explain the geometrical isomerism in coordination compounds.

30. How will you classify silicates ? Explain their structure.

31. Write in detail about the manufacture of glass.

(2 x 4 = 8 weightage)