) 50742 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2013

(UG-CCSS)

Chemistry—Core Course

CH 5B 09—INORGANIC CHEMISTRY—I

(Common for Industrial Chemistry)

'ime Three Hours Maximum : 30 Weightage

Section A

Answer **all** *questions.*
Each question carries ¼ weightage.

1. What is the dipole moment of CCl_4 ?
2. Hybridization of phosphorus in PCl_5 molecule is _____
3. To oxidation number of iodine in IF_5 is _____
4. In the presence of polyhydroxy organic compounds like mamnitol, boric acid acts as _____
5. XeF_2 has _____ geometry. _____
6. Alkali metals are extracted from their ores by _____ method.
7. Rutile is the ore of _____
8. Iodine is sparingly soluble in water but dissolves in a solution of KJ forming a deep coloured solution containing _____ ion.
9. Zn^{2+}, Cd^{2+} and Hg^{2+} ions are colourless because they have _____ electronic configuration.
10. The general electronic configuration of lanthanides is _____
11. Name an indicator used in complexometric titrations.
12. Give an example for a primary standard in volumetric analysis.

(12 x ¼ = 3 weightage)

Section B

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

13. What is Ellingham diagram ?
14. Explain the thermite reduction.
15. Give a method for the preparation of diborane.
16. Explain the hybridization of nitrogen in NH_3.

Turn over

17. Compare the spin only magnetic moments of Cr^{+}, V^{3+} and Fe^{+}.
18. Why are the lanthanides and actinides placed separately in the periodic table ?
19. What are the characteristics of a primary standard ?
20. Give two advantages of complexometric titrations.
21. What is co-precipitation and how can it be minimized ?

(9 x 1 = 9 weightag

Section C

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

22. State and explain Fajan's rules.
23. What are non-stoichiometric compounds ? Give example.
24. Explain Van Arkel method for the refining of metals.
25. Give the composition and uses of German silver and Brass.
26. Give the structure and properties of borazine.
27. Write a note on interhalogen compounds.
28. Give a method for the elimination of phosphate present in an inorganic mixture.

(5 x 2 = 10 weightage

Section D

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

29. Give the extractive metallurgy of Uranium.
30. Outline the method of separation of noble gases by charcoal method.
31. Write differences and similarities between Lanthanides and Actinide elements.

(2 x 4 = 8 weightage