

[This question paper contains 3 printed pages.]

1908

Your Roll No.

B.Sc. (Prog.) / II

E

CH-201 – INORGANIC CHEMISTRY

(Admissions of 2008 and onwards)

Time : 2 Hours

Maximum Marks : 50

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt only four questions.

Question No. 1 carries 14 marks and is compulsory.

All others carry 12 marks each.

1. Explain any **four** of the following :

- (i) Lithium chloride is soluble in organic solvents.
- (ii) Sb^+ is a reducing agent but Bi^+ is stable.
- (iii) Alkali metals are strong reducing agents.
- (iv) Size of aluminum is larger than that of gallium.
- (v) PCl_5 is a Lewis acid while PCl_3 is a Lewis base.

(3½×4)

P.T.O.

2. (a) Discuss the colour and nature of the solutions of alkali metals in liquid ammonia.
- (b) The electron affinity of phosphorous is lower than silicon and sulphur of the period.
- (c) Explain the diagonal relationship of beryllium and aluminum. (4×3)
3. (a) Describe any two of the following :
- (i) Oxidative refining
- (ii) Zone refining
- (iii) Van Arkel-de Boer
- (b) Discuss the modes of occurrence of metals on the basis of their standard redox potential values. (8,4)
4. (a) Thallous compounds are more stable than thallic compounds.
- (b) Explain viscosity of sulphur first increases and then decreases on heating.
- (c) Why do heavier elements of p-block elements show variable valency ? (4×3)

5. (a) Define allotropy. Discuss the different allotropic forms of carbon.
- (b) (i) Arrange HF, HCl, HBr, and HI in order of increasing acid strength.
- (ii) Explain monobasic behavior of H_3PO_2 .
- (c) (i) Write name, formula and structures of any two oxoacids of chlorine.
- (ii) Discuss the structure of diborane. (4×3)
6. (a) Describe the role and functioning of Na^+/K^+ pump with the help of diagram.
- (b) Describe the source and toxic effect of the mercury, lead and carbon monoxide.
- (c) Discuss the role of Mg^{2+} ions in energy production. (6,3,3)