

[This question paper contains 2 printed pages.]

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Your Roll No. ....

B.Sc. (Prog.)/II

AS

CH-201 : INORGANIC CHEMISTRY

(Admissions of 2008 & onwards)

Time : 2 Hours

Maximum Marks : 50

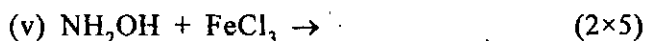
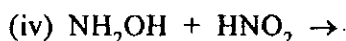
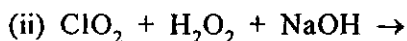
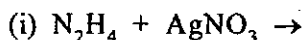
*(Write your Roll No. on the top immediately  
on receipt of this question paper.)*

*Attempt any four questions.*

1. (a) Discuss the structure and bonding in diborane. (4½)  
(b) Discuss the toxic effects of the oxides of nitrogen and sulphur. (4)  
(c)  $\text{PCl}_5$  is a Lewis acid and not a Lewis base, while  $\text{PCl}_3$  is only a Lewis base and not Lewis acid. Explain. (4)
2. (a) Describe van-Arkel and de-Boer method for the purification of metals. (4½)  
(b) Describe the methods used for the purification of the metals titanium and copper respectively. (4)  
(c) Write a note on the modes of occurrence of metals on the basis of electrode potentials. (4)

P.T.O.

3. (a) Complete and balance the following equations :



(b) Hydration energy of lithium ion is maximum in its group. Explain. (2½)

4. Write short notes on any three of the following :

(a) Allotropes of sulphur (4)

(b) Silicates (4½)

(c) Silicones (4)

(d) Allotropes of carbon (4)

5. (a) Describe Na/K pump. (4½)

(b)  $\text{H}_2\text{SO}_3$  is a reducing agent while  $\text{H}_2\text{SO}_4$  an oxidizing agent. Explain. (4)

(c) Discuss the action of heat on sulphur. (4)

6. (a) Write the names, and structures of four oxoacids of phosphorus. (4)

(b) What is hydrometallurgy? Illustrate by two examples. (4½)

(c) Trimethylamine is more basic than trisilylamine. Explain. (4)