

Roll No.

Total Pages : 3

GSE/M-20

1481

CHEMISTRY

(Inorganic Chemistry)

Paper-IV (CH-104)

Time : Three Hours]

[Maximum Marks : 32

Note : Attempt *five* questions in all, selecting *two* questions from each section. Question No. 1 is compulsory.

Compulsory Question

1. Answer in short :

- (i) What is Dry Ice?
- (ii) Why Nitrogen do not form Pentahalides?
- (iii) Why Sodium is stored in kerosine and not in H_2O ?
- (iv) Why inter-halogens are more reactive than Halogens?
- (v) Draw the structure of dimer of Carboxylic acid.
- (vi) What is *p-n-p* transistor?
- (vii) What are Silicones?
- (viii) Why bond angle in NH_3 is 107° while in NF_3 it is 102° ?

(1×8)

SECTION–A

2. (i) What are Intrinsic semiconductors? (2)
- (ii) What are the conditions for the formation of Hydrogen bond? (2)
- (iii) Salts of alkaline earth metals are colourless and diamagnetic. Why? (2)
3. (i) How does BAND theory explains metallic character of Lithium? (2)
- (ii) Discuss structure of BeCl_2 in solid state and in vapour state. (2)
- (iii) Describe briefly dipole-dipole forces. (2)
4. (i) What was the reasoning applied by N. Bartlett to carry out reaction of Xenon with PtF_6 ? (2)
- (ii) Discuss structure of XeO_2F_2 . (2)
- (iii) Why NaOH is more basic than $\text{Ba}(\text{OH})_2$? (2)
5. (i) What are Rectifiers? (2)
- (ii) Why conductivity of Li^{+1} ion in aqueous solution is less than Na^+ ion? (2)
- (iii) Explain why electron affinity of noble gases are zero. (2)

SECTION-B

6. (i) Discuss the structure of Borazine. (2)
- (ii) BH_3 does not exist but dimerise to give B_2H_6 . Explain. (2)
- (iii) Why BF_3 is not hydrolysed by H_2O ? (2)
7. (i) Discuss diagonal relationship of Boron with Silicon. (2)
- (ii) How are cross-linked Silicones prepared? (2)
- (iii) Write structure of HNO_3 and N_2O_5 . (2)
8. (i) Name any four oxy acids of sulphur and write their structures. (2)
- (ii) What happens when H_2O_2 reacts with
- (a) Acidified FeSO_4
- (b) Acidified KMnO_4 . (2)
- (iii) Why Chlorine forms ClF_3 but fluorine does not form FCl_3 . (2)
9. (i) Write note on Orthosilicates and Cyclic silicates. (2)
- (ii) Give any three methods of preparation of B_2H_6 . (2)
- (iii) Discuss structure of ClF_3 . (2)
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