

GSE/M-21**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. (a) What is inert pair effect ?
- (b) Why H_2SO_4 is highly viscous ?
- (c) Which alkaline earth metal is radioactive ?
- (d) Why sodium is stored in kerosene oil and not in H_2O ?
- (e) What is p-n-p transistor ?
- (f) Why xenon forms compounds with F_2 and O_2 ?
- (g) Why CCl_2F_2 is used in refrigerators.
- (h) Write down general electronic configuration of S-Block elements. (1×8=8)

SECTION-A

2. (a) Name two conditions for the formation of H-bond. 2
- (b) Write note on p-type semiconductors. 2
- (c) Describe briefly Dipole-Induced dipole type of Van der Waal's forces. 2

3. (a) Explain the role of semiconductors in photo voltaic cell. 2
- (b) Why Li_2CO_3 is unstable while Na_2CO_3 is quite stable ? 2
- (c) What is structure of Beryllium Chloride in solid state and in vapour state ? 2
4. (a) Discuss diagonal relationship of Beryllium with Aluminium. 2
- (b) Discuss factors which led to late discovery of compounds of noble gases. 2
- (c) Why alkali metals give blue solution in liquid ammonia ? 2
5. (a) Discuss structure of XeF_2 and XeOF_4 . 2
- (b) Why LiF is insoluble in H_2O while fluorides of all other alkali metals are soluble ? 2
- (c) What are main postulates of BAND theory of metallic bonding. 2

SECTION-B

6. (a) What are carbides ? How do CaC_2 and Al_4C_3 differs ? 2
- (b) Draw structures of P_4O_{10} and N_2O_5 . 2
- (c) Give *four* uses of silicone polymers. 2

7. (a) Give any *two* methods of preparation of Borazine. 2
(b) Why BF_3 is less acidic than BCl_3 ? 2
(c) Why CO_2 is gas while SiO_2 is solid ? 2
8. (a) Name any *four* oxy acids of sulphur with their structures. 2
(b) What happens when H_2O_2 reacts with
(i) Acidified KMnO_4 .
(ii) Acidified FeSO_4 . 2
(c) Discuss structure of IF_7 on the basis of hybridization. 2
9. (a) Write note on cyclic silicates. 2
(b) Give any *three* methods of preparation of inter halogen compounds. 2
(c) Chlorine forms ClF_3 while fluorine does not form FCl_3 .
Why ? 2
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