Printing Page(s) : 1 **Paper Code :DSC-109**

Roll No.

B.Sc.(ZBC)-3, B.Sc.(PCM)-5

1st Year Examination, Academic Batch 2017-18

Inorganic Chemistry

Time : 3 Hours] *[Max. Marks : 100*

***Note**. Attempt any **Five** questions. All questions carry equal marks.*

1 Explain Hund's Rule of maximum multiplicity?

2 Explain hybridization? How shapes of molecules are related to the type of hybridization.

3 Discuss the position of alkali metals in the periodic table with reference to electronic configuration and oxidation state?

4 Give a brief account of the compounds of noble gases?

5. (a) Discuss the nuclear fission and nuclear Fusion with suitable example?
(b) Define half life and average life period of radioactive elements? One gram of a radioactive is a topic of sodium decays to 0.25 gm in 20 hours? How much time will it take for 90% disintegration?

6. What are the main postulates of Valence bond theory? Discuss metal ligand bonding of octahedral, square planar and tetrahedral complexes on the basis VBT? What are the limitations of VBT?

7. (a) What are inner transition elements? Discuss the electronic lanthanides on the basis of electronic configuration and magnetic properties? How are lanthanides separated?
(b) Describe in lanthanide contraction? What are its causes? Discuss the consequence of lanthanide contraction?

8. Describe the general properties of transition element of first transition series with respect to metallic character, atomic radii, ionization potential and colour.