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Total No. of Pages : 02

Total No. of Questions : 18

B.Sc. (BT) (2014 to 2017) (Sem.-1)

INORGANIC CHEMISTRY

Subject Code : BSBT-103

M.Code : 47022

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Answer briefly :

1. What do you mean by Ionisation Energy?
2. Out of F and Cl, which has more electron affinity and why?
3. Why are noble gases inert in nature?
4. What do you mean by the term Clathrates? Give example.
5. Why do noble gases need to be liquefied?
6. Differentiate between Ionic and Covalent Bond.
7. What do you mean by Hydrogen Bonding?
8. What are the two different geometries shown by coordination number 4?
9. What is meant by the term CFSE?
10. What is Ferromagnetism?

SECTION-B

11. Draw the stereoisomers possible for $[\text{Pt}(\text{F})(\text{Cl})(\text{Br})(\text{I})]$.
12. Discuss the structure of diborane in detail.
13. Draw CF splitting diagram for octahedral geometry.
14. What is Valence Bond theory? What are its limitations?
15. Discuss Werner's theory of co-ordination compounds.

SECTION-C

16. Draw molecular orbital diagram of CO and compare its stability with CO^+ . Also discuss bonding orbitals of CO^- , CO, CO^+ .
17. a) Discuss the postulates of CFT. Why CF Splitting of Octahedral is more than that of Tetrahedral Complexes?
b) Calculate the CFSE for Fe^{2+} , high spin and low spin complexes.
18. Draw the geometries of the following compounds :

XeF_4 , ClF_4 , PF_6 , IF_7 , SnCl_2 .

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.