B.Sc. DEGREE EXAMINATION,NOVEMBER 2019
I Year I Semester
Allied Chemistry-I

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define non bonding molecular orbital.
2. What is the hybridisation of iodine in IF_7?
3. Why sulphide ores are concentrated by froth floatation process?
4. Explain whether entropy is extensive or intensive property.
5. What is an adiabatic process?
6. Write any one limitation of first law of thermodynamics.
7. Write the applications of paper chromatography.
8. Define stereo isomerism.
9. What causes optical activity?
10. Define bond order.
11. Define isolated system.
12. Explain the isomerism exhibited by maleic and fumaric acids.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Write the preparation, hybridisation and shape of BF_3.
14. Describe the Van Arkel process and Zone refining.
15. State the second law of thermodynamics in different ways.
16. Distinguish between an isothermal and adiabatic process.
17. Explain why four covalent bonds in methane are equivalent.
18. Write short note on chemical separation method of ore dressing.
19. Write a note on optical isomerism of lactic acid.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Discuss the molecular orbital diagram of (i) N_2 (ii) O_2.
21. Derive on expression for efficiency using Carnot's cycle.
22. Give the properties and synthesis of naphthalene.
23. Define: chromatography? Explain the principle and applications of (i)thin layer chromatography (ii) column chromatography.
24. (a) Discuss the orbital structure of acetylene.
    (b) Explain optical isomerism of tartaric acid.

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