B.Sc. DEGREE EXAMINATION,APRIL 2020
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. Give the shape of IF_7
2. How are ores classified?
3. What is an extensive property?
4. Mention any two applications of TLC.
5. All natural processes are spontaneous. Why?
6. What is hybridisation?
7. Define optical isomerism with an example.
8. What is plane of symmetry in optical activity?
9. Mention any two uses of naphthalene.
10. Give the MO configuration of N_2 molecule.
11. What is an isolated system?
12. What is resolution?

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

Answer any **FIVE** questions

13. Explain the preparation and hybridisation in BrF_3
14. Discuss the Van Arkel process of refining.
15. State the First law of thermodynamics and explain the need for second law.
16. Describe the principle and applications of paper chromatography.
17. Explain the hybridisation and the geometry of ethylene molecule.
18. Discuss the geometrical isomerism in maleic and fumaric acid
19. Explain the various elements of symmetry in optical activity.

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

Answer any **THREE** questions

20. Discuss the characteristics of molecular orbital theory and explain the MO diagram of O2 molecule.
21. (a) Explain the various methods of reduction of ores. (6)
    (b) Explain Zone refining. (4)
22. Explain Carnot's cycle and determine the efficiency of a heat engine.
23. (a) Explain the principle and application of column chromatography. (6)
    (b) describe the various racemisation methods. (4)
24. Elucidate the structure of naphthalene and explain Haworth synthesis.

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