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 orbital.
2. What is bond order?
3. Give example of oxide and sulphide ore.
4. Define smelting.
5. Differentiate isothermal and adiabatic process.
6. What is an isolated system?
7. Define chromatography.
8. Give the application of paper chromatography.
9. What is hybridisation?
10. Define optical activity.
11. What is racemisation and resolution?
12. Write the shape of IF_7.

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

Answer any **FIVE** questions

13. Explain using M.O diagram calculate the bond order of N_2 molecule.
14. Describe the process of ore dressing.
15. Explain intensive and extensive properties.
16. Discuss the principle and application of TLC.
17. Explain the hybridisation and structure of benzene.
18. Describe geometrical isomerism of maleic and fumaric acid.
19. Explain (a) the role of carbon in steel (b) alloy steels

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

Answer any **THREE** questions

20. Discuss the preparation and structure of BrF_3 and IF_5.
21. Describe (a) Van Arkel process (b) Zone refining (c) Heat treatment of steel.
22. Explain carnot cycle and efficiency of a heat engine.
23. Describe the principle and applications of column chromatography.
24. Explain the optical isomerism in lactic acid and tartaric acid.

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