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. Calculate the bond order of Nitrogen molecule.
2. What are non-bonding orbitals?
3. Differentiate ore and Minerals.
4. Write the Examples of oxide and sulphide ores.
5. Distinguish between isothermal and adiabatic process.
6. Define the second law of thermodynamics.
7. Define chromatography.
8. Write the applications of paper chromatography.
9. What is hybridization?
10. What are the conditions for the compound to be optically active?
11. What is alloy Steel? give examples?
12. What are intensive and extensive properties?

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

Answer any **FIVE** questions

13. Describe heat treatment of Steel.
14. Differentiate reversible and Irreversible processes.
15. Explain the principle and application of thin layer chromatography.
16. Explain the hybridization and geometry of benzene.
17. Describe the structure and naphthalene by synthesis.
18. Explain van-arkel and zone refining process.
19. Explain the shape of IF_7 molecule.

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

Answer any **THREE** questions

20. Explain the preparation, hybridization and shape of BrF_3 and IF_5.
21. Explain the role of carbon in properties of steel and reduction methods in the extraction of metals.
22. Discuss the principle and application of column chromatography.
23. Explain Carnot cycle and how is efficiency of heat engine calculated.
24. Explain the optical isomerism exhibited by lactic acid and tarataric acid.

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