SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - III
20UPBAT3003 - Allied Chemistry-I

Total Duration : 2 Hrs 30 Mins.   **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Mention the important postulates of molecular orbital theory.

2. Sketch out the linear combination of atomic orbitals and explain its importance in bonding.

3. Analyze the role of calcination and roasting process in metallurgy.

4. Illustrate the various thermodynamic process with suitable examples.

5. Comment on the statement. "Entropy of the universe is always increasing".

6. Distinguish thin layer chromatography and column chromatography.

7. Predict the hybridization involved in methane and ethylene molecule with neat sketch.

8. Differentiate racemization and resolution.

Section B

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Describe the M.O diagram of N_2 molecule and predict its bond order.

10. What are all the different techniques applied in the purification or refining of a metal?

11. How do you calculate the efficiency of heat engine with the help of Carnot's cycle?

12. Explain the applications of column, thin layer and paper chromatography techniques.

13. Elucidate the structure of naphthalene.

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