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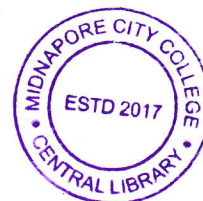
**PG CBCS**  
**M.Sc. Semester-IV Examination, 2022**  
**CHEMISTRY**  
 PAPER: CEM 404 (SPL PAPER)  
**(CHEMISTRY IN TECHNOLOGY)**

Full Marks: 40

Time: 2 Hours

**GROUP - A****1. Answer any four questions from the following questions: 2×4 = 8**

- a) Discuss what types of information are obtained from the Isothermal titration calorimetry (ITC).
- b) What are the advantages of using atomic force microscopy (AFM)?
- c) Write some applications of Electron Microscopy on Biomolecules.
- d) How do you minimize galvanic corrosion?
- e) What is corrosion?
- f) What health problems arise due to the presence of ozone?

**GROUP - B****2. Answer any four questions from the following questions: 4×4 = 16**

- a) Assign the characteristics band present in the A, B, and Z forms of DNA in circular dichroism (CD) spectroscopy.
- b) Describe some applications of Isothermal titration calorimetry (ITC) in drug discovery and development.
- c) Describe the working principle of the transmission electron microscope (TEM).
- d) Describe the biochemical effect of arsenic.
- e) What is the basic principle of Corrosion? Explain with an example.
- f) Describe the environmental effect of ozone and PAN.

**GROUP - C****3. Answer any two questions from the following questions: 8×2 = 16**

- a) Assign the characteristics band presents in circular dichroism (CD) spectra for the secondary and tertiary structure of a protein.
- b) Describe how the Isothermal titration calorimetry (ITC) works.
- c) Write short notes on
  - (i) the Biochemical effect of pesticides.
  - (ii) Pitting corrosion.
- d) Discuss various methods of corrosion protection.

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