

## Cluster Innovation Centre

Examination : End Semester Examination-May/June 2024  
Name of the Course : B.Tech. (Information Technology & Mathematical Innovations)  
Name of the Paper : Engineering Chemistry-II  
Paper Code : 3124611202  
Semester : II

Duration: 2 hours

Maximum Marks: 60

### Instructions for Candidates

Attempt any four questions. Each question carries equal marks.

Q. 1. Why is water conservation important for the survival of life on Earth? Explain its importance and give innovative ways to conserve water, engaging nature, through technological ways or with community participation.

[6+9=15]

Q. 2. Write short notes on any two of the following:

[15]

- (i). Bakelite
- (ii). Nylon
- (iii). Glyptal
- (iv). Plastic

Q. 3. Define alkalinity of water, its significance, and the methods for measuring alkalinity in water. Also, elaborate on water quality standards and name the key organizations responsible for setting and maintaining them.

[8+7=15]

Q. 4. Discuss and compare glass with ceramics. Mention about their properties, applications by giving suitable examples.

[15]

Q. 5. Compare UV-Visible spectroscopy, FTIR spectroscopy, Fluorescence spectroscopy, and Circular Dichroism spectroscopy in terms of their underlying principles, instrumentation and applications.

[15]

Q. 6. Differentiate between any two of the following:

[15]

- (i). Softening of water and hardness of water
- (ii). Magnetic, biodegradable and condensation polymers
- (iii). Rigid PVC and flexible PVC
- (iv). Desalination and Defluoridation