

**Roll No.**

**Total No. of Pages : 02**

**Total No. of Questions : 09**

**B.Tech. (Agriculture Engineering) (Sem.-1)**

# ENGINEERING CHEMISTRY

**Subject Code : BTAG-103-22**

**M.Code : 92761**

**Date of Examination : 18-01-23**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

## SECTION-A

**1. Write short notes on :**

- a) Define Degree of Freedom. How many Degrees of Freedom involved in triple point and eutectic point.
- b) Distinguish between gross and net calorific value of a fuel.
- c) Give the cause of corrosion.
- d) What causes the temporary and permanent hardness of water?
- e) What are the applications of polarography?
- f) Differentiate thermosetting and thermoplastic polymers with suitable examples.
- g) What are the main mechanisms of lubrication?
- h) What do you understand by fermentation?
- i) What are lipids and how is it essential for body function?
- j) Explain polydispersity index of a polymer.

## SECTION-B

2. Draw the phase diagram of one component water system.
3. What do you understand by wet and dry corrosion? How the corrosion can be prevented?
4. What are fuels? Give complete classification of fuels with examples.
5. What are the disadvantages of using hard water in boilers? Give an account of boiler trouble.

## SECTION-C

6. Explain the principle and applications of thermo-gravimetric method.
7. **Write a short notes on:**
  - a) Carbohydrate
  - b) Flavouring reagents of food.
8. Define polymer. Describe the different types of polymers and their uses.
9. What do you understand by enzymes. How is it useful for the manufacture of ethanol and acetic acid by fermentation method?

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**