Code No. E-5870/N/AICTE

FACULTY OF ENGINEERING

B.E.(EEE/EIE/CSE/CME/DS) I-Semester (AICTE)(Main & Backlog) Examination, February/March 2023

Subject: Chemistry

Time: 3 Hours **Max. Marks: 70**

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each questions carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. (a) Differentiate between Galvanic and Electrolytic cell.
   (b) How do you sterilize water by Chlorination?
   (c) Write monomeric units of Nylon 6:6 polymer.
   (d) Express Dulong's formula for the calculation of calorific value.
   (e) What are the important sources of Biodiesel?
   (f) Define Pitting corrosion.
   (g) Explain any four requirements of a good fuel.

2. (a) How do you determine the P^H of a solution using Quinhydrone electrode?
   (b) Define fuel cell. Discuss the construction and applications of Methanol-Oxygen fuel cell.

3. (a) Write the principle of EDTA method. Explain the determination of hardness of water by EDTA method.
   (b) Define Electrochemical corrosion. Discuss the mechanism of electrochemical corrosion in detail.

4. (a) What are conducting polymers? Explain the mechanism of conduction in Polyacetylene.
   (b) Define Biodegradable polymer. Discuss the properties and applications of Polylactic acid.

5. (a) Define Cracking. Illustrate the Catalytic cracking by Moving bed method.
   (b) A sample of coal contain: C=80%; H=5%; O=1%; N=2% remaining being ash. Calculate the amount of minimum air required for complete combustion of 1 Kg of coal sample.

6. (a) Discuss the principles of Green chemistry in detail.
   (b) Define composites. Explain the important applications of Composites.

7. (a) Explain the construction of Calomel electrode with a neat diagram.
   (b) Discuss the surface coating process by Galvanizing method.

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