

QP CODE 2030553404

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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – JUNE 2024

Semester: III

055CH34 ENGINEERING CHEMISTRY

Time: 3:00 Hours

Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

1. a) Define a Battery. (2 Marks)
b) Explain the working principle of a lithium-ion battery. (10 Marks)
c) Significance of Standard Electrode Potential. (8 Marks)
2. a) Describe the factors affecting Corrosion based on the nature of Metals. (10 Marks)
b) Elaborate on the factors impacting corrosion on the basis of the nature of Corroding Environment. (10 Marks)
3. a) Explain the steps involved in the Proximate analysis. (10 Marks)
b) Outline the Characteristics of a good fuel. (10 Marks)
4. a) Estimation of hardness by EDTA method and the methods involved in water purification. (15 Marks)
b) Elaborate the Disadvantages of hard water. (5 Marks)
5. a) Explain the classification of Polymers on the basis of Structure. (10 Marks)
b) Elaborate the classification of Polymers on the basis of nature of Monomers. (10 Marks)
6. a) Write detailed account on the Characteristics of Batteries. (10 Marks)
b) Evaluating the performance of a battery. (10 Marks)
7. a) Explain the Ultimate analysis method used to determine the Carbon, Hydrogen, Nitrogen, Sulphur and Oxygen content present in the solid fuel. (15 Marks)
b) Write down different form in which Calorific Value can be expressed. (5 Marks)