**Code No.BS107HS**

**METHODIST COLLEGE OF ENGINEERING & TECHNOLOGY**

**(An Autonomous Institution)**

**B.E. (CIVIL/MECH) I-Semester (Supplementary) Examination, September-2023**

**Subject: ENGINEERING CHEMISTRY**

**Time: 3 hours Max.Marks:60**

**Note: Missing data, if any, maybe suitably assumed.**

**PART-A**

**Answer All the questions.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q.No.** | **Questions** | **Marks** | **CO** | **BTL** |
| **1. a** | **Show the cell notation of zinc-carbon battery** | **2** | **1** | **II** |
| **b** | **Relateelectrode potential with standard electrode potential** | **2** | **1** | **II** |
| **c** | **Classify types of corrosion** | **2** | **2** | **II** |
| **d** | **A sample of hard water was found to contain 27.2 mg/lit of CaSO4 and 9.5 mg/lit of MgCl2. Calculate the permanent hardness of water sample.** | **2** | **2** | **III** |
| **e** | **Illustrate the structure of Nylon 6:6** | **2** | **3** | **II** |
| **f** | **List any four applications of polylactic acid** | **2** | **3** | **I** |
| **g** | **Distinguish between LCV and HCV** | **2** | **4** | **IV** |
| **h** | **Define octane number.** | **2** | **4** | **V** |
| **i** | **Discuss saponification number** | **2** | **5** | **V** |
| **j** | **Distinguish between puzzolana cement and Portland cement**  | **2** | **5** | **II** |

**PTO**

**PART-B**

**Answer Any Five questions**.

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| **Q.No.** |  | **Questions** | **Marks** | **CO** | **BTL** |
| **2.** | **a** | **Outline the principle of pH determination using quinhydrone electrode** | **8** | **1** | **III** |
| **b** | **Discuss the charging anddischarging processes of Lead-Acid battery**  |  | **1** | **V** |
| **3.** | **a** | **Explain the principle of determination of alkalinity of water** | **8** | **2** | **II** |
| **b** | **Examine the factors affecting the rate of corrosion**  |  | **2** | **IV** |
| **4.** | **a** | **Explain the preparation of Bakelite**  | **8** | **3** | **II** |
| **b** | **Explain Co-polymerization with an example** |  | **3** | **IV** |
| **5.** | **a** | **Discuss the significance of ultimate analysis of coal** | **8** | **4** | **V** |
| **b** | **Illustrate transesterification reaction for the production of biodiesel**  |  | **4** | **II** |
| **6.** | **a** | **Outline the manufacture of refractories**  | **8** | **5** | **II** |
| **b** | **Explain extreme Hydrodynamic lubrication**  |  | **5** | **IV** |
| **7.** | **a** | **Construct calomel electrode** | **8** | **1** | **III** |
| **b** | **List the specifications of potable water** |  | **2** | **III** |
| **8.** | **a** | **What do you understand by the term calorific value? Relate HCV with LCV** | **8** | **3** | **I&II** |
| **b** | **List the applications of nylon 6:6 and Dacron** |  | **4** | **IV** |
| **9.** | **a** | **Explain any two properties of lubricants** | **8** | **5** | **IV** |
| **b** | **Elaborate the significance of natural cement** |  | **5** | **V** |

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