**Code No.BS206HS**

**METHODIST COLLEGE OF ENGINEERING & TECHNOLOGY**

**(An Autonomous Institution)**

**B.E. (EEE/ECE) I-Semester (AICTE) Examination, March-2023**

**Subject: 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** | What are the monomers of Bakelite and Nylon6,6 Polymers | **2** | **3** | **1** |
| **b** | Define octane number | **2** | **4** | **1** |
| **c** | What are the advantages of biodiesel over petrodiesel | **2** | **5** | **2** |
| **d** | Compare primary and secondary batteries. | **2** | **1** | **2** |
| **e** | Calculate the single electrode potential of Cu+2 (0.1 M)/ Cu electrode at 25º C. Given E0 of Cu 0.34 volts | **2** | **1** | **5** |
| **f** | Distinguish between LPG and CNG. | **2** | **2** | **4** |
| **g** | What is alkalinity in water . what are the ions responsible for alkalinity in water | **2** | **2** | **1** |
| **h** | Differentiate HCV and LCV | **2** | **4** | **2** |
| **i** | What is the Principle involved in the cathodic protection method | **2** | **2** | **2** |
| **j** | Give any 2 applications of conducting polymers | **2** | **3** | **3** |

**PTO**

**PART-B**

**Answer Any Five questions**.

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| **Q.No.** |  | **Questions** | **Marks** | **CO** | **BTL** |
| **2.** | **a** | Describe the construction and working of Quinhydrone electrode | **8** | **1** | **1** |
| **b** | Write the cell reaction and calculate the emf of following cell at 25◦C. Zn(s) IZn+2 (0.2M) II Ag+ (0.02M) I Ag(s) Given E◦ Zn+2/Zn =-0.76v, E◦ Ag+ /Ag= +0.8v. |  | **1** | **5** |
| **3.** | **a** | Write short notes on break point chlorination and its significance | **8** | **2** | **2** |
| **b** | Discuss desalination of brackish water by reverse osmosis process. What are its advantages |  | **2** | **2** |
| **4.** | **a** | Describe the mechanism of conduction in Conducting polymers by considering polyacetylene as example | **8** | **3** | **3** |
| **b** | Write preparation ,properties and uses of PVC |  | **3** | **2** |
| **5.** | **a** | What is composition and uses of important fractions obtained i.e. Gasoline, diesel and kerosene | **8** | **4** | **1** |
| **b** | Explain fractional distillation of crude oil |  | **4** | **2** |
| **6.** | **a** | Explain Trans-esterification in Biodiesel formation and discuss  advantages of biodiesel over petro-diesel | **8** | **5** | **2** |
| **b** | Explain any 4 Principles of Green chemistry with appropriate examples |  | **5** | **1** |
| **7.** | **a** | Discuss various factors effecting rate of corrosion | **8** | **2** | **2** |
| **b** | Write a short note on Sacrificial anodic protection method |  | **2** | **2** |
| **8.** | **a** | Describe the construction and working of Hydrogen-O2 fuel cells | **8** | **1** | **1** |
| **b** | Define Cracking and write a note on it types |  | **4** | **1** |
| **9.** | **a** | What are renewable and non-renewable energy sources? Give examples | **8** | **5** | **2** |
| **b** | Differentiate thermoplastic and thermosetting polymers |  | **3** | **2** |

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