**20EE203**

**Hall Ticket Number:**

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| **I/IV B.Tech (Regular) DEGREE EXAMINATION** | | | |
| **October, 2021** | **Electrical & Electronics Engineering** | | |
| **Second Semester** | **Engineering Chemistry** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |

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|  |  |  | CO | BL | M |
| 1 | a) | What type of ions creates alkalinity in the water? | CO1 | L1 | 1M |
|  | b) | Define Priming. | CO1 | L2 | 1M |
|  | c) | Write the chemical formula of calgon. | CO1 | L2 | 1M |
|  | d) | List out two examples of Coagulants. | CO1 | L1 | 1M |
|  | e) | Define wet corrosion. | CO2 | L2 | 1M |
|  | f) | What are sacrificial anodes? Give examples | CO2 | L2 | 1M |
|  | g) | Write note on stress corrosion. | CO2 | L1 | 1M |
|  | h) | Mention the units of calorific value. | CO3 | L1 | 1M |
|  | i) | Illustrate the examples of the anti-knocking agents. | CO3 | L1 | 1M |
|  | j) | Define octane number. | CO3 | L1 | 1M |
|  | k) | Name the apparatus used for the analysis of flue gas. | CO3 | L1 | 1M |
|  | l) | Summarize the applications of paracetamol. | CO4 | L1 | 1M |
|  | m) | Mention names of the monomers in the preparation of Bekalite. | CO4 | L1 | 1M |
|  | n) | Write the structure of Aspirin. | CO4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Discuss the method for the determination of total hardness of water by EDTA method. | CO1 | L3 | 7M |
|  | b) | Define sludges? Describe the formation, disadvantages, and removal methods. | CO1 | L2 | 7M |
|  |  | **(OR)** |  |  |  |
| 3 | a) | Write note on WHO standards for drinking water. | CO1 | L1 | 7M |
|  | b) | Explain the various methods of Municipal treatment of water for drinking purpose. | CO1 | L2 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | Derive Nernst equation for the single electrode potential. Write it’s any two applications. | CO2 | L3 | 7M |
|  | b) | Explain any three factors effecting the rate of corrosion. | CO2 | L2 | 7M |
| **(OR)** | | | | | |
| 5 | a) | Define Chemical corrosion .Explain how environment gases are responsible for chemical corrosion. | CO2 | L2 | 7M |
|  | b) | Explain the method of electroless Ni plating. | CO2 | L2 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | Compose the construction and working of Bomb calorimeter with neat label diagram. | CO3 | L2 | 7M |
|  | b) | Write note on coal ranking. | CO3 | L2 | 7M |
| **(OR)** | | | | | |
| 7 | a) | Summarize (a) Cetane number (b) CNG and LPG | CO3 | L1 | 7M |
|  | b) | Explain the method of analysis of flue gas by orsat apparatus. | CO3 | L3 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Formulate the mechanism of SN1 & SN2 reactions. | CO4 | L2 | 7M |
|  | b) | What is Markownikoff’s rule? Explain the mechanism of addition of HBr to propene. | CO4 | L3 | 7M |
| **(OR)** | | | | | |
| 9 | a) | Write the differences between thermo plastics and thermo setting plastics. | CO4 | L1 | 7M |
|  | b) | Explain the preparation, properties and applications of Bakelite. | CO4 | L3 | 7M |

