

**I B. Tech II Semester Supplementary Examinations, Nov/Dec - 2019****ENGINEERING CHEMISTRY**

(Com. to ECE, EEE, EIE, Bio-Tech, E Com E, Agri E)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question paper consists of two parts (**Part-A** and **Part-B**)  
2. Answering the question in **Part-A** is Compulsory  
3. Answer any **THREE** Questions from **Part-B**

**PART -A**

1. a) Write a note on sterilization of drinking water. (4M)
- b) Define primary and secondary battery with examples. (3M)
- c) What is meant by metal cladding? Give one example. (3M)
- d) Differentiate thermoplastics and thermosetting plastics. (4M)
- e) Define combustion. Calculate the weight of air required for combustion of 6 kg of carbon. (4M)
- f) Explain how cement concrete deteriorates when exposed to CO<sub>2</sub> and SO<sub>2</sub>. (4M)

**PART -B**

2. a) What are boiler troubles? Explain caustic embrittlement. (8M)
- b) Explain the working of glass electrode. Mention its advantages and limitations. (8M)
3. a) Define corrosion. Explain how temperature, position of metal in galvanic series, overvoltage and pH affect the rate of corrosion. (8M)
- b) Discuss the mechanical properties with stress-strain graph of polymers. (8M)
4. a) Discuss estimation of moisture, volatile matter and ash by proximate analysis. (8M)
- b) Explain chemical vapour deposition method and arc discharge method of preparation of nanotubes. (8M)
5. a) Explain how bullet proof plastics are prepared and their applications. (8M)
- b) Discuss about organic surface coatings. (8M)
6. a) Explain the application of Kohlrausch law in determination of degree of dissociation and solubility of sparingly soluble salts. (8M)
- b) How is natural gas obtained? Explain its applications. (8M)
7. a) Explain how polyvinyl chloride is prepared. Mention the difference between rigid and plasticized PVC and their applications. (8M)
- b) Explain ion exchange process and its advantages. (8M)