I B. Tech II Semester Supplementary Examinations, December - 2020 ENGINEERING CHEMISTRY

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

Note: 1. Question paper consists of two parts (Part-A and Part-B)

Max. Marks: 70

Time: 3 hours

2. Answering the question in **Part-A** is Compulsory 3. Answer any **THREE** Questions from **Part-B** PART -A 1. a) Explain carbonate and non-carbonate hardness. How can they be removed? (3M)b) What are ion selective electrodes? (4M) What are paints? Explain the role of drying oils in paints. (4M) Differentiate between high density and low density polyethylene. (4M) Write the advantages of CNG as a fuel. (3M)Explain the reasons for deterioration of cement concrete. (4M) PART -B a) Discuss the mechanical properties of polymers. (8M)Explain ultimate analysis of coal and its significance. (8M)a) Explain the reasons for boiler corrosion and how they are removed. (8M)b) Write a short note on (i) fluoride electrode (ii) galvanic cell (8M)4. a) A coal sample is found to contain C = 60%, H = 3%, O = 8%, S = 4% and (8M)remaining ash. Calculate the quantity of dry products of combustion, if 1 kg of coal is burnt with 10% excess air. Explain the applications of green synthesis. (8M)a) Discuss about cathodic protection. (8M)b) Explain hot lime soda process for softening of hard water. (8M)a) What is electrochemical series? Give its applications. (8M)b) What are synthetic rubbers? Explain the preparation and applications of styrene (8M)butadiene rubber. 7. a) Explain the smetic and lyotropic liquid crystals. (8M)b) Describe the environmental factors that affect corrosion. (8M)1 of 1