Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2020

Course: Polymer Science and Engineering Semester: VIII Program: B. Tech (CE+RP) Time 03 hrs. Course Code: CHEG 384 Max. Marks: 100 Instructions: Answer all the questions from Section-A, Section-B and Section-C SECTION A S. No. Marks CO Q 1 What is the structure based name for Polypropylene_ 5 (a) Poly(1-phenylethylene) (b) Poly(1-acetoxyethylene) **CO1** (c) Poly(1-methylethylene) (d) None What is termination by disproportionation? Q 2 5 CO₂ Q 3 Atom Transfer Free Radical polymerization is carried out in _____ 5 (a) Bulk polymerization (b) Solution polymerizations CO₂ (c) Suspension polymerization (d) All the above Q 4 Determine the Number Average Molecular Weight, Weight Average Molecular 5 Weight for three molecules 1.00×10^5 2.00×10^5 and 3.00×10^5 **CO4** (a) 2.11×10^5 , 2.33×10^5 (b) 2.00×10^5 , 2.33×10^5 (c) 2.00×10^5 , 2.53×10^5 (d) None **SECTION B** Q 5 **Describe** the classification of polymers in detail 12 CO₁ (a) Anionic addition polymerization is called living polymerization. Justify Q 6 (b) The polymer formed in cationic addition polymerization is called living polymer. 6+6 CO₂ Justify List out the techniques for molecular weight determination. **Discuss** the technique of Q 7 12 **CO4** Osmometry to determine molecular weight. Classify various ways of degradation occurs in polymers. Discuss about Mechanical Q 8 12 CO₅ Degradation. **Q** 9 (a) Mention the disadvantages of solution polymerization 6+6 CO₃ (b) Describe the Bulk polymerization in detail SECTION-C O 10 List out the techniques of polymerization. **Describe** Emulsion polymerization 20 CO₃ mentioning typical recipe for the production of polymers