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## **CM-7005(2)-CBGS**

### **B.E. VII Semester**

Examination, December 2020

## **Choice Based Grading System (CBGS)**

### **Polymer Technology**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Explain the characteristics of chain growth polymerization and explain the distinctive features of polymer reaction engineering.  
b) Discuss the number and weight fraction, number average degree of polymerization, molecular weight distribution terms used for the characterization of mixtures of polymer molecules.
2. a) Define fillers and additives with an example.  
b) Give short note on emulsion and suspension polymerization.
3. Discuss the necessary equation for the steady state population balance equation for the particles having 'n' radicals in the Emulsion Polymerization.
4. Write a short note on the following:
  - a) Acidolysis and aminolysis
  - b) Crosslinking reactions
  - c) Reactions of block copolymers.

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5. a) Why the numbers 6, 6 and 6 are put in the name of nylon-6, 6 and nylon-6? Describe the synthesis of poly (vinyl chloride).  
b) Describe the manufacture, properties and uses of a batch process to produce polystyrene.
6. Give the preparation steps, properties and application of the Nylon polyamides.
7. a) Explain shear stress strain rate curves for Bingham plastic.  
b) Enlist general characteristics and applications of polymer concrete products.
8. a) What is a biodegradable polymer? Give example of biodegradable polymers.  
b) What do you mean by synthetic metal? Explain with examples.

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