

**Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous), Rajkot**  
Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION NOVEMBER - 2017**

**M. Sc. Industrial Chemistry**

**16PICCC12 - POLYMER CHEMISTRY AND TECHNOLOGY**

***Duration of Exam – 3 hrs***

***Semester – III***

***Max. Marks – 70***

**Part A (5X2= 10 marks)**

Answer **ALL** questions

1. What is addition polymerization? Give an example.
2. Explain spinning technique with suitable example.
3. Enlist various extrusion process parameters.
4. Enlist properties and application of PBSA.
5. Which raw material are used in synthesis of Nylon 6,6' and Nylon-6 ?

**Part B (5X5= 25 marks)**

Answer **ALL** questions

- 6a. Write a short note on difference in the solubility behavior between low molecular weight compound and a polymer.

**OR**

- 6b. Write a short note on bulk polymerization.

- 7a. Write a short note on Die casting.

**OR**

- 7b. What is injection molding method? Explain in detail with suitable examples.

- 8a. Write a short note on advantages and disadvantages of extrusion of plastics.

**OR**

- 8b. Explain briefly. Over jacketing extrusion.

- 9a. i) What is the density range of PLA, PGA and PHA ?

- ii) Enlist properties and application of PHA and PLA.

**OR**

- 9b. Describe manufacturing process of PBSA.

- 10a. Explain Philip's process for manufacturing of HDPE.

**OR**

- 10b. Describe blending process of PVC in detail.

**Part C (5x7= 35 marks)**

Answer **ALL** questions

11a. Write a detailed note on classification of polymers.

**OR**

11b. Explain in details. Solid and gas phase polymerization.

12a. Explain in detail. Calendaring process of polymer.

**OR**

12b. Write a detailed note on foaming process of polymer.

13a. What is extrusion of plastic? Write principle, construction and working of extrusion process.

**OR**

13b. Write a detailed note on blown film extrusion process.

14a. Discuss properties, application and manufacturing process for Poly Glycolic Acid with chemical reaction.

**OR**

14b. Give properties, application and manufacturing process for Poly Lactic Acid with chemical reaction.

15a. Discuss manufacturing of polyethylene terephthalate in detail.

**OR**

15b. Explain manufacturing of Epoxy resin in detail.

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