Seat No.: _____  Enrolment No. 

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019**

**Subject Code: 2142306** **Date: 12/12/2019**

**Subject Name: Manufacturing of plastics Material-2**

**Time: 10:30 AM TO 01:00 PM** **Total Marks: 70**

**Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

| | | | MARKS |
|---|---|---|---|
| **Q.1** | **(a)** | Draw the structures of: PS, PVC and PTFE. | **03** |
| | **(b)** | Differentiate between Thermoplastic and Thermoset. | **04** |
| | **(c)** | Give difference between addition and condensation polymerization. | **07** |
| **Q.2** | **(a)** | Draw the structure of ABS and give its applications. | **03** |
| | **(b)** | Write a note on: Bulk polymerization technique. | **04** |
| | **(c)** | Explain the manufacturing of Polystyrene (PS) by the tower process with neat diagram. | **07** |
| | | **OR** | |
| | **(c)** | Discuss: Distillation, Absorption and Extraction. | **07** |
| **Q.3** | **(a)** | Draw layout and arrangement of polymer plant. | **03** |
| | **(b)** | Give properties and applications of PVC. | **04** |
| | **(c)** | How Nylon-6 is manufactured? Discuss with neat diagram. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Give structures of Isotactic, Syndiotactic and Atactic PP. | **03** |
| | **(b)** | List various properties and applications of Nylon-66. | **04** |
| | **(c)** | Explain suspension polymerization technique to manufacture Polyvinyl chloride (PVC). | **07** |
| **Q.4** | **(a)** | What are commodity and engineering plastics? Give their examples. | **03** |
| | **(b)** | List properties and application of PTFE. | **04** |
| | **(c)** | Give structure of PET and explain manufacturing process of PET. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Give properties and application of Polycarbonate (PC). | **03** |
| | **(b)** | Draw structure of Polyacetal. Give its properties and applications. | **04** |
| | **(c)** | Draw flow diagram to manufacture Polypropylene (PP) and explain. | **07** |
| **Q.5** | **(a)** | List properties and application of PPS. | **03** |
| | **(b)** | Give full form of PEEK. List the properties and applications of PEEK. | **04** |
| | **(c)** | With neat diagram explain manufacturing of High Density Polyethylene (HDPE). | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Discuss Suspension Polymerization Technique. | **03** |
| | **(b)** | Compare the structure and properties of LDPE, LLDPE and HDPE. | **04** |
| | **(c)** | Explain manufacturing process for Polycarbonate (PC). | **07** |

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