

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012

Subject code: 162301**Date: 02/01/2013****Subject Name: Plastic Extrusion Technologies****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) Differentiate between Co rotating and Counter rotating twin screw extruder. **07**
(b) Discuss the working principle of a single screw extruder. Also compare single screw v/s. twin screw extruder. **07**
- Q.2** (a) With a neat line diagram, discuss the manufacture of Nylon monofilaments. **07**
(b) Define : Takeoff unit; sizing; extrusion; sagging; root diameter; flight depth; die swell **07**
- OR**
- (b) Discuss various types of heating systems used on screw extruders. **07**
- Q.3** (a) Differentiate between screen pack and breaker plate. **07**
What is the significance of hopper cooling?
(b) With a neat line diagram, discuss the manufacture of HMHDPE films. **07**
- OR**
- Q.3** (a) Discuss parts of a single screw extruder in detail. **07**
(b) A plastic film, 0.320 mm thick, is required to have its orientation in the transverse direction twice that in the machine direction. If the film blowing die has an outer diameter of 130mm and an inner diameter of 126 mm, estimate the blow up ratio required and the lay flat film width. Neglect extrusion effects and assume there is no drawdown. **07**
- Q.4** (a) Discuss thrust bearing blocks of a single and twin screw extruders with diagrams **07**
(b) Discuss the various types of drives used on screw extruders. **07**
- OR**
- Q.4** (a) What is the importance of GROOVED BARREL TECHNOLOGY? Discuss in detail. **07**
(b) Discuss in detail, the manufacture of Wires and cables. Give a neat line diagram. **07**
- Q.5** (a) Discuss manufacture of plastic sheets by extrusion. Draw suitable line diagram to explain the same. **07**
(b) What is the difference between blown films and cast films? **07**
- OR**
- Q.5** (a) What are the properties to be considered for the raw material while selecting the same for extrusion process. Discuss in detail. **07**
(b) Discuss the various types of drives used on screw extruders. **07**
