

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER–EXAMINATION – MAY- 2012****Subject code: 162301****Date: 09/05/2012****Subject Name: Plastic Extrusion Technologies****Time: 10:30 am – 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.

- Q.1** (a) Discuss in detail, heating systems available on screw extruders. **07**
 (b) Differentiate between single screw and twin screw extruders. **07**

- Q.2** (a) What is grooved barrel technology? Discuss in detail. **07**
 (b) Discuss Devolatilisation in screw extruders **07**

OR

- (b) Define[any seven] : Screen pack; extrudate; drag flow; pressure flow ; helix angle; thrust bearing ; reduction gear box;sagging; screw root **07**

- Q.3** (a) What is B-10 Life of a thrust bearing? Estimate the B-10 life of a thrust bearing given that: **07**
 $P = 50 \text{ MPa}$ $N = 175 \text{ rpm}$ $K = 10/3$
 $B-10 \text{ std} = 1,00,000 \text{ hrs}$
 (b) With a neat line diagram , discuss the manufacture of PP monofilaments **07**

OR

- Q.3** (a) Discuss thrust bearing blocks of a single and twin screw extruders with diagrams **07**
 (b) With a neat line diagram, discuss the manufacture of TQPP films **07**

- Q.4** (a) What is a Pipe? Discuss manufacture of HDPE pipes with a neat line diagram. **07**
 (b) Discuss various types of drives for screw extruders **07**

OR

- Q.4** (a) Discuss raw material selection criteria for extrusion process in detail. **07**
 (b) Discuss in detail, the manufacture of Wires and cables. Give a neat line diagram. **07**

- Q.5** (a) What is L/D ratio? Discuss Significance of L/D ratio. **07**
 (b) What is Compression ratio? Discuss practical significance of compression ratio. **07**

- Q.5** (a) What is Sizing ? Why is it necessary ? Discuss various methods of sizing **07**
 (b) Fill in the blanks : **07**

1. Counter rotating twin screw extruder is used for _____
2. Ram extruder is used for _____ plastic materials.
3. Significance of helix angle is _____
4. Significance of flight depth is _____
5. IBC offers _____ advantages
6. Masterbatches are made by _____ extruder
7. Manufacture of Alloys and blends is done by _____ extruder
