

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

Subject code: 142301**Date: 27/12/2012****Subject Name: Basic Plastics Processing and Thermal Engineering****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)** Distinguish between Compression Moulding and Transfer Moulding Process **07**
- (b)** Explain the Causes and Remedies of transfer moulding process **07**
- Q.2 (a)** Explain the plunger type of Transfer Moulding Process and their advantages and disadvantages **07**
- (b)** Explain thermoplastics and thermosets material used in various processing techniques. **OR** **07**
- (b)** Explain the Parallel, Counter and Condenser heat flow exchanger with neat sketch **07**
- Q.3 (a)** Write the Principle of Thermoforming Process and explain any 2 types of thermoforming process **07**
- (b)** Explain about plastic memory and their selection criteria for thermoforming process **07**
- OR**
- Q.3 (a)** Explain the basic extrusion blow moulding process **07**
- (b)** Explain bulk factor and preforming and their advantages and disadvantages. **07**
- Q.4 (a)** Explain about injection stretch blow moulding process and their advantages and disadvantages. **07**
- (b)** Derive the Overall Heat transfer coefficient. **07**
- OR**
- Q.4 (a)** Explain the Parison programming with neat sketch? **07**
- Q.4 (b)** Define conduction mode of heat transfer and derive Fourier's law equation? **07**
- Q.5 (a)** Write the Principle of Compression Moulding process and factors affecting the technique. **07**
- (b)** The outer surface of 0.4 m thick concrete wall (15 m X 3m) is kept at a temperature of 20 °C. Thermal conductivity of the concrete is 1.2 W/Mk. Determine the thermal resistance of the wall and rate of heat loss through it. **07**
- OR**
- Q.5 (a)** Find the rate of heat transfer of a homogeneous plane wall, given the following; Temperature of outer and inner surface 100 °C and 30 °C respectively; thermal conductivity 1.75 W/mK and wall thickness 25 cm **07**
- (b)** Describe about the types of mould used for compression moulding process **07**
