

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Subject Code: 172601**Date: 25-11-2014****Subject Name: Rubber Equipment Design-II****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) Answer the following. (14)

- (i) Explain the term Convection & Conductivity related to Extruder .
- (ii) How the extruder output can be calculated?
- (iii) A press with a 400 tons force capability. What is the biggest largest square sheet that can be molded in the press while maintaining a pressure of 1000 Psi?
- (iv) What do you mean by Parting Line? Write its importance.
- (v) Write the function of Die.
- (vi) Which are two main considerations while designing a runner layout in Transfer Mold?
- (vii) What do you mean by Locking force & Projected area in terms of Injection Molding Machine?

Q.2 (a) Discuss the General Rules for Die Design. (07)

- (b) Which Points should be kept in mind while configuring the flow channel in Die? (07)**

OR

(b) Answer the following.

- (i) “An Extrusion die as essentially Stream lined channel which gives an appropriate shape to the rubber compound.” Justify the statement. (04)
- (ii) Write the difference between Cross Head Die & Off Set Die. (03)

OR

Q.3 (a) Discuss in detail about boundary layer effects in Extrusion Cooling. (04)

- (b) Explain in detail about Screw Design for Hot and Cold Feed Extruder. (07)
- (c) Define the term (i) Compression Ratio (ii) Starts (iii) Lead. (03)

OR

Q.3 (a) List the Elements of Extruder. Write any three in detail. (07)

- (b) Write in detail about High Intensity Mixing Screw. (07)**

Q.4 (a) What do you mean by crosslinking factors? Explain the other factors which affect the compression moulding. (07)

- (b) Explain the flow behaviour in Transfer Molding. (07)**

OR

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- Q.4 (a) Discuss in detail about Thermal Considerations for Compression Molding. (07)**
- (b) Explain the pressure consideration related to Transfer Molding. (07)**
- Q.5 (a) How the Parameters like Screw cooling, Pressure control & timing and Nozzle temperature & its design play a major part in the quality of a moulding or the performance of the Injection molding Machine? (07)**
- (b) Discuss in detail about different factors for determining the number of cavities for Injection Mould. (07)**

OR

- Q.5 (a) For Rubber Injection Molding machine give the comparison between FILO(first in last out) and FIFO (first in first out) types of injection units. (08)**
- (b) Explain in detail about the Runner design in Injection Moulding Machine. (06)**
