



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 187602

Roll No.

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B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15
PLASTICS PROCESSING-II

Time : 3 Hours]

[Total Marks : 100

Note : Attempt ALL questions.

- 1 Answer any TWO parts: 10×2
- a) Explain injection molding process. Describe molding of an article by reciprocating screw injection molding machine with the help of a neat diagram. Discuss the advantages of screw plasticization.
 - b) What is the function of clamping device in an injection molding machine ? Draw a neat diagram of hydraulic clamp and how it is different from a toggle clamp. What do you understand by a hydromechanical clamp and what are its advantages?
 - c) Discuss the utility of nozzle in injection molding machine and describe needle type shut off nozzle with the help of a diagram. Draw a neat diagram of a typical metering type injection screw and define various screw parameters.

- 2 Answer any TWO parts: 10×2
- a) Describe the Jet process for molding of thermoset plastics with the help of a diagram. Explain the process considerations for Direct Screw Transfer Molding Process for thermoset injection molding.
 - b) What are important process variables in injection molding process? Describe the following injection molding faults, their causes and suggestive remedies-voids, flash, poor weld lines, sink marks and short shots.
 - c) Describe the reaction injection molding process with the help of a diagram. What type of plastic materials are molded by RIM process? Discuss the advantages and disadvantages of RIM process.
- 3 Answer any TWO parts : 10×2
- a) What type plastic products are manufactured by thermoforming process? Give five examples. Describe basic steps involved in vacuum forming. Describe the importance of plug assist thermoforming process
 - b) What are various forming temperatures used for thermoforming process? Discuss various process variables affecting the product quality.
 - c) What guidelines are used for tool geometry when machining plastics? Describe drilling and reaming of thermoplastic materials.
- 4 Answer any TWO parts : 10×2
- a) Discuss the difference between Extrusion and Injection Blow Molding Process. Explain Intermittent Extrusion Blow Molding Process with the help of diagrams.
 - b) Describe the Stretch Blow Molding Process with the help of diagrams and explain its advantages. Discuss the temperature range used for making PET bottles by this process.

- c) Discuss various process variables which are important for blow molding process. Discuss the utility of die shaping and parison programming. Describe the method for formation of multilayered bottles and discuss their utility.
- 5 Answer any TWO parts : 10×2
- a) Describe various steps involved for formation of an article by rotational molding process with the help of a diagram and discuss its advantages. Describe various types of materials and machines used in rotational molding process.
- b) What are various types of techniques used for welding of thermoplastics? Describe in short any two of them giving their specific utility.
- c) What do you understand by Bulk Molding Compound and Sheet molding compound Describe the sheet molding compound process for fabrication of articles with the help of a diagram.
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