

17449

14115

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) All Questions are *compulsory*.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Use of Non-Programmable Electronic Pocket Calculator is permissible.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any TEN of the following :

20

- Define extrusion.
- State limitations of PVC foam.
- Enlist two application of PS foam.
- State usual thickness of plastic film. What is the difference between a film and a sheet.
- What is slip forming ?
- What is not elongation ?
- State the applications of thermoforming process.
- List various types of moulding defects.
- Write the types of injection moulding machines.
- Write working principle of toggle clamping.
- State names of parison cutting devices.
- Give two examples of blow moulded articles.

2. Attempt any FOUR of the following :

16

- Explain the general design considerations for extrusion dyes.
- Give any four examples of injection moulded articles.
- Explain briefly heating and cooling system for single screw extruder.
- Give the comparison between mechanical and hydraulic clamping system.
- Describe gas assisted injection moulding.
- Give four points of comparison between thermoforming and injection moulding.



P.T.O.

- 3. Attempt any FOUR of the following : 16**
- (a) Define a 'foam'. Name blowing agents that are used. What is a rigid foam ? Name it.
 - (b) Mention a trouble shooting problem in extrusion. State causes for the problem and remedial measures.
 - (c) Describe the terms :
 - (i) Injection unit
 - (ii) Shot capacity
 - (d) Give any two advantages and two disadvantages of thermoforming.
 - (e) Draw the process layout line diagram for sheet extrusion process.
 - (f) Name any two defects in blow moulded articles. State their causes and suggest remedies.
- 4. Attempt any FOUR of the following : 16**
- (a) Draw neat figure of single screw extruder. Label its different parts.
 - (b) Discuss following process variables in case of thermoforming.
 - (i) Air temperature
 - (ii) Mould temperature
 - (c) With neat sketch explain injection moulding.
 - (d) Write any four application of PVC foam.
 - (e) Explain any one method of foam manufacturing.
 - (f) Compare extrusion blow moulding with injection blow moulding.
- 5. Attempt any FOUR of the following : 16**
- (a) Explain briefly thermoset injection moulding.
 - (b) Enlist materials used for extrusion. Write any two advantages and two disadvantages of extrusion.
 - (c) Explain blown film extrusion process in detail.
 - (d) Write a brief note on coat-hanger dye. Write the material of dye.
 - (e) Explain the constructional features of hopper and barrel with respect to injection moulding machine.
 - (f) Differentiate between co-rotating and counter-rotating twin screw extruders.
- 6. Attempt any FOUR of the following : 16**
- (a) Give any two properties and two applications of polyurethane foam.
 - (b) Explain the plug assist forming method with a neat sketch.
 - (c) Give the constructional details of wire and cable coating dye.
 - (d) Give any four advantages of injection moulding process.
 - (e) Explain the construction of blown film dye.
 - (f) Define :
 - (i) Daylight opening
 - (ii) Cycle time in injection moulding process
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