



11819

17449

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are **compulsory**.*
 - (2) *Answer **each** next main question on a **new** page.*
 - (3) *Illustrate your answers with neat sketches **wherever** necessary.*
 - (4) *Figures to the **right** indicate **full** marks.*
 - (5) *Assume suitable data, if **necessary**.*
 - (6) *Mobile Phone, Pager and any other Electronic Communication devices are **not permissible** in Examination Hall.*

Marks

1. Answer any five :

(5×4=20)

- a) Compare thermoforming with injection moulding.
- b) Describe parison thickness control method.
- c) Describe co-extrusion method.
- d) Compare : mechanical clamping and hydraulic clamping.
- e) Compare : side fed-and bottom fed-blown film die.
- f) Write general design consideration for corrugated pipe.
- g) Represent process layout for sheet extrusion process.

2. Answer any four :

(4×4=16)

- a) Explain plug assist forming with a diagram.
- b) Identify any two defects in injection moulded article and suggest causes and remedies to overcome such defects.
- c) Explain the role of screen packs and breaker plate assembly used in an extruder.
- d) Describe vacuum forming method.
- e) Explain briefly thermoset injection moulding process.
- f) Explain the construction of extruder barrel with a diagram.

3. Answer any four :

(4×4=16)

- a) i) Define Foam. Name blowing agents that are used.
ii) What is a rigid foam ? Give two examples.
- b) State any two defects observed in extruded product, write their causes and remedies to overcome them.

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- c) State meaning of the terms :
- i) Injection unit
 - ii) Daylight opening
 - iii) Injection pressure
 - iv) Mould clamping-force with respect to injection moulding
- d) State advantages and disadvantages of thermoforming.
- e) Identify two major process parameters involved in the blow moulding process and explain their influence on the quality of the moulded product.
- f) Explain the process to manufacture PVC foam. State any four applications of foam.
- 4. Answer any four :** **(4×4=16)**
- a) Explain dual sheet forming method.
 - b) With a labelled diagram, explain gas assisted injection moulding.
 - c) Describe the working of wire and cable coating die.
 - d) Compare corotating and counterrotating twin screw extruders.
 - e) Write any four applications of PV foam.
 - f) Explain the basic process of injection moulding.
- 5. Answer any four :** **(4×4=16)**
- a) Compare extrusion blow moulding with injection blow moulding.
 - b) Describe the blown film extrusion process with a labelled diagram.
 - c) List out the methods of foam manufacturing. Explain any one of them.
 - d) Write any four advantages and disadvantages of injection moulding process.
 - e) Explain the criteria for the selection of injection moulding machine.
 - f) Describe cooling unit for sheet extrusion.
- 6. Answer any four :** **(4×4=16)**
- a) Describe the construction and working of pelletising unit with a diagram.
 - b) Draw labelled sketches of the following :
 - i) Injection screw
 - ii) Standard injection nozzle
 - c) Describe stretch blow moulding process.
 - d) Explain injection moulding cycle.
 - e) Differentiate between twin screw extruder and single screw extruder.
 - f) Name blowing agents used in foam manufacturing. How do they function ?
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