



# 17449

21718

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) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
  - (7) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

**Marks**

1. Attempt **any ten** of the following :

**20**

- a) State principle of extrusion process.
- b) State two examples of chemical blowing agents.
- c) Enlist two application of PS foam.
- d) State the difference between a film and a sheet.
- e) State applications of slip forming.
- f) Define not elongation.
- g) State the limitations of thermoforming process.
- h) List any two disadvantages of injection molding process.
- i) Write classification of injection molding machines.
- j) Draw a neat labelled sketch of toggle locking unit.
- k) Enlist any two parison cutting devices.
  - l) Give four examples of blow molded articles.
- m) Define daylight opening in injection moulding machine.
- n) Enlist any four products made by injection moulding.

2. Attempt **any four** of the following :

**16**

- a) Differentiate between side fed and bottom fed blown film die.
- b) Draw a neat sketch of screw and define its terminology.
- c) Explain heating and cooling system for single screw extruder.
- d) Write comparison between mechanical and hydraulic clamping system.
- e) Describe gas assisted injection molding process.
- f) Write four points of comparison between thermoforming and injection molding.

**P.T.O.**



- 3. Attempt any four of the following :** **16**
- a) Explain moulded bead PS foam process.
  - b) Write trouble shooting guide for any four defects in blown film extrusion.
  - c) Explain the reason for manufacturing flexible as well as rigid foam from polyurethane.
  - d) State any eight advantages thermoforming.
  - e) Explain the process layout line diagram for sheet extrusion process.
  - f) Write trouble shooting guide for any four defects in blow moulding.
- 4. Attempt any four of the following :** **16**
- a) What do you mean by co-extrusion ? List any two product manufactured by coextrusion and materials used for it.
  - b) Explain the injection molding cycle.
  - c) Explain blow molding method with neat sketch used to manufacture PET bottles.
  - d) Differentiate between twin screw and single screw extruder.
  - e) Explain drape forming process with neat sketch.
  - f) Explain properties and applications of PVC foam.
- 5. Attempt any four of the following :** **16**
- a) Draw neat sketch of T-type sheet die and label it.
  - b) Write constructional details of pelletising unit with diagram.
  - c) Draw a neat labelled sketch of hydraulic locking injection molding machine.
  - d) State and define important capacities of injection moulding machines.
  - e) Write advantages and disadvantages of blow molding process.
  - f) Explain vacuum forming process with neat sketch.
- 6. Attempt any four of the following :** **16**
- a) Write function of important parts of extrusion die.
  - b) Draw neat and labelled sketch of wire and cable coating die.
  - c) Describe the constructional features of breaker plate and screen pack with neat diagrams.
  - d) Describe reaction injection moulding with neat sketch.
  - e) Describe the constructional features of barrel and nozzle used in injection molding machine.
  - f) State the modifications to be made while processing thermoset material by conventional injection molding machine.
  - g) Write the properties and application of PV foam.
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