

# 17449

16117

**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. Answer any TEN of the following:**

**20**

- State functions of pelletising unit.
- Define mould damping force. Write its unit.
- State principle of stretch blow molding process.
- Name the types of winder and puller used in extrusion.
- What is day light opening? State its importance.
- Enlist tools for trimming used in thermo forming.
- Write applications of gas assisted injection molding.
- Enlist types of screws used in twin screw extruder.
- Write any four chemical flowing agents.
- State the function of breaker plate and screen pack assembly.
- Enlist types of injection molding machines.

P.T.O.

- l) Define co-extrusion. Give examples.
- m) Write two advantages and disadvantages of injection molding machine.
- n) Name various polymers used for thermo forming.

**2. Answer any FOUR of the following: 16**

- a) Explain drive system for single screw extruder.
- b) Explain selection criteria for injection molding machines.
- c) Explain intermittent extrusion blow molding process.
- d) Explain following process variables in thermoforming:
  - (i) air temperature
  - (ii) mould temperature
- e) Explain the method of preparation of PU foam by slab stock process.
- f) Draw a line diagram for manufacturing of a pipe. Explain the function of each unit.

**3. Answer any FOUR of the following: 16**

- a) Draw a labelled diagram of a single screw extruder. Write its various zones.
- b) Explain constructional features of screw and nozzle in case of injection molding machine.
- c) Describe take off unit for extrusion process.
- d) What are the different methods of foam manufacturing? Explain the basic process of foam manufacturing.
- e) Explain driving mechanism of a twin screw extruder.
- f) Explain gas assisted injection moulding.

**4. Answer any FOUR of the following:****16**

- a) Explain the sheet extrusion process with a diagram.
- b) Describe shot capacity and practising capacity in case of injection molding machine.
- c) Explain the following in blow molding process:
  - (i) Parision thickness device
  - (ii) Parision control method
- d) Explain plug and ring forming.
- e) Compare twin screw and single screw extruder.
- f) Explain injection moulding of thermosets.

**5. Answer any FOUR of the following:****16**

- a) Explain with a diagram the film extrusion process.
- b) Compare plunger type and screw type injection moulding machine.
- c) Write any two defects that occur in blow molding product. State their causes and remedies.
- d) Explain the method of preparation of extruded PS foam. Give its two properties and applications.
- e) Explain constructional details of a fish tail die.
- f) (i) Explain the term thermoset.  
(ii) Write types of resins, suitable for injection moulding.

**6. Answer any FOUR of the following:****16**

- a) Describe drap forming.
  - b) Explain any one type of defect observable in injection moulded articles. State its cause and remedies.
  - c) Enlist advantages and disadvantages of thermo forming.
  - d) Explain the method of preparation of PVC foam using chemical blowing agents. State two properties and applications.
  - e) Describe constructional details of a T-die.
  - f) (i) Explain the term: loading unit in relation to injection moulding machine.  
(ii) Write constructional features of a 'copper', in injection moulding machine.
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