

22388

24225

3 Hours / 70 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 answer 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. Attempt any FIVE of the following: 10
- a) Write any two applications of injection moulding.
 - b) Define Daylight opening in injection moulding.
 - c) Define plasticizing capacity.
 - d) State any four advantages of post curing.
 - e) Mention any two advantages and limitations of compression moulding.
 - f) Define preheating.
 - g) State principle of thermoforming process.

P.T.O.

- 2. Attempt any FOUR of the following:** **12**
- a) Explain basic principle of injection moulding process.
 - b) Explain with neat sketch hand operated injection moulding machine.
 - c) Explain with neat sketch sheet moulding compound.
 - d) Enlist various pre-heaters used in injection moulding. Also state importance of preheating.
 - e) Compare compression and transfer moulding process.
- 3. Attempt any THREE of the following:** **12**
- a) Describe injection unit along with short capacity and injection pressure.
 - b) Explain the concept of outgassing in detail.
 - c) Write any four advantages and disadvantages of transfer moulding.
 - d) State various moulding materials used in compression moulding. Also mention processing parameters of any three materials.
- 4. Attempt any THREE of the following:** **12**
- a) Describe with neat sketch the construction and working of Pot type transfer moulding.
 - b) Explain with neat sketch the constructional features of multilayer rotational moulding.
 - c) Explain with neat sketch oil heating and cooling system.
 - d) Describe following process variables in thermoforming –
 - i) Polymer memory
 - ii) Hot elongation / strength.
 - e) Identify any four defects occurs in thermoforming process with their causes and remedies.

5. Attempt any THREE of the following: 12

- a) Identify any four defects in injection moulded component with their causes and remedies.
- b) Explain with neat sketch toggle type clamping system used in injection moulding.
- c) Explain the constructional features of infrared and high frequency pre-heaters used in compression moulding.
- d) Identify any four defects occurs in compression moulded component. Also state their causes and remedies.
- e) Explain concept of breathing in compression and transfer moulding process.

6. Attempt any TWO of the following: 12

- a) Describe with neat sketch the constructional features and working of screw type injection moulding machine. Also mention its any four applications.
 - b) Describe with neat sketch following heating system used in rotational moulding –
 - i) Oven heating system
 - ii) Open flame heating system.
 - c) Describe with neat sketch the constructional feature of following thermoforming machine –
 - i) Vacuum forming
 - ii) Plug assist forming.
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