

22353

**21819**

**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 answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE :**

**10**

- (a) State the basic principle of extrusion.
- (b) State the function of
  - (i) barrel
  - (ii) screw
- (c) Enlist four different materials used in Blow moulding.
- (d) Define :
  - (i) Blow ratio
  - (ii) Hoop ratio
- (e) Suggest suitable methods for joining following parts :
  - (i) Plastic to plastic (HDPE container to handle)
  - (ii) PVC pipe to PVC pipe coupling
- (f) State the need of surface treatment process before printing.
- (g) Enlist various types of foam.

**2. Attempt any THREE :****12**

- (a) Explain four different parts of extruder with their function of each.
- (b) Describe working of extruder Palletizer with neat sketch.
- (c) Select the process & material to manufacture 1 litre water bottle with labelled sketch & justification.
- (d) Describe the process of vacuum metalizing with neat sketch.

**3. Attempt any THREE:****12**

- (a) Describe pipe extrusion plant layout with neat sketch.
- (b) Explain any one dispersive mixing sections in single screw extruder.
- (c) Describe Hot plate welding method with neat sketch.
- (d) State four different properties & application of polystyrene foam.

**4. Attempt any THREE:****12**

- (a) Select the suitable method to control the wall thickness of parison.
- (b) Explain any three process variable and their effects on quality of blow moulded article.
- (c) Explain ultrasonic welding in detail and state its any four applications.
- (d) Select suitable process for sealing milk pouches with neat sketch.
- (e) Suggest suitable material & product decorated by flocking & explain it.

**5. Attempt any TWO :****12**

- (a) Suggest a method for the production of 1 kg carry bag with 0.02 mm thickness. Also, suggest plastic material for production of same application.
- (b) Describe spin welding with its significance & neat labelled sketch.
- (c) Suggest various product decorating by
  - (i) laser marking
  - (ii) dyeing
  - (iii) electroplating
  - (iv) printing
  - (v) dip coating
  - (vi) In mould decoration

**6. Attempt any TWO:****12**

- (a) State the function of six auxillary equipments in sheet extrusion process.
  - (b) Enlist six defects which occurs in blow moulding. Suggest causes & remedies for the same.
  - (c) Select the material and process for manufacturing sleeping mattress with justification.
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