

# 22454

**22223**

**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.
  - (6) Abbreviations used has their usual meaning.

**Marks**

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

**10**

- a) State any four advantages of plastic packaging.
- b) Enlist any four advantages of flexible packaging.
- c) State any four properties of moulded PS foam.
- d) Enlist four products which in packaged in Pu foam.
- e) Draw neat sketch of drape forming.
- f) Suggest four solvents used for solvent sealing.
- g) Enlist the text method for rigid and flexible packaging.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Suggest special requirements for food and medical packaging (minimum four for each)
  - b) Explain extrusion coating method with neat sketch.
  - c) Explain with neat sketch the plug-assist thermoforming process
  - d) Explain with neat sketch the vacuum metalization process.
- 3. Attempt any THREE of the following: 12**
- a) Describe stress crack resistance test for packaging.
  - b) State the selection criteria for packaging materials.
  - c) State four flexible packaging foods with reason behind its flexible packaging.
  - d) Explain with neat sketch the matched mould thermoforming process.
- 4. Attempt any THREE of the following: 12**
- a) Explain with neat sketch the hot melt sealing process.
  - b) State any four hazards of packaging with their control measures.
  - c) Describe with neat sketch the blown film extrusion process.
  - d) Explain with neat sketch the dual sheet thermoforming process.
  - e) Explain blister packaging with neat sketch.
- 5. Attempt any TWO of the following: 12**
- a) State any two properties and two applications of following packaging plastics.
    - i) PVDC
    - ii) EVOH
    - iii) PC
  - b) Explain with neat sketch the multi layer film extrusion process.
  - c) Explain with neat sketch the sketch wrapping process.

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**Marks**

**6. Attempt any TWO of the following:**

**12**

- a) Explain with neat sketch the stack load test for packaging.
  - b) Explain vacuum snap-back thermoforming with neat sketch.
  - c) Explain flexographic printing with neat sketch.
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