

# 17402

**14115**

**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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. a) Attempt any **SIX** of the following: 12
- (i) Define extrusion. State its types.
  - (ii) Define forging. State its types.
  - (iii) Define casting and pattern.
  - (iv) What is core print?
  - (v) State different types of dies.
  - (vi) What is notching operation in case of press operation?
  - (vii) Classify various types of patterns.
  - (viii) State different types of moulding sands.

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- b) **Attempt any TWO of the following:** **8**
- (i) Explain the shielded metal arc welding with neat sketch.
  - (ii) Describe counter boring and counter sinking operation with neat sketch.
  - (iii) What is thermosetting plastics?
2. **Attempt any FOUR of the following:** **16**
- a) State the different types of press operations. Explain blanking operation with neat sketch.
  - b) Explain progressive die with neat sketch.
  - c) Explain any four properties of moulding sand.
  - d) What is core? State different types of core.
  - e) Explain piercing and lancing operation with sketch.
  - f) Explain centrifugal casting with neat sketch.
3. **Attempt any FOUR of the following:** **16**
- a) Describe backward extrusion process with neat sketch.
  - b) Explain shell moulding process.
  - c) Draw the nomenclature of single point cutting tool showing various elements on it.
  - d) Explain four high rolling mill with neat sketch.
  - e) Explain TIG welding with neat sketch.
  - f) Draw a neat sketch of twist drill showing its nomenclature on it.

- 4. Attempt any FOUR of the following:** **16**
- a) Explain closed die forging with neat sketch.
  - b) Explain the principle of rolling with neat sketch.
  - c) Explain soldering process and state its two applications.
  - d) How lathe machines are classified?
  - e) Define cutting parameters in lathe machine and state its significance.
  - f) State the manufacturing methods for
    - (i) Plastic jug
    - (ii) PVC sheet
    - (iii) Plastic bottle
    - (iv) Refrigerator door liners.
- 5. Attempt any FOUR of the following:** **16**
- a) Compare hot rolling with cold rolling process.  
(At least four points each.)
  - b) What is direct extrusion process? Describe with neat sketch.
  - c) Explain bending operation in case of press operation with neat sketch.
  - d) State the types of dies. Explain compound die with neat sketch.
  - e) Classify the moulding methods. Explain pit moulding process in brief.
  - f) State the causes and remedies of following casting defects
    - (i) Blow holes
    - (ii) Misrun

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**Marks**

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

**16**

- a) State the principle of resistance welding and state its types. Explain seam welding with neat sketch.
  - b) Explain blow moulding with neat sketch. State its four applications.
  - c) Define taper. State the methods of taper turning on lathe. How taper angle is calculated for taper turning on lathe?
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