

# 17402

**21314**

**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. a) Attempt any **SIX** of the following: **12**
- i) What is upset forging?
- ii) Draw neat sketch of two high rolling mill.
- iii) What is functions of flywheel in mechanical press?
- iv) Write any four press working operations.
- v) What is master pattern?

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- vi) Classify melting furnace in casting process.
- vii) Write any four properties of moulding sand.
- viii) Draw neat sketch of “Jolt machine”.

b) **Attempt any TWO of the following:**

**8**

- i) Classify various types of welding flames in gas welding with neat sketch.
- ii) Describe taper turning operation of lathe machine by using forming tool.
- iii) State different properties of plastics.

2. **Attempt any FOUR of the following:**

**16**

- a) Draw neat sketch of shearing operation and describe it in brief.
- b) Describe drawing operation in press working.
- c) Explain any two types of cores with neat sketch.
- d) Explain various elements of gating system in casting process.
- e) State the different types of dies.
- f) Differentiate between hot chamber and cold chamber die casting (any four points).

- 3. Attempt any FOUR of the following:** **16**
- a) Describe “Backward Extrusion Process” with neat sketch.
  - b) Describe three high rolling mill with sketch.
  - c) Draw neat sketch of standard twist drill with nomenclature.
  - d) Explain with neat sketch investment casting process.
  - e) With neat sketch, describe in brief “Spot Welding”.
  - f) Differentiate between orthogonal and oblique cutting (any four points).
- 4. Attempt any FOUR of the following:** **16**
- a) Compare hot and cold rolling (any four points).
  - b) Draw neat sketch of direct extrusion and explain its working.
  - c) Differentiate between brazing and soldering (any four points).
  - d) With neat sketch, describe elements of single point cutting tool.
  - e) Draw neat sketch of sensitive drilling machine and label its parts.
  - f) What is calendering operation in plastic processing? Write two applications.
- 5. Attempt any FOUR of the following:** **16**
- a) Compare press forging and drop forging (any four points).
  - b) Explain principle of rolling with neat sketch.
  - c) Compare notching and lancing operation (any four points).

17402

[ 4 ]

**Marks**

- d) Draw neat sketch of combination die and explain its working.
- e) Draw neat sketch of cupola furnace and label its various zones.
- f) Explain any four casting defects with their causes of formation.

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

**16**

- a) Describe with neat sketch “Electron Beam Welding”. State two applications.
  - b) What is blow moulding? Draw neat sketch. Write any four applications.
  - c) Explain any four drilling operations with sketches.
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17402

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