

# 312313

**12526**

**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) 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. Attempt any FIVE of the following: **10****
- a) Define feed and depth of cut in lathe.
- b) List any four accessories of a drilling machine.
- c) List any four types of milling cutters.
- d) List types of cores.
- e) Define forging and state any two types.
- f) Give two advantages of MIG welding.
- g) Enlist any four filler materials used in brazing.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Suggest safety precautions to be taken while performing welding.
  - b) Explain any four operations of a milling machine with sketches.
  - c) Describe pattern allowances with suitable examples.
  - d) Explain principle of forging and its advantages over machining.
- 3. Attempt any THREE of the following: 12**
- a) Draw neat sketch of column and knee type milling machine.
  - b) State advantages of casting process.
  - c) A steel shaft of 25 mm diameter is turned at a cutting speed of 50 m per min. Find rpm of shaft.
  - d) Describe classification of welding processes with suitable examples.
- 4. Attempt any THREE of the following: 12**
- a) Explain working principle of radial drilling machine with neat sketch.
  - b) Compare soldering and brazing on : temperature, filler, strength and application.
  - c) Describe steps involved in making a pattern.
  - d) Note on indexing methods used in milling.
  - e) Explain the rolling process with neat sketch and applications.
- 5. Attempt any TWO of the following: 12**
- a) Draw and explain types of chips formed in machining with neat sketch.
  - b) Describe hot tears, blowholes and shrinkage cavity casting defects with sketches.
  - c) Explain TIG welding process with sketch and list its advantages.

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**Marks**

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

**12**

- a) Differentiate between up-milling and down-milling with neat sketch.
  - b) Describe following press operations with sketches :-
    - i) Blanking
    - ii) Punching
    - iii) Lancing.
  - c) Draw neat sketch of lathe machine and explain any four operations.
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