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23242

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) 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 :

10

- (a) Define back rake angle and lip angle for single point tool.
- (b) Draw neat sketch showing different types of chips.
- (c) Define cutting speed and feed with respect to milling machine.
- (d) Give classification of milling machines.
- (e) Define forming process.
- (f) State advantages of MIG welding.
- (g) Give different filler materials used in brazing.

2. Attempt any THREE :

12

- (a) List different taper turning methods.
- (b) Explain principle of rolling with neat sketch.
- (c) Name different milling cutters.
- (d) Differentiate between open die forging and closed die forging.



- 3. Attempt any THREE :** **12**
- (a) Explain different pattern allowances.
 - (b) State and explain any four properties of moulding sand.
 - (c) Find out machining time to drill 50 mm deep hole in mild steel plate. Drill diameter is 20 mm, cutting speed 30 m/min and feed is 0.10 mm/rev.
 - (d) Explain process of machining 25 mm long keyway having 5 mm width and 3 mm depth on a shaft of 60 mm diameter on milling machine.
- 4. Attempt any THREE :** **12**
- (a) Explain centrifugal casting process with neat sketch.
 - (b) Give causes and remedies for different casting defects (any four).
 - (c) Explain sheet metal shearing process on press.
 - (d) Explain the process used for making leak proof copper tube joints in refrigerator.
 - (e) State advantages and disadvantages of soldering process.
- 5. Attempt any TWO :** **12**
- (a) Find out the time required for one complete cut on a work piece of 60 mm diameter and 400 mm length. The cutting speed is 50 m/min and feed 0.5 mm/rev.
 - (b) Explain any three milling machine operations with neat sketch.
 - (c) State different safety precautions in electric arc welding.
- 6. Attempt any TWO :** **12**
- (a) Draw a neat labelled sketch of radial drilling machine and give functions of different parts.
 - (b) State different methods of indexing and explain process of indexing 30 equal divisions using simple indexing method.
 - (c) Draw a neat sketch of TIG welding process, explain working and state its advantages.
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