

17556

11819

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. Attempt any FIVE of the following :

20

- (a) Enlist any four merits and demerits of LBM.
- (b) Draw a neat sketch of W-EDM.
- (c) Explain boring machine with neat sketch.
- (d) Explain axis identification system in CNC machine.
- (e) Differentiate between up milling and down milling.
- (f) Draw a neat sketch of angular and T-slot milling cutters.
- (g) State the importance of maintenance in a manufacturing industry.

2. Attempt any FOUR of the following :

16

- (a) Explain WJM process with neat sketch.
- (b) What are the process parameters used in EDM ?

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P.T.O.

- (c) Explain the importance of non-traditional machining processes.
- (d) State the meaning of following G-codes :
 - (i) G71
 - (ii) G90
 - (iii) G91
 - (iv) G03
- (e) What are the safety procedures used in operating a CNC machine ?
- (f) List any four parts which are machined on broaching machine.

3. Attempt any TWO of the following :

16

- (a) Differentiate between :
 - (i) AJM and WJM
 - (ii) EDM and W-EDM
- (b) Prepare a part programme to machine the workpiece as shown in Fig. No. 1 on CNC milling machine.

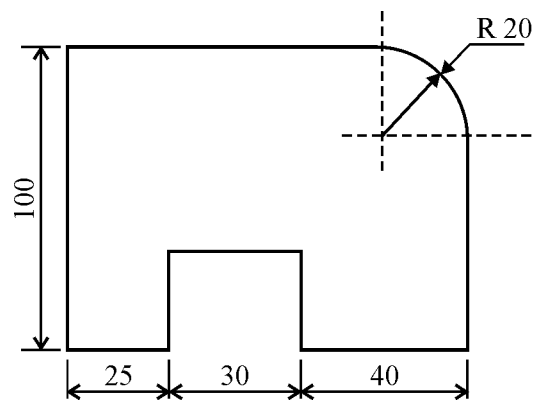


Fig. No. 1

- (c) Explain any two parts of horizontal broaching machine. Enlist any four merits and demerits of broaching machine.

4. Attempt any FOUR of the following :**16**

- (a) State the meaning of following M-Codes :
- (i) M04
 - (ii) M18
 - (iii) M08
 - (iv) M39
- (b) Explain straddle milling with neat sketch.
- (c) Draw a neat sketch of column and knee type of milling machine.
- (d) Specify the following types of grinding wheel :
- W A 4 6 K 5 V B E
- (e) Explain balancing of grinding wheel with neat sketch.

5. Attempt any TWO of the following :**16**

- (a) Draw a neat sketch of planner machine and explain following parts of it :
- (i) Bed
 - (ii) Table
 - (iii) Cross-rail
 - (iv) Tool head
- (b) Explain following gear finishing methods with neat sketch :
- (i) Grinding
 - (ii) Shaving
- (c) Enlist the milling operations. Explain gang milling operation with neat sketch.

P.T.O.

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

4 × 4 = 16

- (a) Explain honing process with neat sketch.
 - (b) Differentiate between lapping and polishing.
 - (c) What are the selection criterias for choosing a grinding wheel ?
 - (d) Explain the importance and necessity of maintenance records.
 - (e) Explain the maintenance procedure for machine belt.
 - (f) Write probable causes and remedies for failures of following parts of a lathe machine :
 - (i) Main spindle
 - (ii) Head stock
 - (iii) Feed box
 - (iv) Saddle
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