

17556

11920

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

5 × 4 = 20

- (a) State the importance of non-traditional machining processes, in today's manufacturing scenario.
- (b) Give the meaning of following codes :
 - (i) G40
 - (ii) G21
 - (iii) M08
 - (iv) M98
- (c) How a push broach differs from a pull broach ?
- (d) Explain Straddle and Gang milling with neat sketch.
- (e) Describe basic parts of column and knee type milling machine with neat sketch of it.
- (f) Draw neat sketches of various wheel shapes used in grinding wheel.
- (g) Draw a blank format of maintenance record used for preventive maintenance.

2. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Explain the working principle of W-EDM, also states it's applications.
- (b) Differentiate between open loop and closed loop control system in CNC (four points each)
- (c) Sketch any two boring heads.
- (d) How 89 divisions are indexed by differential indexing method ?
- (e) Explain with neat sketch working for centreless internal grinding process.
- (f) What is repair cycle analysis ? Explain with suitable example.

3. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Suggest suitable non-traditional machine process for following operations, also give reasons :
 - (i) To prepare surgical needle
 - (ii) To machine semi-conductor
 - (iii) To produce decorative surface on doors & panels
 - (iv) To cut complex contour on stainless steel.
- (b) What are the functions of adaptive control ?
- (c) Explain with neat sketch construction of planomiller.
- (d) What is gear hobbing ? State its advantages.
- (e) State the merits and demerits of honing process.
- (f) Write the maintenance procedure of gears and machine belts.

4. Attempt any FOUR of the following :

4 × 4 = 16

- Explain with neat sketch working principle of AJM.
- Differentiate between subroutine and canned cycle.
- Draw a labelled neat sketch of horizontal Broaching machine and also state it's applications.
- Explain with neat sketch any two 'Tool holding devices' used in turret lathe.
- State various gear finishing methods and explain any one method.
- Describe the importance of Truing and Dressing of a grinding wheel.

5. Attempt any TWO of the following :

2 × 8 = 16

- Explain with neat sketch working of Plasma Arc machining, also states its advantages, disadvantages and applications.
- Prepare a part program to machine the work-piece shown in Fig No. 1. Assume suitable data.

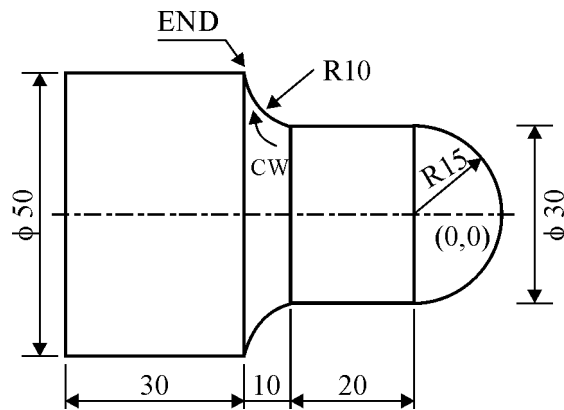


Fig No. 1

- What is indexing ? Explain the various steps of compound indexing with suitable example.

P.T.O.

6. Attempt any FOUR of the following :

4 × 4 = 16

- (a) Explain working principle of LBM with neat sketch.
 - (b) State two specific applications of
 - (i) WJM
 - (ii) EDM and give reasons for it.
 - (c) Define 'Automats' and give the classification of automatic machines.
 - (d) Give the classification of milling cutters.
 - (e) Differentiate between lapping and polishing.
 - (f) What is predictive maintenance ? What are the stages in it ?
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