

22448

23124

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 of the following :** **10**
- a) Give classification of Non-conventional machining processes.
- b) Draw a neat sketch of CNC - machine tool axes.
- c) State advantages of ECM process.
- d) State the surface values obtained in Lapping and Burnishing process.
- e) State the meaning of G71 and G95.
- f) State need and importance of special purpose machines.
- g) State the functions of surface finishing processes.

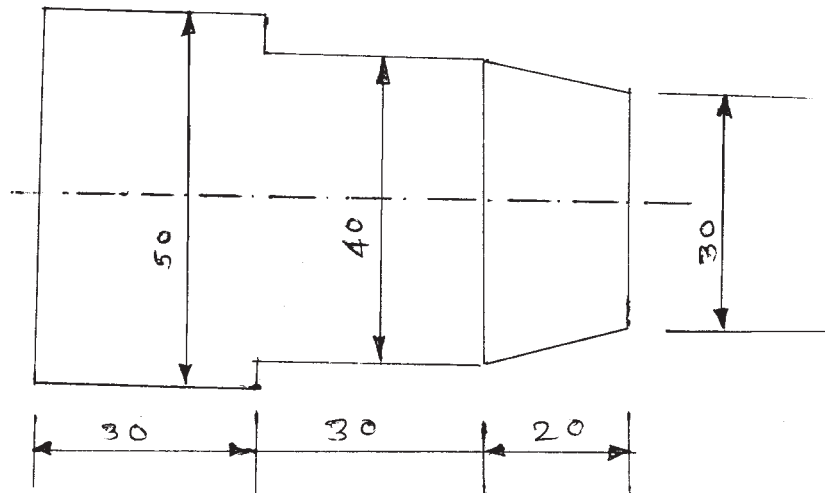
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- 2. Attempt any THREE of the following :** **12**
- a) State advantages and applications of Abrasive Jet Machining (Four each)
 - b) Differentiate between absolute co-ordinate system and incremental co-ordinate system.
 - c) Describe magnetic workholding device in CNC machines.
 - d) Describe disc type automatic tool changer with neat sketch.
- 3. Attempt any THREE of the following :** **12**
- a) State the desirable properties of the dielectric fluid used in EDM. Name the common fluids used in EDM.
 - b) State the applications of WEDM and LBM (Four each)
 - c) Describe functions of ball screw and servo drive in CNC.
 - d) Compare open loop and closed loop control system in CNC.
- 4. Attempt any THREE of the following :** **12**
- a) Describe continuous contouring system with neat sketch and application.
 - b) Differentiate between ECM and LBM with applications.
 - c) Explain canned cycle and subroutine in CNC machines.
 - d) Differentiate between buffing and super finishing processes.

5. Attempt any TWO of the following :

12

- a) Write a part program for a job shown in Figure No. 1 for finishing cut with spindle speed 1500 rpm and 150 mm/rev feed rate.



All dimensions are in mm

Fig. No. 1

- b) Describe with neat sketch chain type tool magazine. State its advantages.
- c) Describe turret head indexing mechanism to produce hexagonal bolt.

6. Attempt any TWO of the following :

12

- a) Explain with neat sketch linear interpolation and circular interpolation. Also state their programming codes.
- b) State applications of lapping, honing and super finishing processes (two each) with roughness values obtained.
- c) Differentiate between capston lathe, turret lathe (six points)