

# 17556

**14115**

**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) 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) Define Non-Traditional machining process. Explain its need and importance in industry.
  - b) State the characteristics and functions of dielectric fluid used in EDM.
  - c) State the significance of following code in part programming:
    - (i) G01
    - (ii) G04
    - (iii) M06
    - (iv) M03

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- d) Give the comparison between pull and push broach.
- e) Give the classification of milling machine.
- f) Define indexing? Enlist the methods of Indexing.
- g) State any two advantages and disadvantages of centreless grinding.

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

- a) Define preventive maintenance? State its advantages?
- b) Compare between truing and dressing of grinding wheel.
- c) Explain the principle of gear hobbing.
- d) Describe compound indexing method.
- e) Explain the working of AJM with a neat sketch.
- f) State the advantages and limitations of broaching process.  
(At least four points each)

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

- a) Explain axis identification in milling with neat sketch.
- b) Explain the working principle of LBM with neat sketch.
- c) Differentiate between Capstan and Turret Lathe. (atleast four points each)
- d) Compare between up milling and down milling.
- e) Explain gear grinding with neat sketch.
- f) With a neat sketch describe working principle of honing process.  
State its two applications.

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

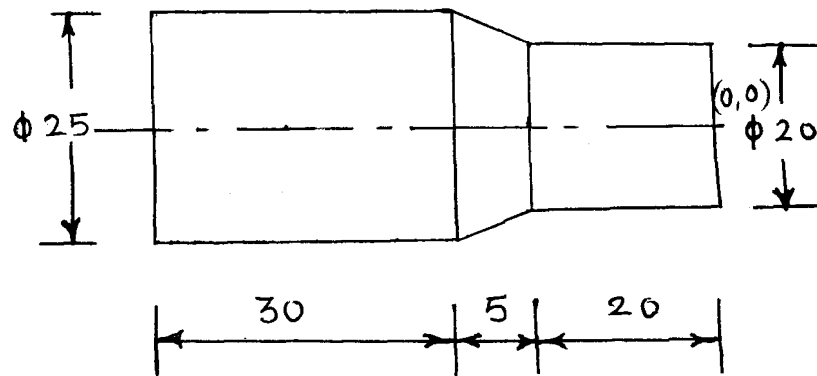
16

- What is repair cycle analysis? Explain with suitable example.
- Differentiate between break down and preventive maintenance.
- Explain the process parameters of WJM.
- Draw the sketch of the boring head. State the condition under which it is used.
- Explain the factors considered for selection of grinding wheel.
- Explain straddle milling with neat sketch.

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

16

- Describe the set up of WEDM with neat sketch and give its applications and limitations.
- Prepare a program to machine the work piece as shown in the Figure No. 1 on CNC lathe.

**Fig. No. 1**

- Describe the construction and working of column and knee type milling machine with neat sketch.

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

- a) State the purpose of providing dry run facility and Jog mode for CNC machine.
  - b) Compare between open loop and closed loop control system.
  - c) Give the classification of broaching machine.
  - d) Describe the principle features of horizontal broaching.
  - e) Explain the working of burnishing process.
  - f) State the general maintenance problems faced and their remedies related with:
    - (i) Coupling
    - (ii) Machine belts
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