



17556

21415

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) Mobile Phone, Pager and any other Electronic Communication devices are **not permissible** in Examination Hall.
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MARKS

1. Solve **any ten** :

(10×2=20)

- Define non-traditional machining process.
- Name two dielectric fluids used in EDM.
- Write four applications of PAM.
- Write four advantages of CNC machines.
- What is incremental co-ordinate system ?
- Write any four M-codes in CNC machines.
- State two advantages of using Dry Run in CNC.
- What is broaching process ?
- Draw a sketch of broach.
- Write two limitations of broaching process.
- Write four types of planer machines.
- Write four types of boring tools.
- What is corrective maintenance ?
- State two purposes of honing.
- List down the basic parts of column and knee type milling machine.

2. Solve **any four** :

(4×4=16)

- Write types of bonds used in grinding wheel.
- Explain thread grinder with sketch.
- List breakdown causes in machine tools.
- Sketch any four vertical boring machine operations.
- Explain grinding wheel dressing.
- Write process parameters of AJM.

P.T.O.

**MARKS**

3. Solve **any two** : **(2×8=16)**
- a) Explain working of WJM with sketch.
 - b) Explain with sketch cutter radius compensation used in CNC and state G-codes for same.
 - c) What is pinion cutter gear shaping ? State advantages and disadvantages.
4. Solve **any four** : **(4×4=16)**
- a) Explain four characteristics of EDM process.
 - b) What safety precautions to be taken in CNC ?
 - c) Differentiate between Capstan and Turret lathe.
 - d) Differentiate between upmilling and downmilling.
 - e) Write types of dividing head and explain one.
 - f) Explain straddle milling and gang milling with neat sketch.
5. Solve **any two** : **(2×8=16)**
- a) Differentiate between EDM and PAM.
 - b) Explain angular indexing. Index an angle of $21^{\circ} 50'$ with angular indexing.
 - c) What is scheduled maintenance ? State advantages of it.
6. Solve **any four** : **(4×4=16)**
- a) Explain total productive maintenance.
 - b) Write meaning of following G-codes :
 - i) G-43, ii) G-75, iii) G-81, iv) G-10.
 - c) What is balancing of grinding wheel ?
 - d) Differentiate between planer and shaping machine.
 - e) Explain internal centreless grinding with sketch.
 - f) Write maintenance procedure for linked chains.
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