

# 17403

**21718**

**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. a) Attempt any SIX of the following:** **12**
- i) Enlist any four forging components.
- ii) Enlist any four pressing operations.
- iii) Define soldering process and enlist any two applications.
- iv) Give classification of welding process.
- v) List any four factors affecting selection of surface finishing processes.
- vi) Give the meaning of following ISO codes:
- 1) M02
- 2) M30
- 3) G90
- 4) G91
- vii) Define NC and CNC machine.
- viii) Give any four advantages of forging processes.

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- b) **Attempt any TWO of the following:** **8**
- i) Define forgeability and give any four forgeable materials used to produce automotive components.
  - ii) Enlist any four operations carried out in forging process and explain fullering with neat sketch.
  - iii) State the forging sequence for production of spanner.
2. **Attempt any FOUR of the following:** **16**
- a) Give classification of forging process.
  - b) Explain forging sequence for camshaft.
  - c) Describe fly press with neat sketch.
  - d) Enlist any four die accessories and explain use of stops.
  - e) Differentiate between compound and combination die.
  - f) Draw and identify parts of standard die set.
3. **Attempt any FOUR of the following:** **16**
- a) State 'Plane washer' making process with use of combination die.
  - b) State the working principle of gas welding.
  - c) Differentiate between TIG and MIG welding.
  - d) Explain resistance welding.
  - e) Compare resistance welding and arc welding.
  - f) Explain the working of simple dies with neat sketch.
4. **Attempt any FOUR of the following:** **16**
- a) Sketch and label different types of gas welding flames. Also give application of any one flame.
  - b) Explain electroplating process.
  - c) Describe buffing process and enlist its any two applications.
  - d) Differentiate with acid cleaning and alkaline cleaning process.

- e) Explain absolute and incremental co-ordinate system with neat sketch.
- f) Give classification of CNC machines.

5. Attempt any FOUR of the following:

16

- a) With the help of block diagram explain closed loop control CNC system.
- b) Differentiate between conventional machine and CNC machine.
- c) Give classification of tools used on turning centre.
- d) State the procedure for developing the part program.
- e) State the function of 'G' codes and 'M' codes with any two examples.
- f) Differentiate between lapping and honing process.

6. Attempt any TWO of the following:

16

- a) Prepare a part program for following component. Also give co-ordinate system. Assume suitable data if required. Refer Fig. No. 1.

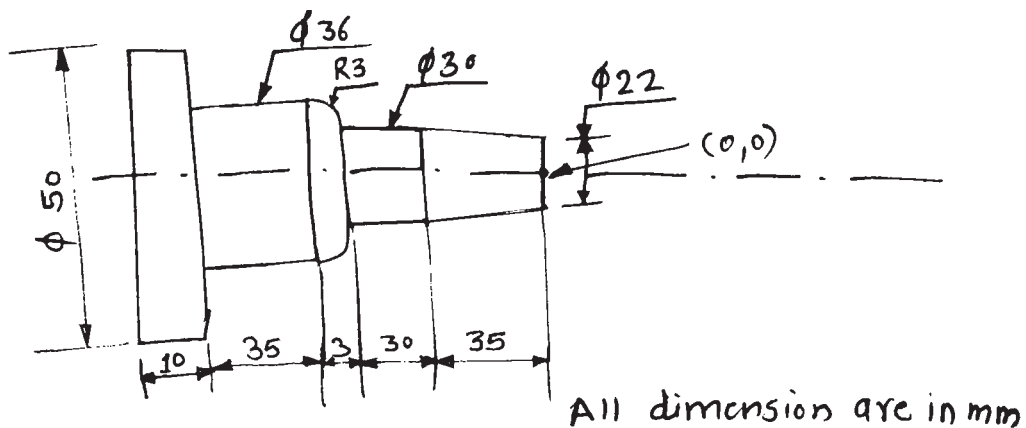


Fig. No. 1

- b) Prepare a part program for following component (Refer Fig. No. 2). Assume suitable data if required. Assume plate thickness is 50 mm.

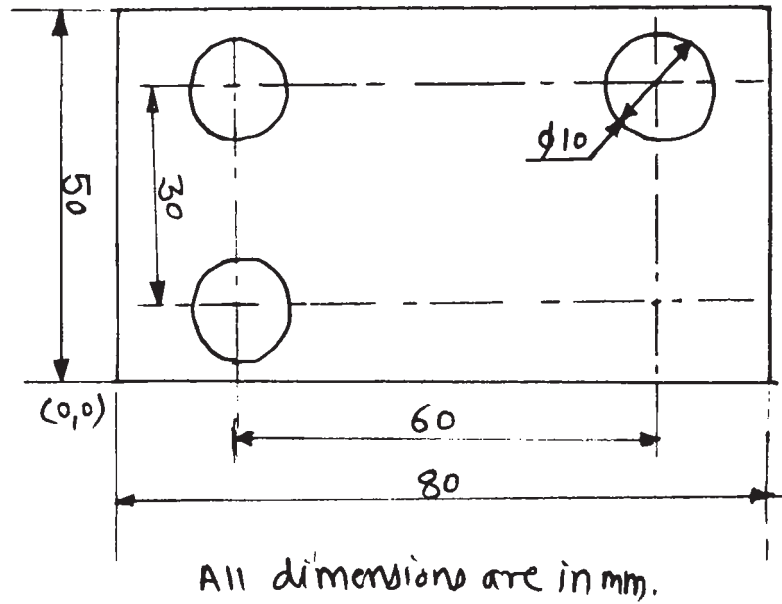


Fig. No. 2

- c) Describe with neat sketch working of progressive die. Also write functions of any four parts of progressive die.

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