

17403

15162

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) Name the common materials used for forging.
- (ii) How the fly press works?
- (iii) Define soldering and enlist any two applications.
- (iv) State one application of MIG and TIG welding.
- (v) Compare between welding and riveting and bolting.
- (vi) State the meaning of G70, G71, M02, M30 codes.
- (vii) Classify the CNC machines based on feedback control and control system features.
- (viii) Why is neutral flame extensively used in oxy-acetylene welding?

P.T.O.

- b) **Attempt any TWO of the following:** **8**
- (i) With neat sketch describe process of drop forging.
 - (ii) Explain progressive die with neat sketch.
 - (iii) Give advantages and disadvantages of forging process.
2. **Attempt any FOUR of the following:** **16**
- a) Distinguish between open die and close die forging.
 - b) Describe forging operation for manufacturing of crankshaft.
 - c) Explain defects in forging.
 - d) Explain any four hand tools used in forging processes with neat sketch.
 - e) Name various automobile components made from forging process. Also select the best suited process for them and describe.
 - f) Describe impression die and closed die forging process with sketch.
3. **Attempt any FOUR of the following:** **16**
- a) List various die accessories. Explain any two of them with neat sketch.
 - b) Describe working of mechanical power press with neat sketch.
 - c) Explain working of stops and pilots used in mechanical press.
 - d) Explain MIG welding process with the help of a neat sketch.
 - e) Explain resistance welding process with the help of neat sketch.
 - f) Describe leftward and rightward welding technique. What are the advantages of R.H. welding over L.H. welding?
4. **Attempt any FOUR of the following:** **16**
- a) Explain working principle of gas welding.
 - b) Explain blasting and tumbling processes. State their uses.
 - c) List chemical cleaning processes. Explain any one of them.
 - d) Describe electroplating process with neat sketch.

- e) Describe hand lapping and machine lapping process with their applications.
- f) Distinguish between NC and CNC systems.

5. Attempt any FOUR of the following:

16

- a) Explain various formats used in part programming.
- b) Explain with suitable example absolute and incremental coordinate system.
- c) Explain working principle of CNC machine using block diagram.
- d) What are the advantages and disadvantages of CNC machines?
- e) Describe following part programming.
- (i) Subroutine
 - (ii) Canned cycle
- f) Write a short note on:
- (i) Buffing
 - (ii) Burnishing and
 - (iii) Polishing

6. Attempt any TWO of the following:

16

- a) Write part program for the component given in Figure No. 1. Also give co-ordinate system.

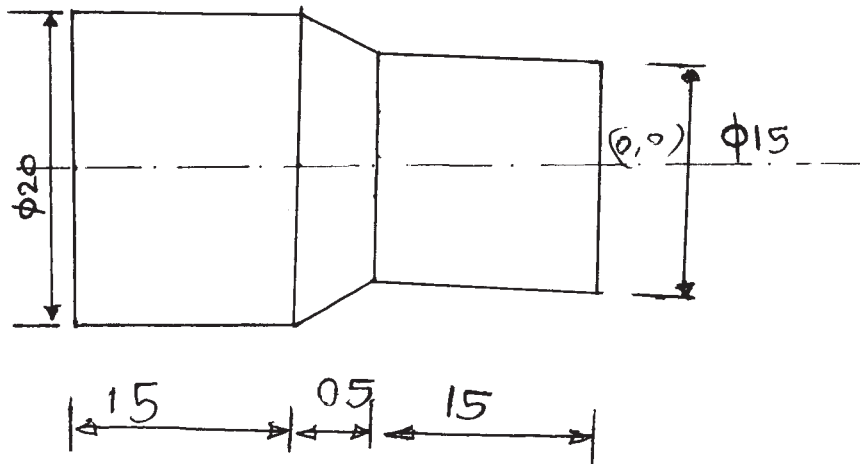


Fig. No. 1

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[4]

Marks

- b) Write part program for the component given in Figure No. 2.

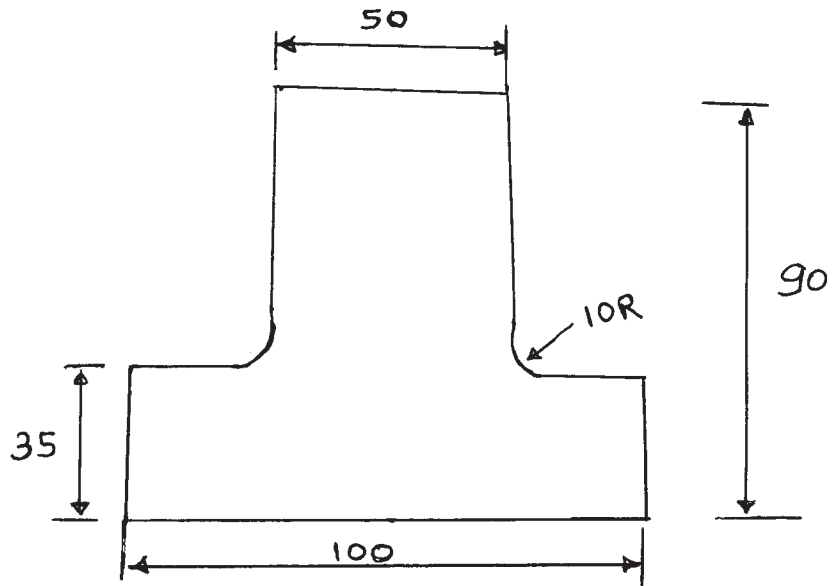


Fig. No. 2

- c) Draw labeled sketch of progressive die. Write functions of any four parts of progressive die.
