

22439

**21222**

**3 Hours / 70 Marks**

Seat No. 

--	--	--	--	--	--	--	--

15 minutes extra for each hour

---

- 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:** **10**
- a) Define forgeability.
- b) Give classification of presses.
- c) List any four die accessories in press working.
- d) List flux materials used in welding.
- e) State applications of surface finishing processes.
- f) State the meaning of following CNC codes:
- i) G00
- ii) G41
- g) State any four advantages of CNC machines.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Describe impression die and closed die forging process with sketch.
  - b) Differentiate between blanking operation and piercing operation.
  - c) Describe with sketch various welding flames.
  - d) State insert specification in CNC machine.
- 3. Attempt any THREE of the following:** **12**
- a) Give forging sequence for making crankshaft.
  - b) Draw a neat sketch of standard die set and label it.
  - c) State different types of dies in press working.
  - d) State working principle of spot welding with sketch.
- 4. Attempt any THREE of the following:** **12**
- a) State the advantages and limitations of forging process.
  - b) Compare TIG and MIG welding process.
  - c) State resistance welding process and its application in automobile industry.
  - d) State advantages of metallic coating process.
  - e) With the help of figure state axis identification of VMC machine.
- 5. Attempt any TWO of the following:** **12**
- a) Explain following press operation with a neat sketch:
    - i) Drawing operation
    - ii) Embossing operation
    - iii) Blanking operation
  - b) Explain Buffing and Hopping operations with the applications.
  - c) State procedure for developing the part program using ISO codes in CNC programming.

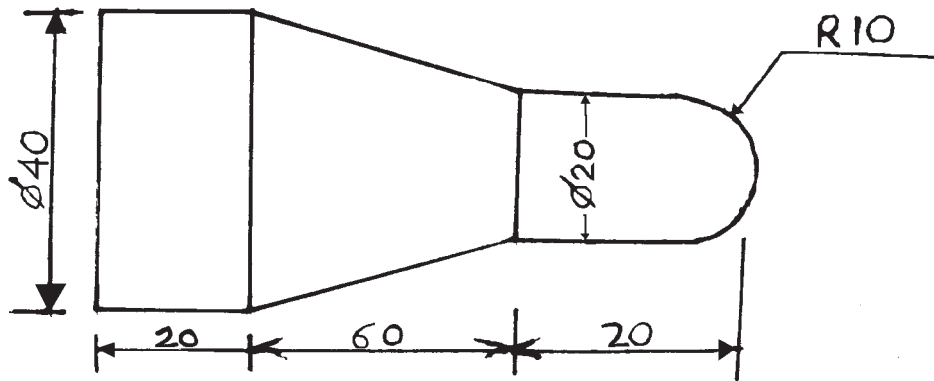
6. Attempt any TWO of the following:

12

- a) Prepare the part program for the given workpiece on Turning centre (CNC Lathe) using ISO codes.

Speed = 1200 r.p.m.

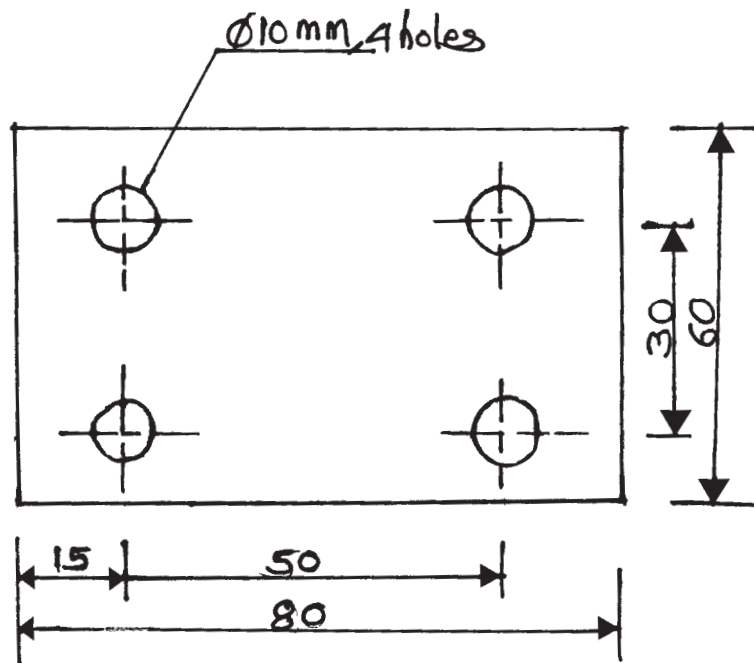
feed = 0.2 mm/rev.



All dimensions are in mm

Fig. No. 1.

- b) Prepare the part program for only drilling operation on the given plate on VMC using ISO codes. Assume suitable data.



All dimensions are in mm

Fig. No. 2.

22439

[ 4 ]

**Marks**

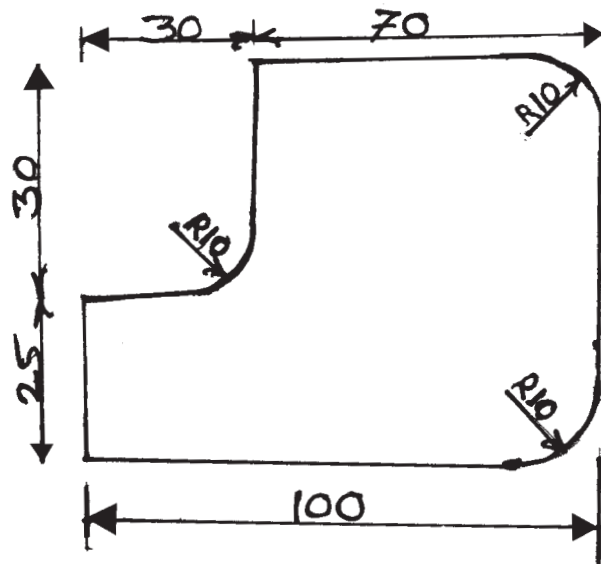
- c) Prepare the part program for the given workpiece on VMC using ISO codes.

Spindle speed = 1000 r.p.m.

feed = 100 mm/min.

cutter =  $\phi$  10 mm H.S.S. cutter.

plate thickness = 20 mm



All dimensions are in mm.

Fig. No. 3.

\_\_\_\_\_