22439

22223

3 Hours / 70 Marks   Seat No.

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 <u>FIVE</u> of the following:**   **10**

a) List any four automobile part made from forging operations.

b) Draw blanking operation with label.

c) Give brief classification of process.

d) Define soldering and give one application of soldering.

e) List any four surface finishing processes.

f) State the meaning of G90 and G91

g) Enlist the two advantages and disadvantages of CNC machine.

Marks

2. **Attempt any THREE of the following:** **12**

    a) Explain with neat sketch open die and closed die forging.

    b) Describe simple die with neat sketch.

    c) Explain spot welding process with neat sketch.

    d) Describe following part programming.

        i)   Sub routine

        ii)   Canned cycle.

3. **Attempt any THREE of the following:** **12**

    a) Write the forging sequence for manufacturing crank shaft.

    b) Sketch progressive die and table all the parts.

    c) Describe with neat sketch pilots and stops.

    d) Explain seam welding process with the help of neat sketch.

4. **Attempt any THREE of the following:** **12**

    a) Describe the forging sequence for production of spanners.

    b) Compare arc welding with resistance welding.

    c) Explain working principle of gas welding.

    d) Explain lapping process with neat sketch.

    e) Explain absolute and incremental co-ordinate system with neat sketch.

Marks

5. **Attempt any TWO of the following:** **12**

a) Give classification of press operations and describe drawing and squeezing operation in detail.

b) Explain Honning and Buffing operations with neat sketch. State any two applications of each.

c) State the significance of following ISO codes in CNC.

i) M02

ii) M03

iii) M30

iv) G00

v) G01

vi) G02

6. **Attempt any TWO of the following:** **12**

a) Prepare the part program for the given component refer figure No.1. Also give the co-ordinate system.

Fig. No. 1

Marks
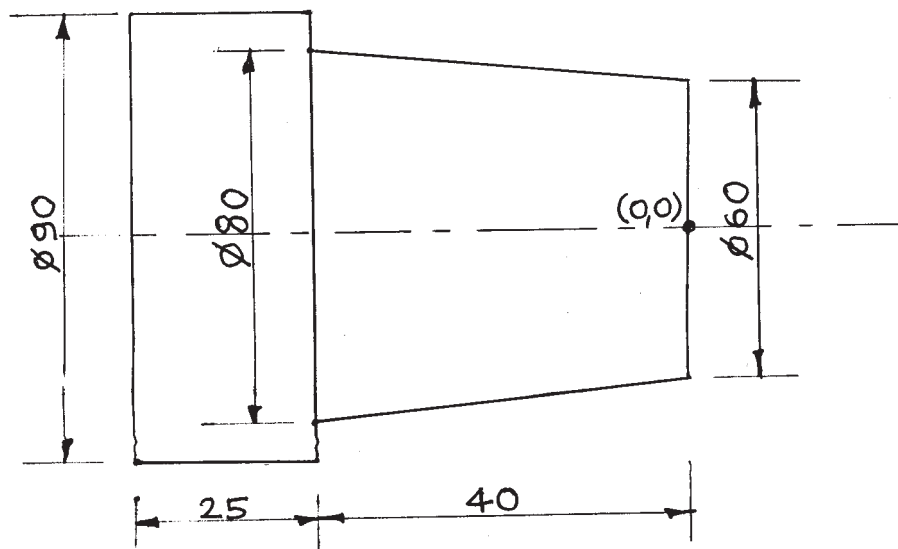
b) Write point to point part program for following plate having 10 mm thickness and drilling holes of 10 mm diameter as shown in figure. No. 2

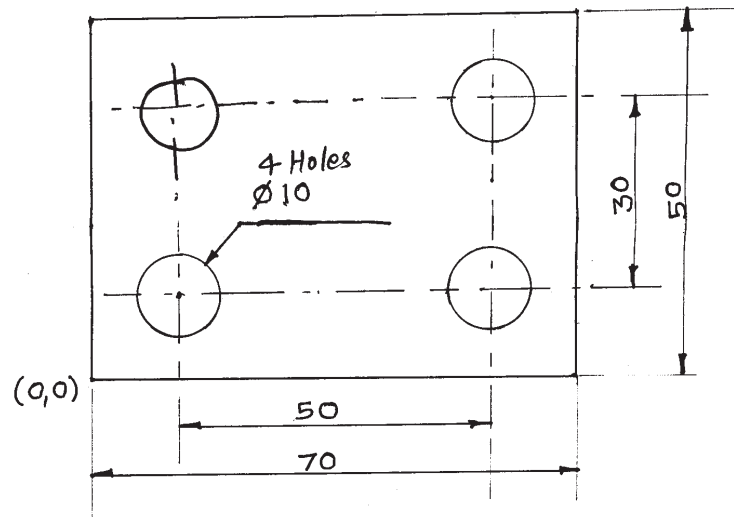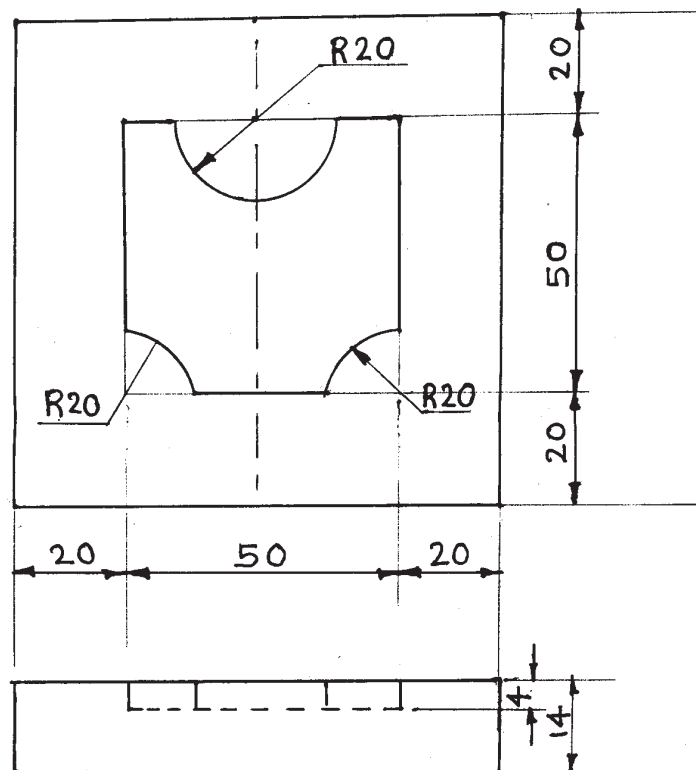4 Holes
∅ 10

(0,0)

50

70

30

50

Fig. No. 2

c) Prepare the part program for the given workpiece on VMC using ISO codes as shown in figure No. 3. Assume suitable data.

R20

R20   R20

20

50

20

20   50   20

14

All dimensions are in mm.

Fig. No. 3