22439

23124

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 FIVE of the following: **10**

a) Define term forgeability.

b) List any four Automobile parts made from the press working operations.

c) Enlist any four press operations.

d) List the factors depends on weldability.

e) Name four surface coating processes.

f) Sketch axis orientation for VMC.

e) State any four advantages of CNC machine over conventional machine.

Marks

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

a) Draw Flatter and Fuller. State its use in forging.

b) Draw neat labeled sketch of fly press.

c) Explain the resistance spot welding process with neat sketch. State its two advantages and disadvantages.

d) Compare absolute with incremental co-ordinate system. (Four points)

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

a) Compare of drog forging and press forging.

b) Explain with Sketch construction and application of progressive die.

c) Classify press and give their application.

d) Explain soldering process.

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

a) Select and sketch the forging sequence for manufacturing connecting rod.

b) Explain the shielded metal arc welding (SMAW) process with neat sketch. State its two advantages and disadvantages.

c) Explain spot welding process.

d) List various surface cleaning processes. Explain any one of them.

e) Write the procedure for developing part programming for CNC.

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

a) Sketch and describe the following press operation.
   i) Punching
   ii) Shearing
   iii) Trimming

b) List any four factors affecting on selection of surface finishing process. List application of lapping, honing, buffing and burnishing.

c) State the significance of following ISO codes in CNC.
   i) G00
   ii) G01
   iii) G04
   iv) M03
   v) M05
   vi) M06

Marks

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

a) Develop a part program to manufacturer a component as shown in Fig. 1 on a CNC lathe machine.

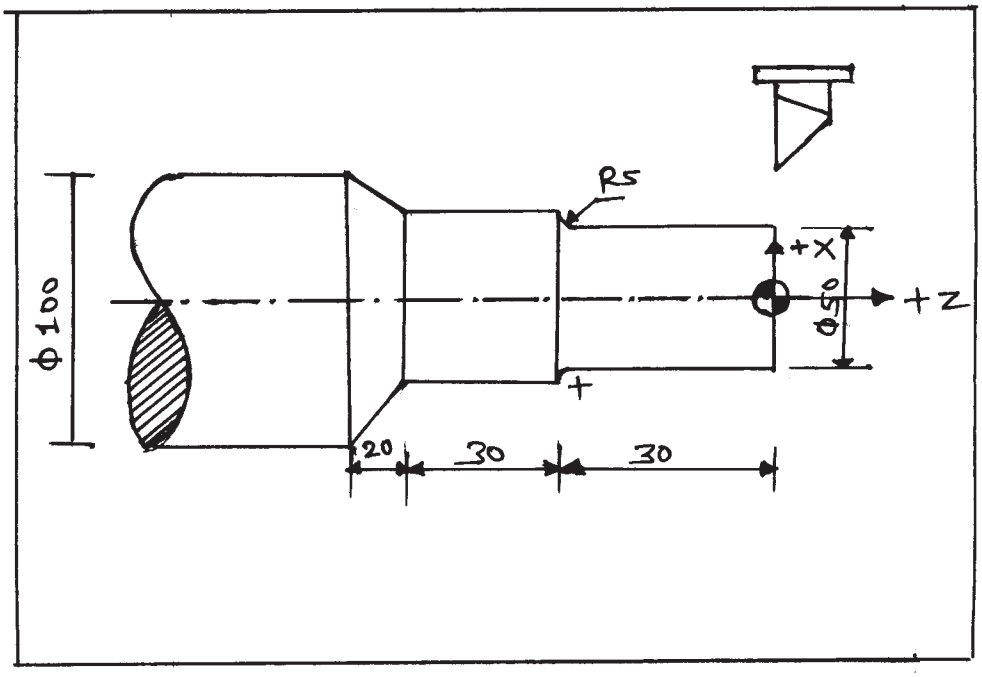

Fig. No. 1

All dimensions are in mm.

Marks

b) Develop a part program to manufacture a component as shown in Fig. 2 on CNC milling machine.

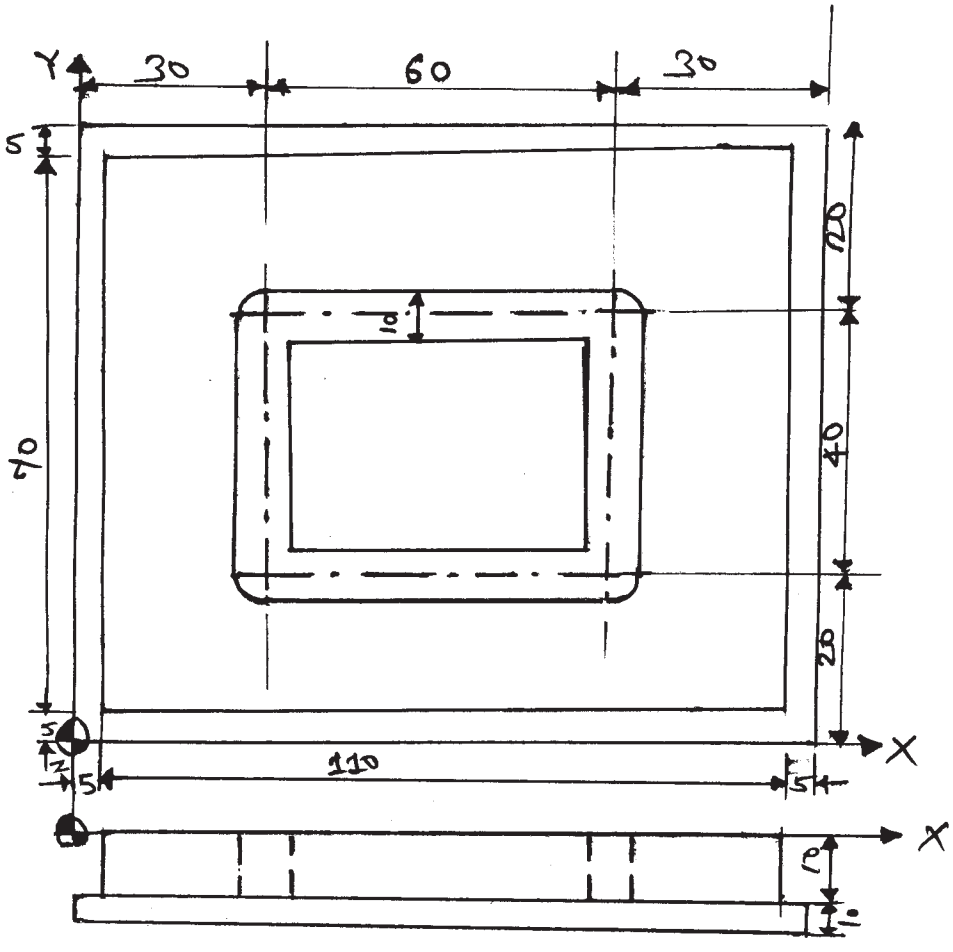

Fig. No. 2

All dimensions are in mm.

Marks

c) State functions of ATC. Develop a part program to manufacture a component as shown in Fig. 3 on CNC lathe machine.

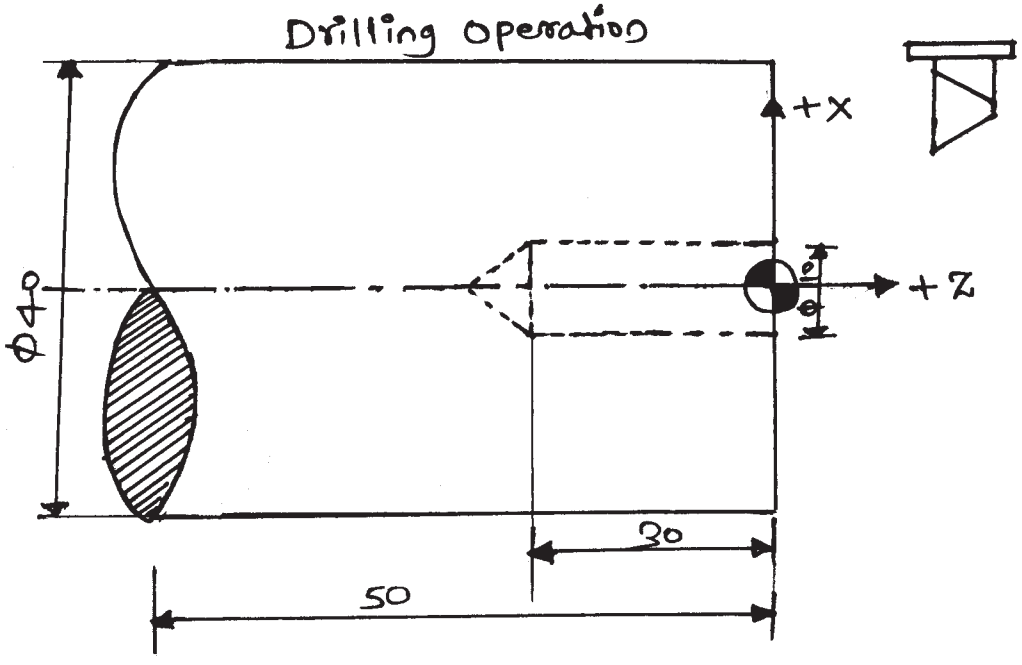

Fig. No. 3

All dimensions are in mm.