22439

**21819**

**3 Hours / 70 Marks** Seat No. | | | | | | | | |

***Instructions :*** (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

**Marks**

**1. Attempt any FIVE of the following :** **10**

(a) Define term 'Forgeability'.

(b) Enlist any four press operations.

(c) List any four automobile parts made from press working operations.

(d) List factors depends on weldability.

(e) Name four surface coating processes.

(f) State the significance of machine reference point for CNC.

(g) List four advantages of CNC machine over conventional machines.

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

(a) Describe forging sequence for production of spanner.

(b) Explain working of fly press with neat sketch.

(c) Explain TIG welding process.

(d) Compare absolute with incremental coordinate system (four points).

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

(a) Classify forging processes.

(b) Enlist die accessories and state function of any of them.

(c) Explain constructional features of compound die with neat sketch.

(d) Explain soldering process.

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

(a) Write forging sequence for manufacturing of camshaft.

(b) State the use of filler and flux materials in welding.

(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) Name different types of presses used in industry. Draw labelled diagram of 'Standard Die Set'.

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

(c) State significance of following ISO codes in CNC :

(i) G00

(ii) G01

(iii) G04

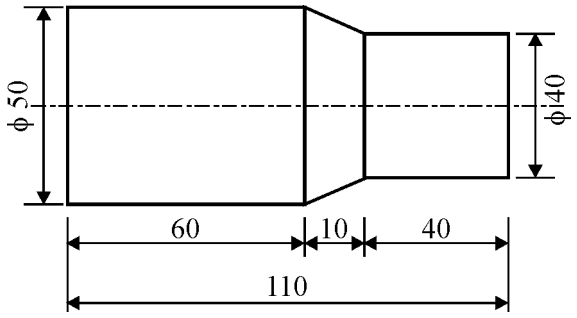
(iv) M03

(v) M05

(vi) M06

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

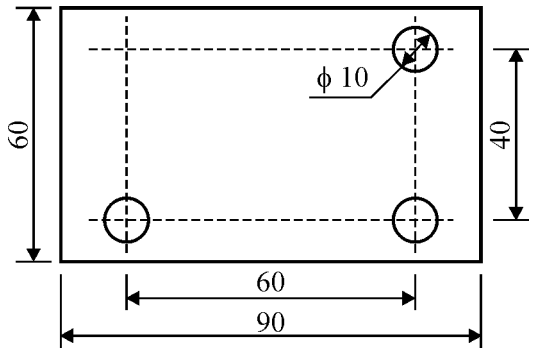
(a) Prepare the part program for the given workpiece Fig. No. 1, on Turning Centre (CNC lathe) using ISO codes. Assume suitable data.




**All dimensions are in mm.**

**Fig. No. 1**

(b) Prepare the part program for drilling operations on given plate fig. No. 2, having thickness 15 mm. Assume suitable data.




**All dimensions are in mm.**

**Fig. No. 2**

(c) Prepare the part program for given workpiece fig. No. 3, on VMC using ISO codes. Assume suitable data.

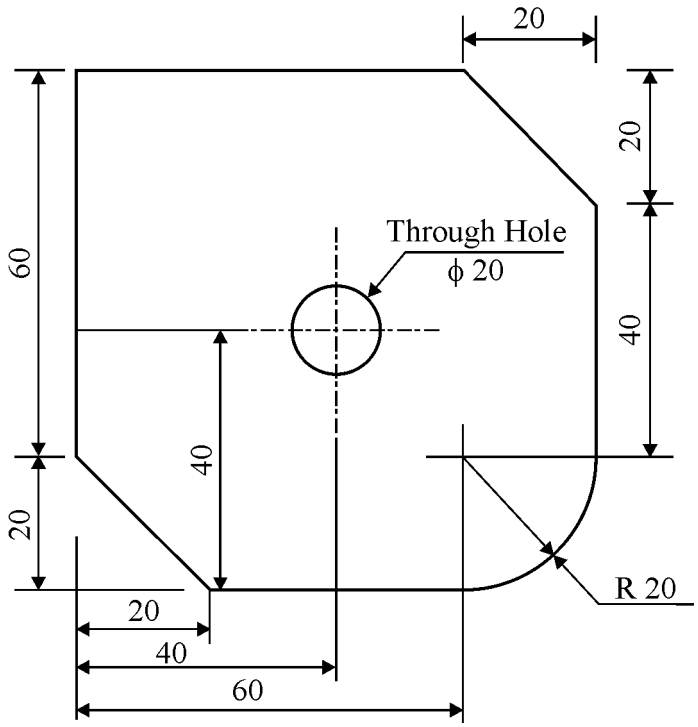



**Plate Thickness is 25 mm.**

**All dimensions are in mm.**

**Fig. No. 3**