

22439

12223

3 Hours / 70 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. Attempt any FIVE of the following:** **10**
- Classify forging process.
 - List any four automobile parts made from press working operations.
 - List any four parts of standard die set.
 - State the factors considered for selection of welding process.
 - List any four metallic surface coating process.
 - Classify the CNC machine based on feedback control.
 - State any four advantages of CNC machines over conventional machines.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Distinguish between open die forging and closed die forging. (any four points)
 - b) Sketch the fly press and label all the parts.
 - c) Explain Gas Metal Arc Welding (GMAW) process.
 - d) Explain axis identification for turning centre and VMC with the help of figure.
- 3. Attempt any THREE of the following: 12**
- a) List any four die accessories and state their functions.
 - b) Explain with sketch progressive die to make a washer.
 - c) Explain with sketches forging sequence for manufacturing connecting rod.
 - d) Compare soldering and brazing on basis of
 - i) Temperature used
 - ii) Filler material
 - iii) Joint strength
 - iv) Application
- 4. Attempt any THREE of the following: 12**
- a) Draw simple labelled sketches showing forging sequence for manufacturing spanner.
 - b) Explain with neat sketch different types of gas welding flames. List application of any one.
 - c) Explain with neat sketch surface finishing process used to correct hole geometry in component.
 - d) Explain seam welding process.
 - e) Explain absolute and incremental coordinate system with suitable example.

5. Attempt any TWO of the following:

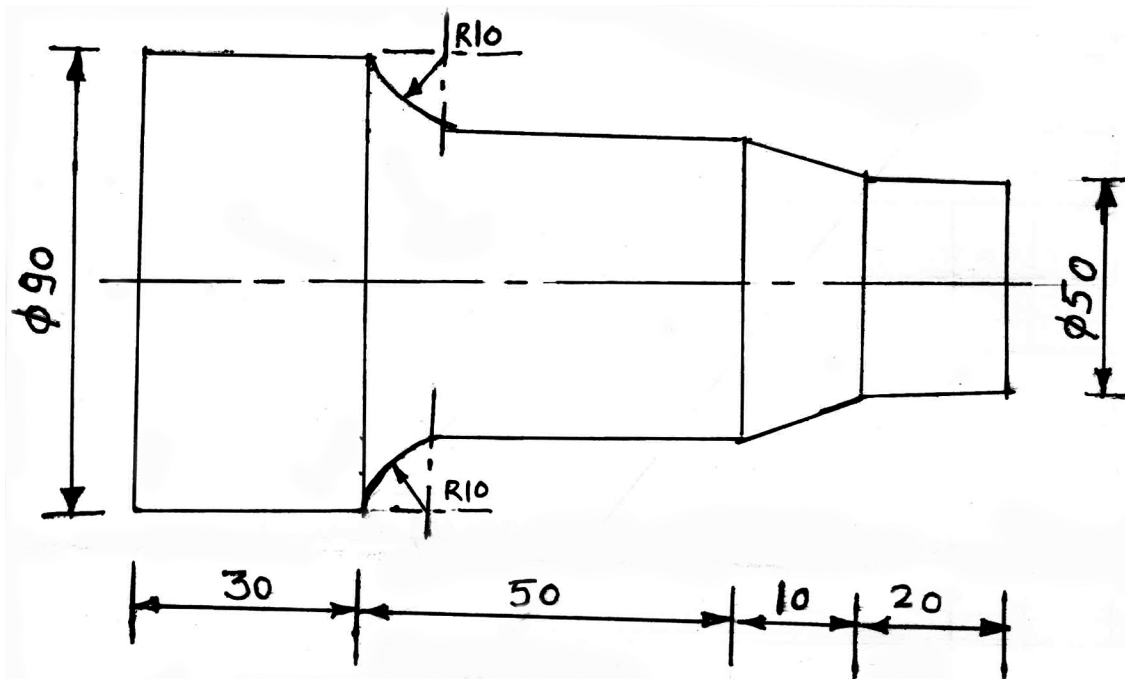
12

- a) Classify press operations and explain any one press operation with neat sketch.
- b) Explain Lapping and Honing operations with the applications.
- c) Distinguish between the following codes in brief
 - i) G02 and G03
 - ii) G94 and G95
 - iii) M02 and M30

6. Attempt any TWO of the following:

12

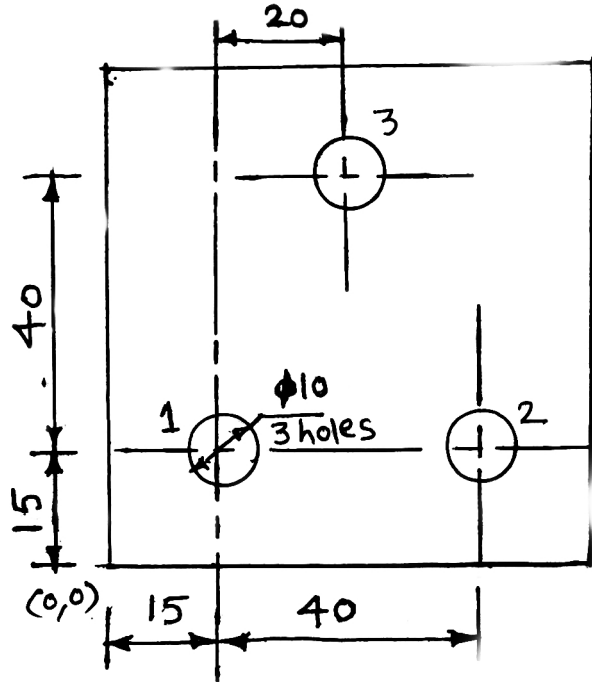
- a) Prepare the part program for the given workpiece on turning centre (CNC lathe) using ISO codes. Assume suitable data. (Refer Figure No. 1.)



All dimensions are in mm.

Figure No. 1.

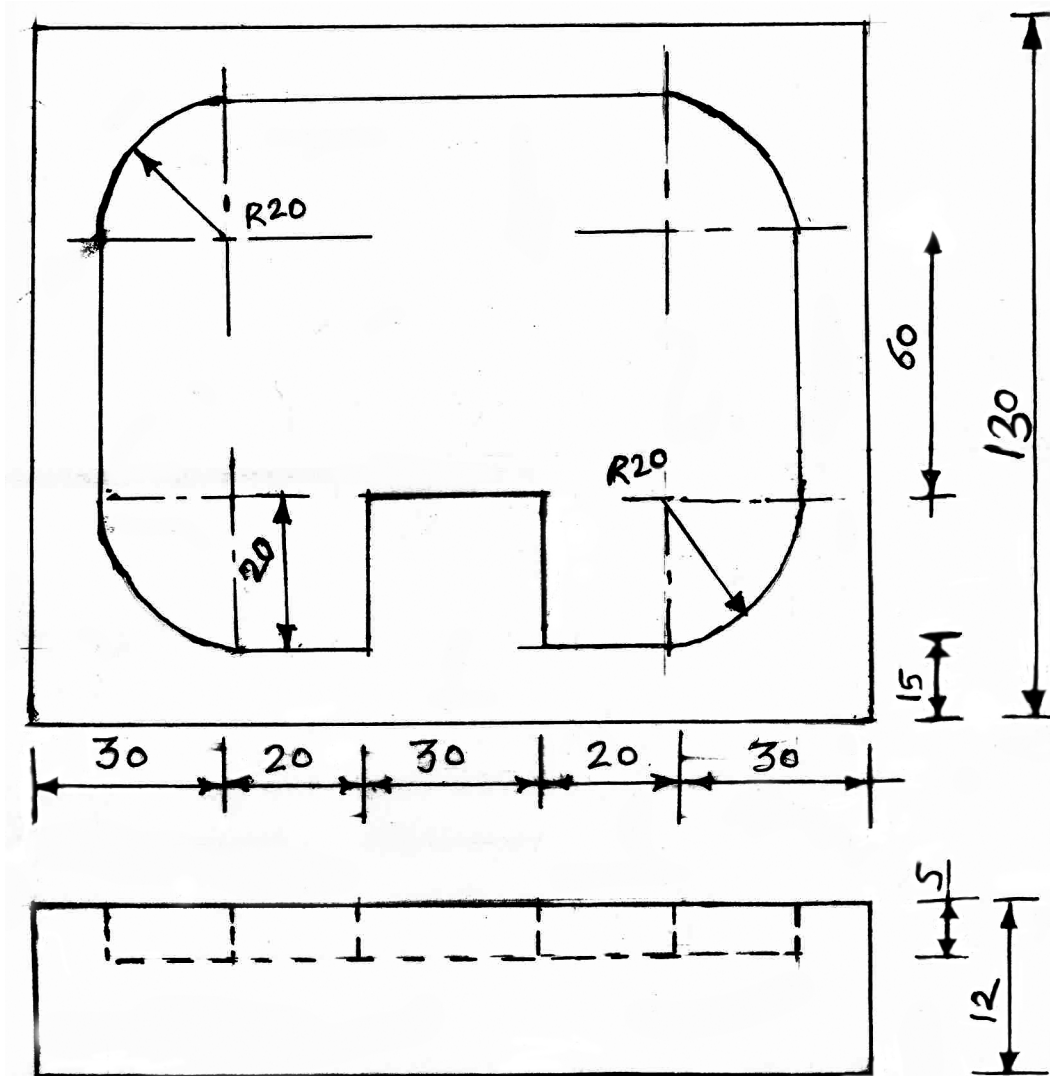
- b) Prepare the part program for only drilling operations on the given plate on VMC using ISO codes. Assume suitable data.
(Refer Figure No. 2)



All dimensions are in mm.

Figure No. 2.

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



All dimensions are in mm.

Figure No. 3.