

12100

21314

3 Hours / 100 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.

Marks

1. a) **Attempt any SIX of the following :** **12**
- i) Define forgeability.
 - ii) Give limitation of NC machines.
 - iii) List four press components used in automobiles.
 - iv) List any four handtools used in forging process.
 - v) What is meant by ‘G’ codes and ‘M’ codes.
 - vi) Define welding process.
 - vii) List any two die accessories, also state their function.
 - viii) List two finishing processes applied to automobile components.
- b) **Attempt any TWO of the following :** **8**
- i) Explain with a neat sketch the construction of the combination die.
 - ii) Write advantages and disadvantages of CNC machines.
 - iii) Differentiate between lapping and honing process.

P.T.O.

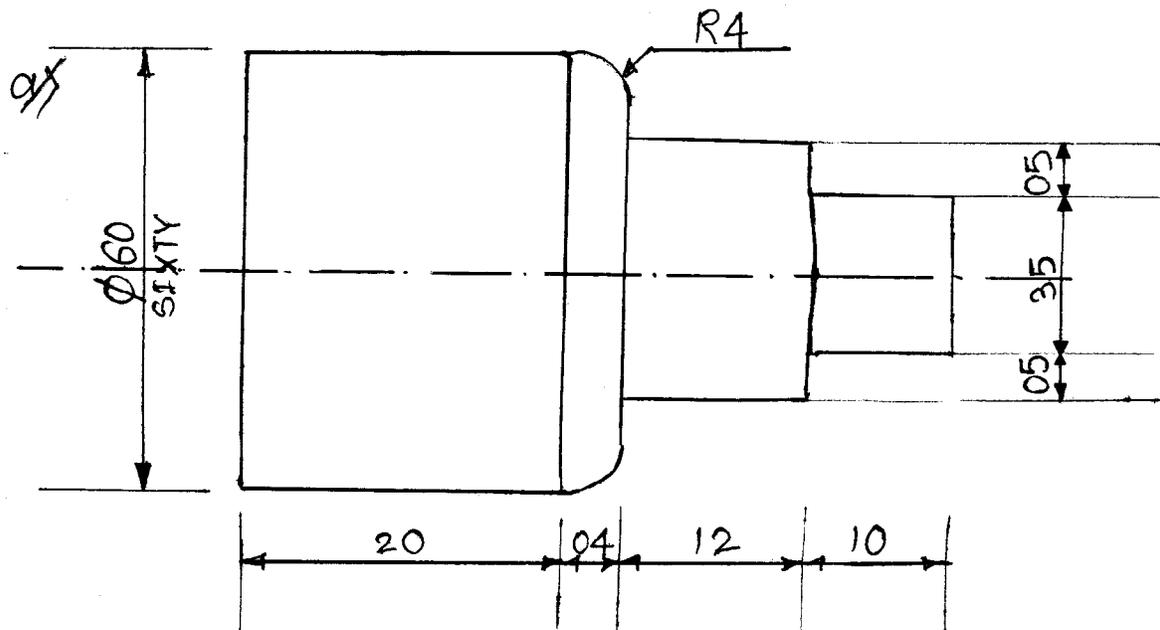
- 2. Attempt any FOUR of the following :** **16**
- a) Sketch standard die-set and label all parts.
 - b) List all the press operations and sketch any one.
 - c) Give classification of presses and sketch any one.
 - d) Differentiate between compound die and combination die.
 - e) Explain with a neat sketch the process of drop forging.
 - f) Explain with neat sketch forging sequence of gear.
- 3. Attempt any FOUR of the following :** **16**
- a) Differentiate between blanking and punching.
 - b) Explain with a neat sketch working principle of Arc welding.
 - c) State the purpose of pilots and strippers.
 - d) Differentiate between CNC and DNC machines.
 - e) Differentiate between soldering and brazing.
 - f) Sketch any four hand tools which are used in forging process.
- 4. Attempt any FOUR of the following :** **16**
- a) List any four advantages of electroplating process.
 - b) Write down the forging sequence for crankshaft of engine with neat sketch.
 - c) Explain with a neat sketch MIG welding process.
 - d) Differentiate between spot welding and seam welding.
 - e) Explain types of flames used in gas welding with neat sketches.
 - f) Describe with neat sketch metal spraying method.

5. Attempt any FOUR of the following :**16**

- Write down the block format used in part programming.
- List the various factors considered for the selection of finishing process, for a particular application.
- How axes are identified in CNC machining, also sketch axes system in CNC machines.
- Explain buffing process with a neat sketch.
- List any four advantages and any four limitations of forging process.
- Give classification of CNC machines.

6. Attempt any TWO of the following :**16**

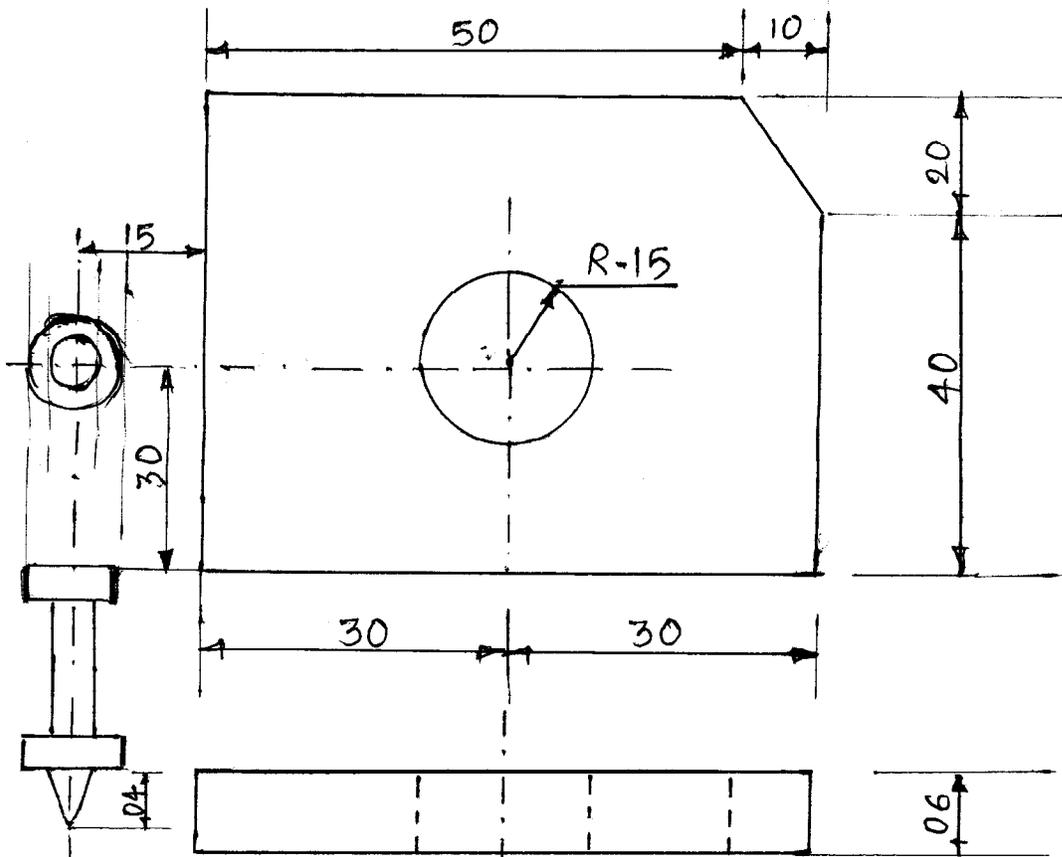
- Write down the part programme component for shown in Fig. No. 1 by using ISO codes on CNC lathe.



All Dimensions are in mm

Fig. No. 1

- b) Write the part programme by using ISO codes for component shown in Fig. No. 2 on VMC machine.



All Dimensions are in mm

Fig. No. 2

- c) Write the meaning of any four functional codes as well as any four non-functional codes used in programming.
