

17403

15116

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.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any SIX of the following: 12
- (i) List any two automotive forged components.
 - (ii) List any two applications of aluminum as press work material.
 - (iii) Classify fusion welding process.
 - (iv) Define welding process.
 - (v) List any two chemical cleaning processes.
 - (vi) Draw program format for CNC machine.
 - (vii) Enlist the disadvantages of NC machines.
 - (viii) Define forgeability.
- b) Attempt any TWO of the following: 8
- (i) Describe with neat sketch forging sequence of spanner.
 - (ii) Classify forging process.
 - (iii) State advantages and limitations of forging process.

P.T.O.

2. Attempt any FOUR of the following

- a) Enlist any four forgeable metals or alloys. Also list properties of forgeable materials.
- b) Describe upsetting and bending operation carried out in forging process.
- c) Classify presses on the basis of:
 - (i) Source of power
 - (ii) Design of frame
- d) Draw neat labelled sketch of fly press.
- e) Describe with neat sketch pilots and stops.
- f) Explain piercing and blanking press operation.

3. Attempt any FOUR of the following**16**

- a) Draw neat labelled sketch of progressive die for blanking and piercing operation.
- b) Explain types of flames used in gas welding.
- c) Differentiate between TIG and MIG welding process.
- d) Enlist any four factors which affects selection of welding process.
- e) Describe with neat sketch resistance spot welding.
- f) Describe with neat sketch combination die.

4. Attempt any FOUR of the following**16**

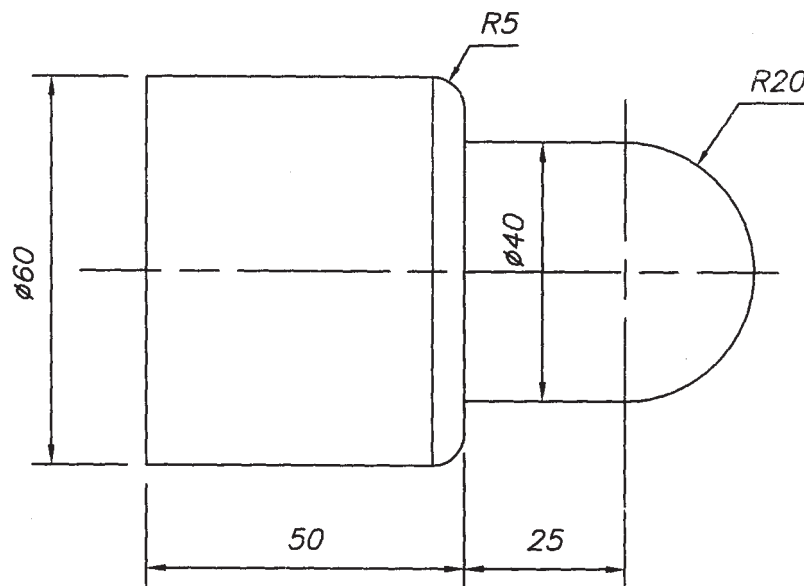
- a) Give comparison between resistance welding.
- b) List any four types of surface coating processes and also list any four organic coating materials used in painting processes.
- c) Describe with neat sketch buffing process.
- d) Explain abrasive blast cleaning process.
- e) Give any four advantages and disadvantages of CNC machines.
- f) Describe co-ordinate system used in CNC machines.

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

- Enlist and explain the basic components of CNC machines.
- Give classification of CNC machines.
- Give comparison between conventional machines and CNC machines.
- Explain block format used in part programming.
- Write any four ISO codes used for preparatory functions.
- Describe electrolytic surface cleaning process.

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

- Write a part program for following component as shown in Figure No. 1. Assume suitable data for programming.



NOTE: ALL DIMENSIONS ARE IN MM

Fig. No. 1

- b) Write a part program for the job shown in Figure No. 2

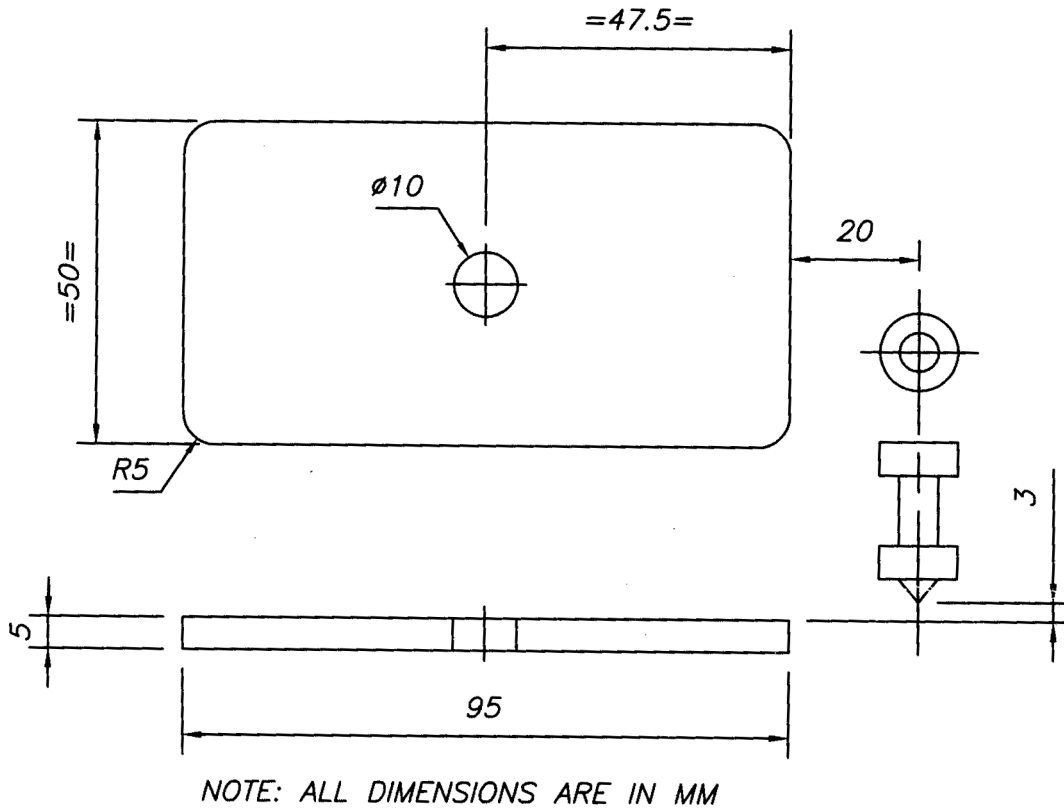


Fig. No. 2

- c) Give classification of press operations and describe drawing and squeezing operation in details.