

17527

11920

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 THREE of the following: 12
- (i) State the importance of non-traditional machining processes.
- (ii) Why axis identification is necessary in CNC machine system?
- (iii) Give the applications of Broaching machine.
- (iv) Give any four applications of AJM.
- b) Attempt any ONE of the following: 6
- (i) Draw neat labelled diagram of EDM and explain the process w.r. to its principle, applications and limitations.
- (ii) Explain open loop and closed loop control systems with their applications.

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2. Attempt any FOUR of the following:

16

- With a neat labelled sketch, describe the principle of PAM.
- Explain the concept of 'Jog Mode'.
- Give the classification of milling machines.
- Explain the following gear finishing methods.
 - Burnishing
 - Grinding.
- Explain the need and importance of maintenance activity.

3. Attempt any TWO of the following:

16

- Prepare a part programme for component as shown in Fig.No.1.

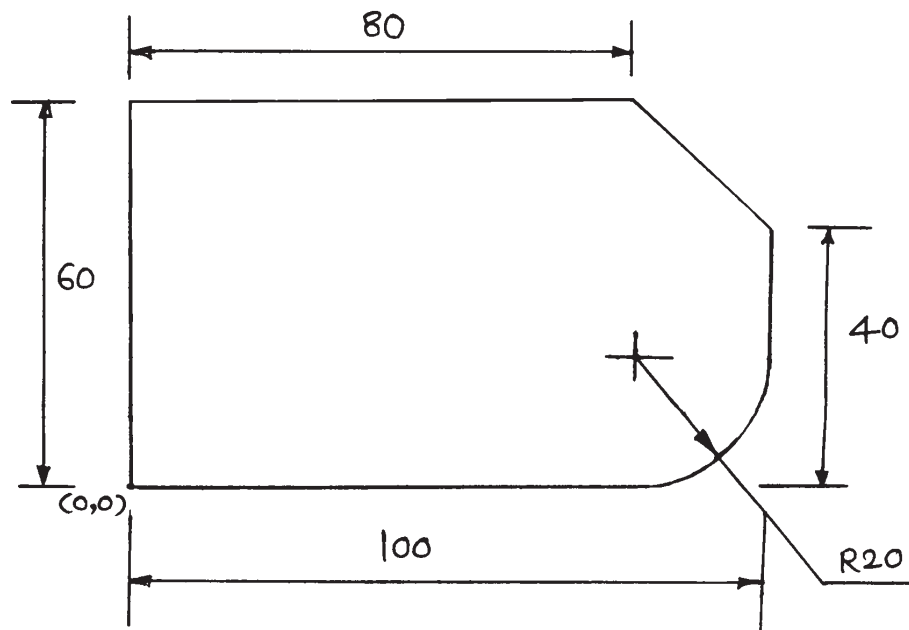


Figure - No. 1

Use following machining data,

- End mill cutter of diameter 10mm.
- Depth/Thickness of part is 4mm.
- Feed rate is 120 mm/min.
- Spindle speed is 800 rpm.

Also use cutter radius compensation and assume suitable machining data if required.

- b) How are non traditional machining processes classified?
Explain with a neat sketch LBM and WJM.
- c) What is gear cutting? Explain the gear hobbing operation with neat sketch and give its advantages, disadvantages and applications.
- 4. a) Attempt any THREE of the following: 12**
- (i) Explain with neat sketch following milling operations,
(1) Straddle milling
(2) Slot milling
- (ii) Explain the various cutting parameters of milling.
- (iii) Give the advantages and applications of honing.
- (iv) Explain the basic maintenance practices for 'Bearing' and 'Shaft'.
- b) Attempt any ONE of the following: 6**
- (i) Define indexing. Explain the methods of indexing with neat sketch.
- (ii) Give classification of grinding machines and explain working of cylindrical grinding machine with neat sketch.
- 5. Attempt any FOUR of the following: 16**
- a) What is 'Repair Complexity'? State the signification of 'Repair Cycle'.
- b) State the criteria for selection of grinding wheel.
- c) Explain gear shaving operation.
- d) State the advantages and applications of lapping.
- e) Differentiate between Capstan and Turret lathe.
- f) State the types of Boring machines and sketch any two boring tools.

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

- a) Explain burnishing related to surface finishing. Give its advantages.
 - b) Draw the neat labeled sketch of a broach and state the function of each element.
 - c) What is maintenance record? Prepare typical maintenance sheet for preventive maintenance.
 - d) Describe the construction and working of planomiller.
 - e) State the significance of G01, G04, M06, M03 in part programming.
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