

(3 Hours)

(Total Marks : 80)

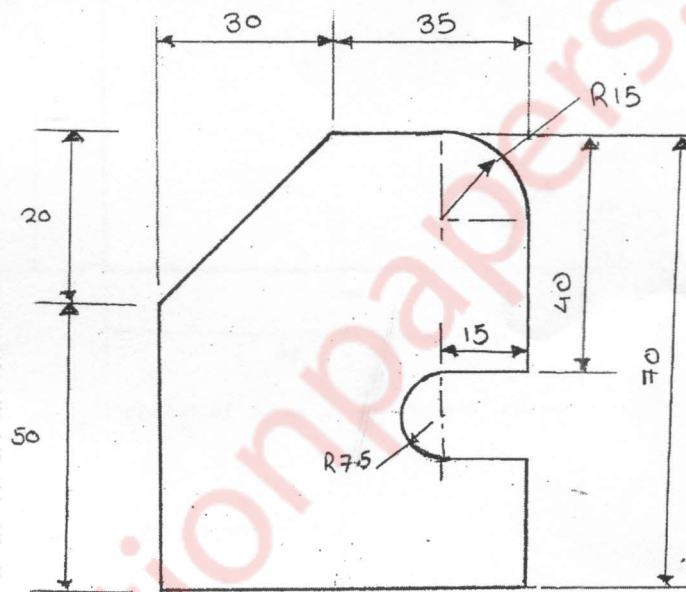
Please check whether you have got the right question paper.



N.B. :

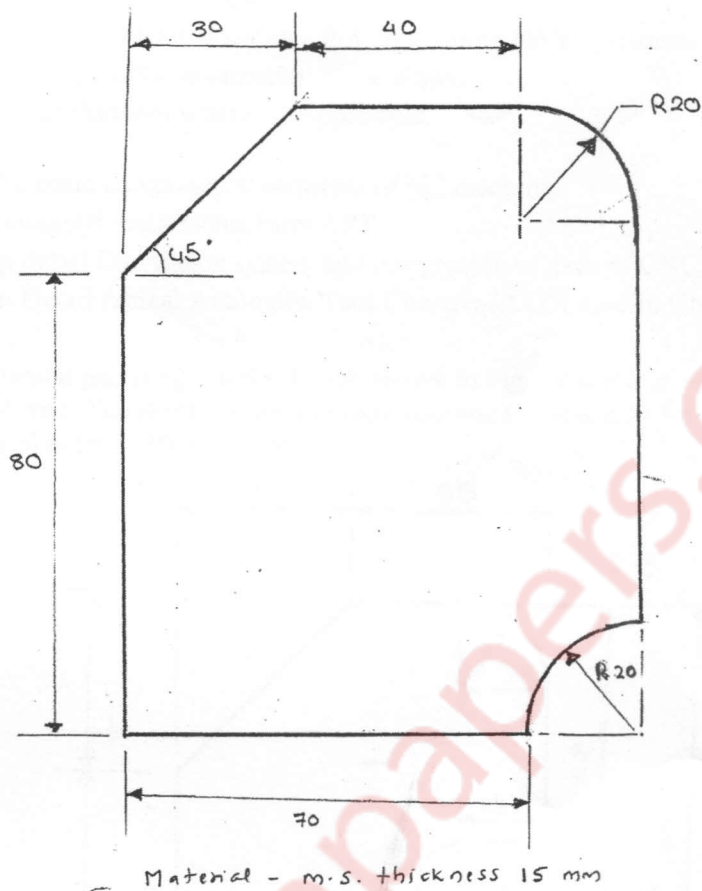
- 1) Question No.1 is Compulsory.
- 2) Attempt any **THREE** questions from remaining FIVE questions.
- 3) Clearly mention the assumption made if any.
- 4) Draw Neat sketches wherever Applicable.

1.
  - a) Explain the basic components/ elements of NC machine. (05)
  - b) Explain Geometric statements form APT. (05)
  - c) Explain in detail Coordinate system and designation of axes of CNC system. (05)
  - d) Explain in Detail typical Automatic Tool Changer (ATC) used in CNC Machine. (05)
2.
  - a) Write a manual part program for the job shown in Fig. by using an end mill of diameter 6 mm. The depth of slot is 2 mm. Assume suitable data for speed, feed, etc. Material is En 8, 10mm thick. (12)



- b) Explain the method of adaptive control for CNC machine. (08)
3.
  - a) Explain the traffic control and communication system in AGV's. (10)
  - b) What is rapid prototyping? Explain the basic steps used in the rapid prototyping process. (10)
4.
  - a) Explain the elements of CIM system. (10)
  - b) Describe the CNC hardware in brief. (10)

5. (a) Write the computer aided part program (APT) for the outline of the geometry shown (12) in Fig.



- (b) Explain in detail design process of ASRS (08)

6. Write Short note on

- (a) Tool presetting. (05)  
 (b) Canned cycles. (05)  
 (c) CMM (05)  
 (d) Ghost factory (05)