

[Time: 3 Hours]

[Marks :80]

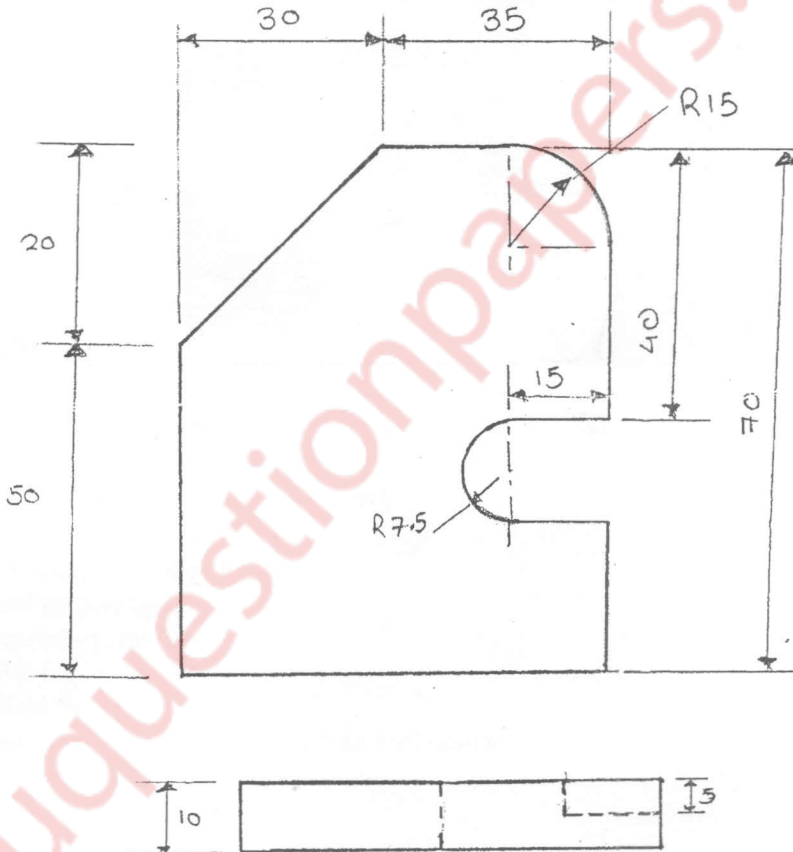
Please check whether you have got the right question paper.

- N.B:
- 1) Question **no.1** is **compulsory**.
 - 2) Attempt any **four** questions out of remaining **five** questions.
 - 3) **Figure** to the **right** indicate full **marks**
 - 4) Assume suitable data if necessary and justify



1. Answer the following (**Any four**) 20
 - a) Explain the basic components / elements of NC machine.
 - b) Explain Geometric statements of APT.
 - c) Explain in detail Coordinate system and designation of axes of CNC system.
 - d) Explain in Detail typical Automatic Tool Changer (ATC) used in CNC Machine.
 - e) APC

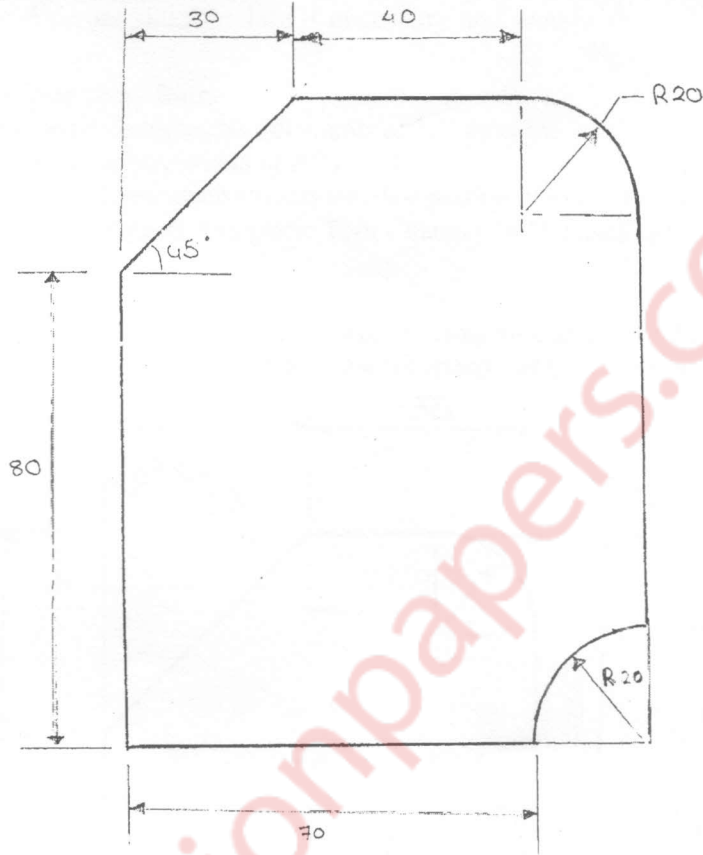
2. a) Write a manual part program for the job shown, by using an end mill of diameter 6 mm. 12
 the depth of slot is 2 mm. Assume suitable data for speed, feed, etc. Material is En 8



- b) Explain the method of adaptive control for CNC machine. 08

3. a) Explain the traffic control and communication system in AGVS. 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. 10
5. a) Write the computer aided part program (APT) for the outline of the geometry shown. 12



- b) Explain in detail, design process of AS/RS. 08
6. Write Short note on : (Any Four) 20
- a) Tool presetting
 - b) Canned cycles
 - c) CMM
 - d) Ghost factory
 - e) ISO specification for OD turning tool holder