

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2171903

Date: 06/05/2017

Subject Name: Computer Aided Manufacturing

Time: 02.30 PM to 05.00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is CIM? Explain Components of CIM. **07**
(b) What are the different types of manufacturing? Make an assessment of the extent of computer control in specific cases of each types of manufacturing. **07**
- Q.2** (a) Explain clearly the difference between NC, CNC and DNC machine. **07**
(b) Explain recirculating ball screw used in CNC machine. **07**
- OR**
- (b) Explain the cutter radius compensation to the left and right with suitable illustration. **07**
- Q.3** (a) What are the essential elements of a PLC system? **07**
(b) Why is part classification and coding required in GT. Explain OPTIZ system of coding. **07**
- OR**
- Q.3** (a) Explain the variant type CAPP system. State the benefits and limitations of variant type CAPP systems. **07**
(b) What is Group Technology? What are the advantages of GT in manufacturing? **07**
- Q.4** (a) Write short note on Automatic Storage and Retrieval Systems and their applications areas in FMS. **07**
(b) What are the different types of drives used in robots? **07**
- OR**
- Q.4** (a) What is FMS? Explain the basic components of FMS. **07**
(b) Differentiate between a SCARA and a gantry robot. **07**
- Q.5** (a) Explain the role of CMM in Computer Aided Quality Control. What are different elements of a CMM? **07**
(b) What are the major functions of process planning? What are the main problems associated with manual process planning? **07**
- OR**
- Q.5** (a) Develop a CNC program, using G and M code, to cut a slot for the component shown in fig.1 by using a end mill of diameter 6mm . The depth of slot is 5mm. Assume suitable data for speed, feed ,etc. **07**
(b) Explain with neat sketch the various types of layouts used in FMS design and their applications. **07**

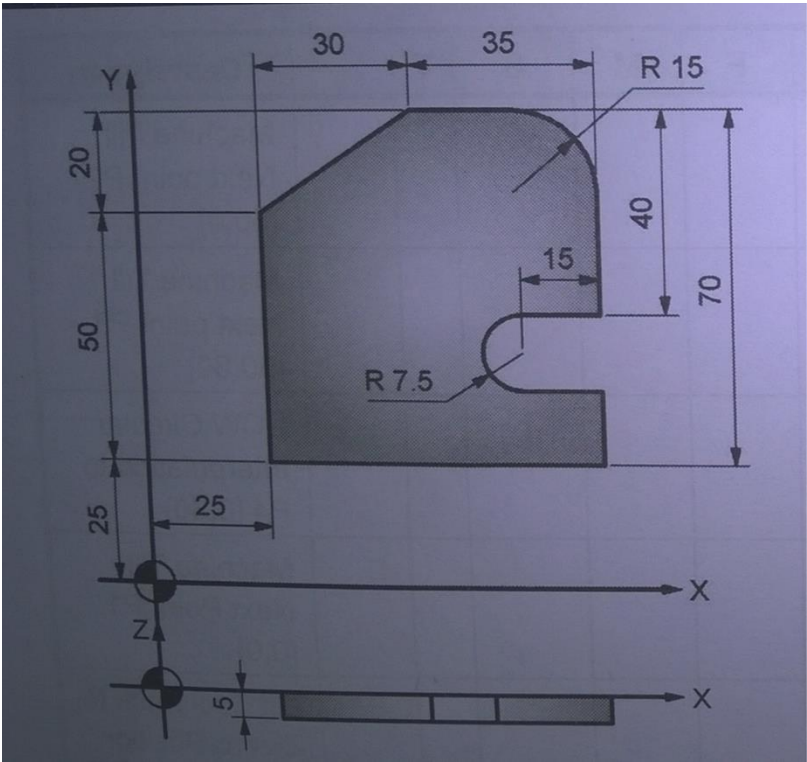


Fig.1
