

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. Sem. – IInd - Examination – June/July- 2011

Subject code: 1720802

Subject Name: Computer Aided Manufacturing

Date: 24/06/2011

Time: 10:30 am – 01:00 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) Explain axes designation in CNC machine tool stating illustration of a vertical milling machine. **07**
- (b) Briefly explain about flexible manufacturing system. List and explain different FMS layout configurations. **07**
- Q.2** (a) What is the meaning of computer integrated manufacturing? Explain nature and role of the elements of CIM system. **07**
- (b) Define programmable logic controller. Explain about construction and working of PLC. **07**

OR

- (b) Explain the automated features and capabilities of turning center. **07**
- Q.3** (a) Explain the difference between NC and CNC machines. **07**
- (b) Write a manual part program for finishing a forged component as shown in fig. 1. Assume 1 mm material is to be removed radially from external diameter. Use appropriate values for cutting parameters. **07**

OR

- Q.3** (a) Describe the automatic tool changer with neat sketch. **07**
- (b) Write APT program to machine the bracket shown in fig. 2. Assume the component to be 10 mm thick. The post processor statement is MACHIN/MMPOST, 3. Use appropriate values for cutting parameters and cutter size. **07**
- Q.4** (a) List and explain about the basic components of flexible manufacturing system. **07**
- (b) Explain the difference between an automated manufacturing cell and flexible manufacturing system. **07**

OR

- Q.4** (a) Briefly explain about automated guided vehicle and List the advantages over conventional material handling system. **07**
- (b) List the general functions performed by computers in FMS. Briefly explain about the computer hardware elements used in FMS. **07**

- Q.5 (a)** Discuss the development of computer integrated manufacturing system. **07**
- (b)** Explain about the artificial intelligence based scheduling in CIM environment. **07**

OR

- Q.5 (a)** Explain about the evolution of NC/CNC controllers. **07**
- (b)** Discuss the application of LASERS in machining and metrology. **07**

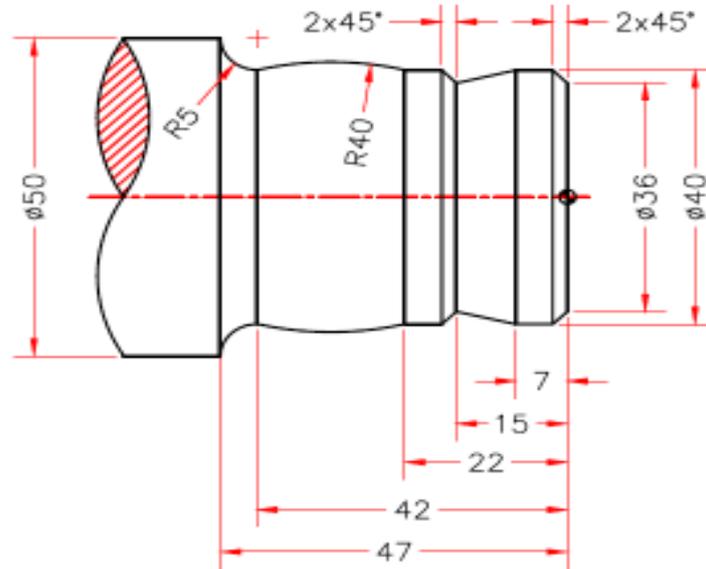


Fig. 1

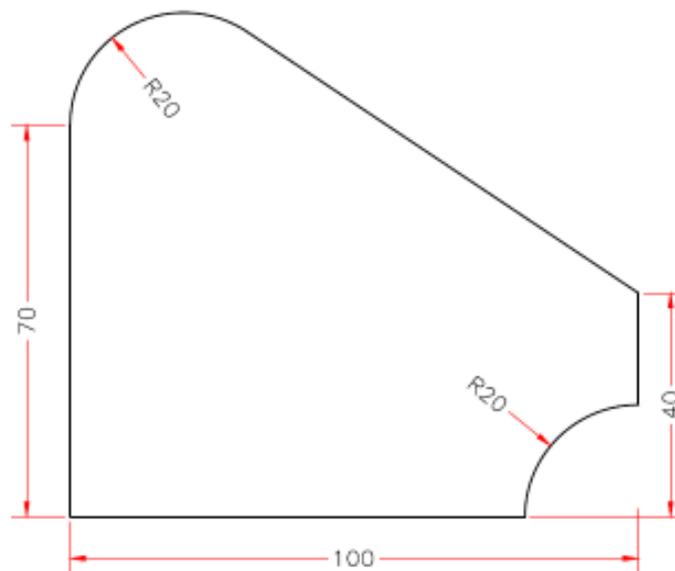


Fig. 2
