

GUJARAT TECHNOLOGICAL UNIVERSITYB. E. VIIth Semester–Examination – Nov- 2011

Subject code: 171903

Subject Name: Computer Integrated Manufacturing

Date: 24/11/2011

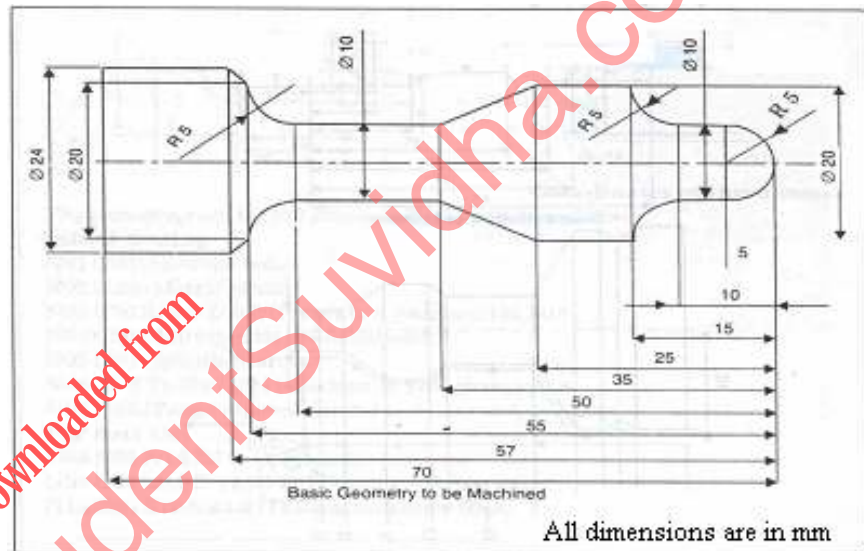
Time: 10:30 am – 01:00 pm

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) List types of manufacturing systems and compare each with respect to flexibility, variety and production quantity. Also state potential benefits of CIM. **07**
- (b) Differentiate between NC and CNC. List their advantages and limitations. **07**
- Q.2** (a) Write a manual part program for the component shown in the figure below. **07**



- (b) Explain various types of tape readers with sketch used in NC machines **07**
- OR**
- (b) Write a short note on recirculating ball screw used in CNC machines with sketch. **07**
- Q.3** (a) Explain geometrical and motion statements used in APT with illustration. **07**
- (b) What is group technology? Explain opitz classification and coding system in brief **07**
- OR**
- Q.3** (a) Explain with illustration; **07**
- (i) Drilling canned cycle
 - (ii) Parametric subroutine
 - (iii) Fixed zero and floating zero
- (b) What is FMS? List different flexibilities associated with FMS and explain any two in brief **07**
- Q.4** (a) Explain the inputs of MRP system in brief **07**
- (b) Distinguish between variant and generative type CAPP stating their advantages **07**
- OR**

- Q.4** (a) Write a short note on MRP II 07
(b) Elaborate the role of elements of CIM with the help of CIM wheel 07
- Q.5** (a) Explain commonly used robot programming language with illustration 07
(b) Write a short note on Automated Guided Vehicles associated with FMS 07
- OR**
- Q.5** (a) Describe with sketch ASRS 07
(b) Define robot. Select most suitable robot configuration for following aspects with justification; 07
- (i) Maximum accuracy requirements
 - (ii) Minimum space requirements
 - (iii) Automobile Car body painting

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