

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Subject Code: 171903**Date: 04-12-2014****Subject Name: Computer Integrated Manufacturing****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) Classify CNC machine tools on the basis of : **07**
 (i) Type of feedback system
 (ii) Type of tool motion control
- (b) What is FMS? Explain any three flexibilities associated with FMS. **07**
- Q.2** (a) What is tool compensation? Explain tool length and cutter radius compensation. **07**
 (b) Explain the feedback system of NC/CNC machine. **07**
- OR**
- (b) What do you mean by geometry statement in ATP? Explain with suitable example, the format of geometry statements. **07**
- Q.3** (a) Write complete part program for the component shown in Fig.1. **07**
 Raw material: MS $\Phi 30 \times 65$ mm, cutting speed $V = 40$ m/min and feed = 0.1 mm/rev
- (b) What is GT? Explain methods of grouping parts into part families in brief. **07**
- OR**
- Q.3** (a) What are the objectives of cellular manufacturing? Explain the different types of machine cell designs. **07**
 (b) What are the objectives of FMS? Describe the various layouts used in FMS. **07**
- Q.4** (a) Sketch and explain cylindrical and SCARA configuration of industrial robot, showing work envelope. **07**
 (b) What are the different types of gripper used in robot? Explain any two in detail. **07**
- OR**
- Q.4** (a) Enlist and explain different elements of a robot. **07**
 (b) Which parameters are to be considered for robot specification and selection of robot? Explain in details. **07**
- Q.5** (a) Discuss the concept of CIM wheel and state potential benefits of CIM. **07**
 (b) Distinguish between variant and generative type CAPP stating their advantages. **07**
- OR**
- Q.5** (a) Explain MRP-I and MRP-II in detail. **07**
 (b) Explain in brief Programmable Logic Controllers **07**

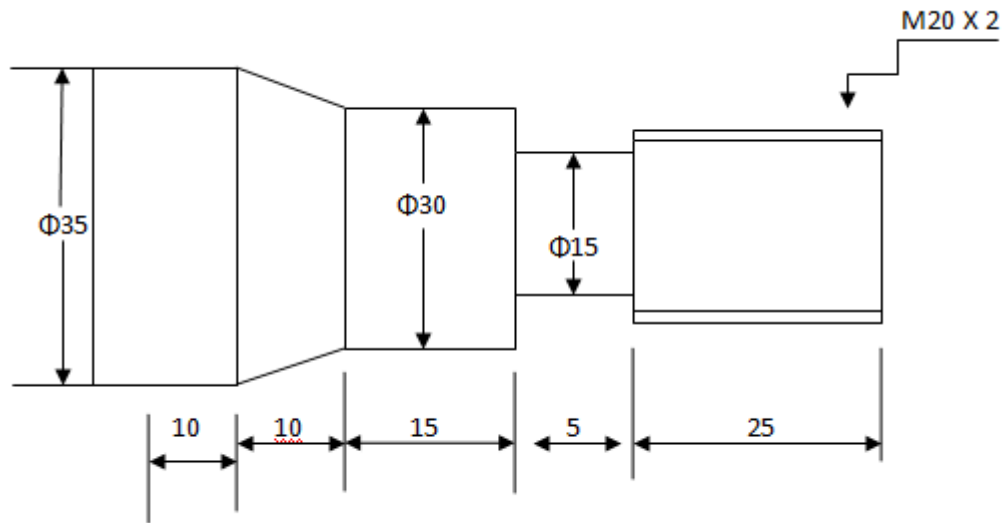


FIG. 1 (Q. No.3 (a))
