Seat No.: _____ Enrolment No._____

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 : (i) Type of feedback system (ii) Type of tool motion control	**07**
	(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. Raw material: MS Φ30 X 65 mm, cutting speed V= 40 m/min and feed=0.1 mm/rev	**07**
	(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**

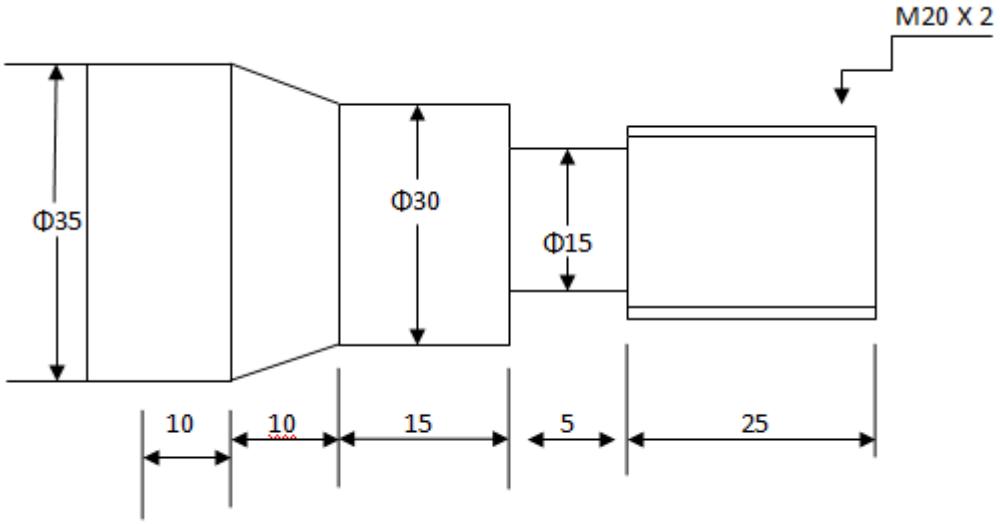

FIG. 1 (Q. No.3 (a))

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