Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 171903 **Date: 04/05/2017**

Subject Name: Computer Integrated 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 are the objectives of CIM? Which major functional areas of the manufacturing enterprise considered for achieving CIM objectives? What are the benefits of CIM?	**07**
	(b)	Differentiate NC/CNC/DNC. Give advantages of DNC.	**07**
Q.2	**(a)**	How the axes are designated in CNC m/c tools? Sketch and designate the axes of CNC vertical milling machine.	**07**
	(b)	Explain the linear and circular interpolations used in turning stating illustrations. Draw a neat sketch for circular interpolation without radius value also.	**07**
		OR	
	(b)	What is tool compensation? Explain tool length and cutter radius	**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)	Explain the feedback system of NC/CNC machines.	**07**
		OR	
Q.3	**(a)**	Write a CNC program using appropriate G and M code to turn component as shown in figure (2).Assume suitable data for speed, feed, and depth of cut.	**07**
	(b)	Explain MRP-I and MRP-II in Detail. ..	**07**
Q.4	**(a)**	What are the objectives of cellular manufacturing? Explain the different types of machine cell	**07**
	(b)	What is GT? Explain methods of grouping parts into part families in brief.	**07**
		OR	
Q.4	**(a)**	Which parameters are to be considered for robot specification and selection of robot? Explain in details.	**07**
	(b)	Enlist and explain different elements of a robot.	**07**
Q.5	**(a)**	Explain production flow analysis with suitable example.	**07**
	(b)	What are the objectives of FMS? Describe the various layouts used in FMS.	**07**
		OR	

Q.5 **(a)** Explain the role of CMM in Computer Aided Quality Control. What are different elements of a CMM? **07**

(b) What is an AGV? What are different types of AGVs? What are the benefits of using AGVs? **07**

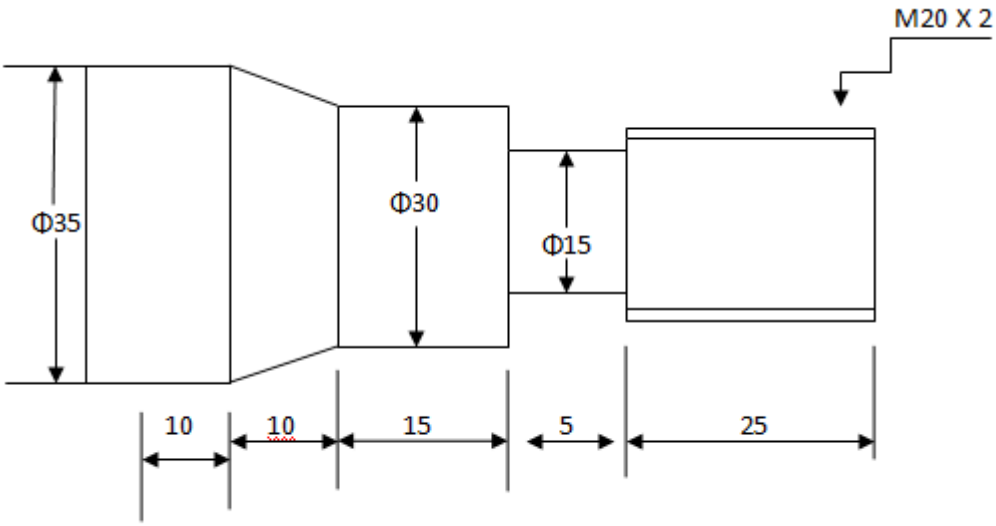

FIG. 1 (Q. No.3 (a))

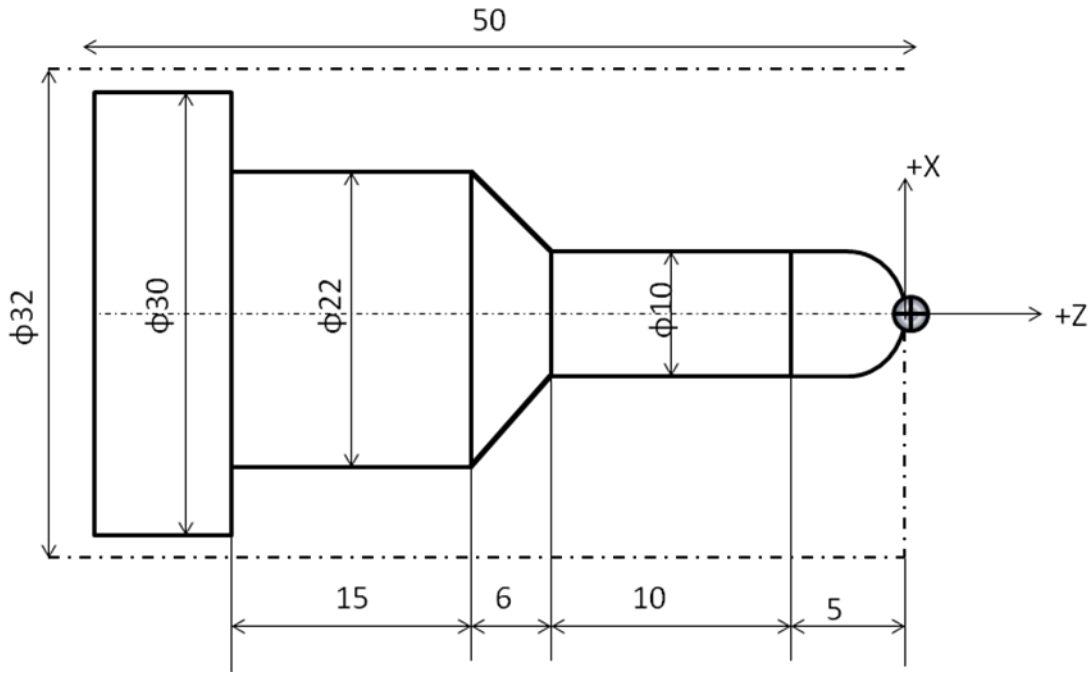

Fig.2(Q.No.3(a)) OR

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