Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2171903 **Date: 29/11/2018**

Subject Name: Computer Aided Manufacturing

Time: 10:30 AM TO 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.**

			MARKS
Q.1	**(a)**	Explain the benefits of Computer Aided Manufacturing.	**03**
	(b)	Clearly differentiate NC and CNC machines.	**04**
	(c)	Define the axes designation rules for CNC machines and explain the same for CNC Vertical machining center.	**07**
Q.2	**(a)**	Explain the open loop and close loop control system.	**03**
	(b)	Define the stick slip phenomena and explain the method to overcome it.	**04**
	(c)	Write a manual part program to prepare a job as shown in fig 1. The size of the raw material is Φ5.0 X 6.0 inches. All dimensions are in inches. Assume suitable tools and cutting parameter for the manufacturing of the job.	**07**

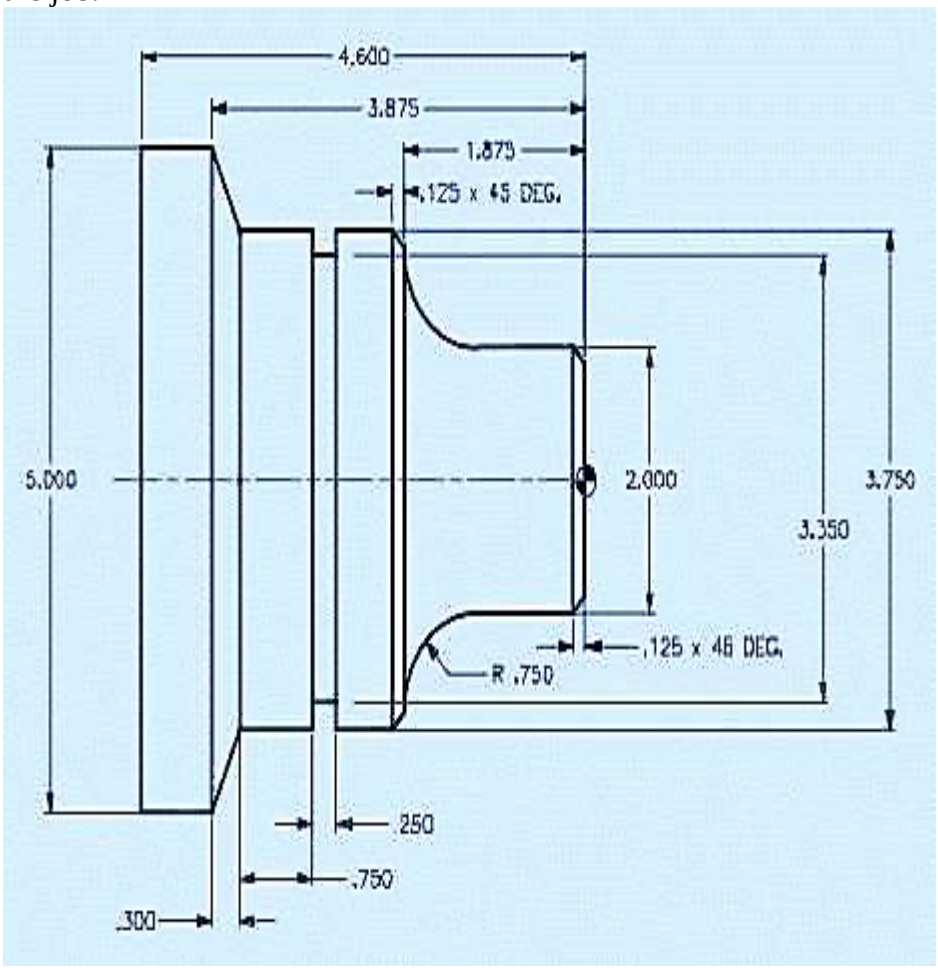

Fig. 1.

OR

(c) Write a manual part program for profile milling of the job as shown in fig 2. All dimensions are in mm. Assume suitable tools and cutting parameter for the manufacturing of the job. **07**

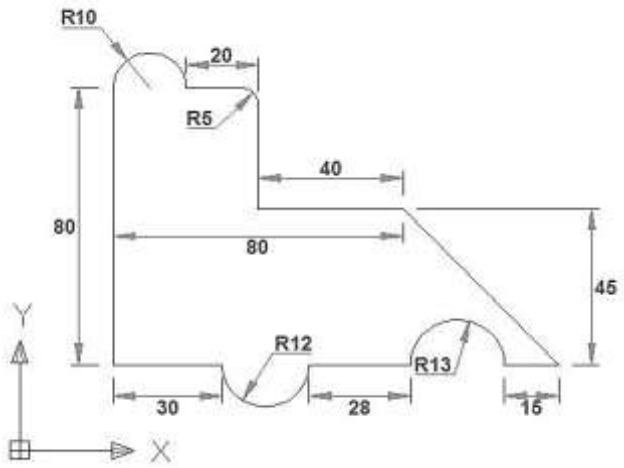

Fig. 2.

Q.3 **(a)** Explain the conditions in which GT can be applied. **03**
(b) Explain the retrieval type CAPP. **04**
(c) Explain the different types of flexibilities in FMS. **07**

OR

Q.3 **(a)** Explain the composite part concept with proper example. **03**
(b) Explain the Generative type CAPP. **04**
(c) Explain the FMS layout configurations. **07**
Q.4 **(a)** Explain the functions of the controllers in PLC. **03**
(b) Differentiate clearly between GT and FMS. **04**
(c) Summarize the features and applications of different material handling equipment. **07**

OR

Q.4 **(a)** According to level of flexibility define the FMS. **03**
(b) List the major parts of PLC and describe any two of them. **04**
(c) Explain the types of AS/RS and its applications. **07**
Q.5 **(a)** List the inputs to the material requirement planning and write the function of each. **03**
(b) Define JIT. How JIT can be applied to a service industries. **04**
(c) With a neat sketch classify different robot configurations. **07**

OR

Q.5 **(a)** Draw the types of joints used in robots. **03**
(b) List and in brief explain the systems involved Production Control. **04**
(c) Derive the expression for forward and backward transformation for a robot with three joints (RR: R) configuration. **07**

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