Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER –VIII • EXAMINATION – SUMMER-2017

Subject Code: 3385503   **Date: 06/ 05/2017**
Subject Name: Automation in Fabrication Technology
Time: 10:30 AM TO 01:00 PM   **Total Marks: 70**
Instructions:
1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

Q.1	(a)	Explain different types of automation with neat sketch.	07
	(b)	Explain advantages and limitations of automation in Indian industries.	07
Q.2	(a)	List different analogues sensors and explain any 3 with neat sketch.	07
	(b)	Explain components of PLC with neat sketch.	07
		OR	
	(b)	Compare NC/CNC/DNC machine tool.	07
Q.3	(a)	Analogue signal is 7.9 volts. Encode, using successive Approximation Method, the signal for a 6 bit register with a full scale range of 10 volts.	07
	(b)	A DAC has a reference voltage of 80 v and has 6-bit precision. Three successive sampling instances 0.5 sec apart have the following data in the data register.	07

INSTANCES   BINARY DATA
     1   111101
     2   111110
     3   111111

OR

Q.3	(a)	Explain briefly Computer Aided Welding Analysis (CAWA)	07
	(b)	Write brief note on software and hardware requirement of WELDCOST & WELDSPEC.	07
Q.4		Prepare part program for turning center for job shown in Fig.-1. Use canned cycle for roughing cut, finish cut and thread cutting. Assume suitable speed, feed, depth of cut and tool selection for each operation and write it.	14
		OR	
Q. 4	(a)	Explain different robot end effectors with neat sketch.	07
	(b)	List different robot configurations and explain any two with neat sketch.	07
Q.5		Prepare a part program for machining center job shown in Fig.-2. Assume suitable speed, feed, depth of cut and tool selection for each operation and write it.	14
		OR	
Q.5	(a)	Explain preview sensing robot weld joint tracking system with neat sketch.	07

(b) Explain different welding operation performed in automated welding.
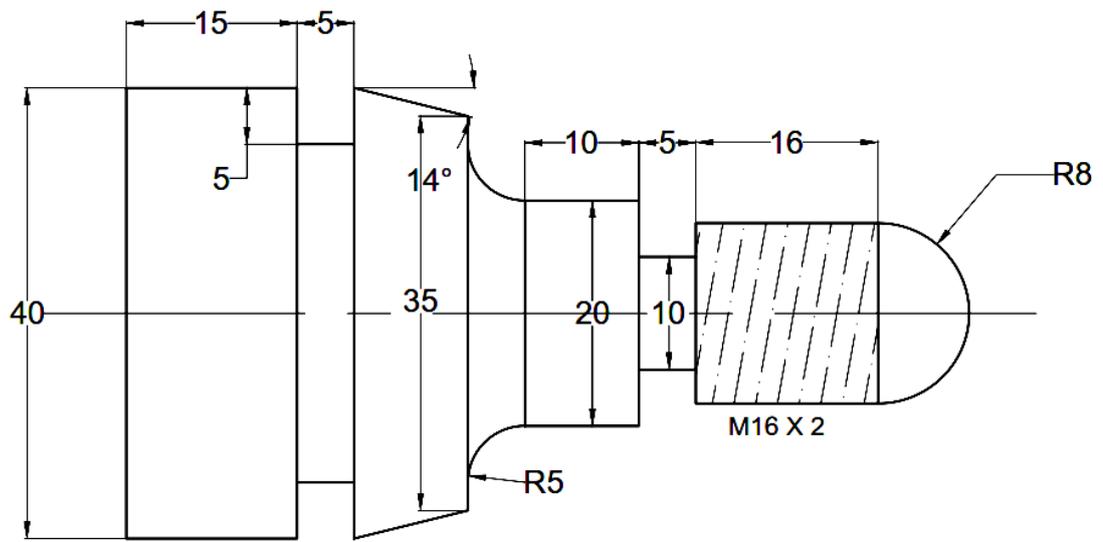
(ALL DIMENSIONS ARE IN MM.)
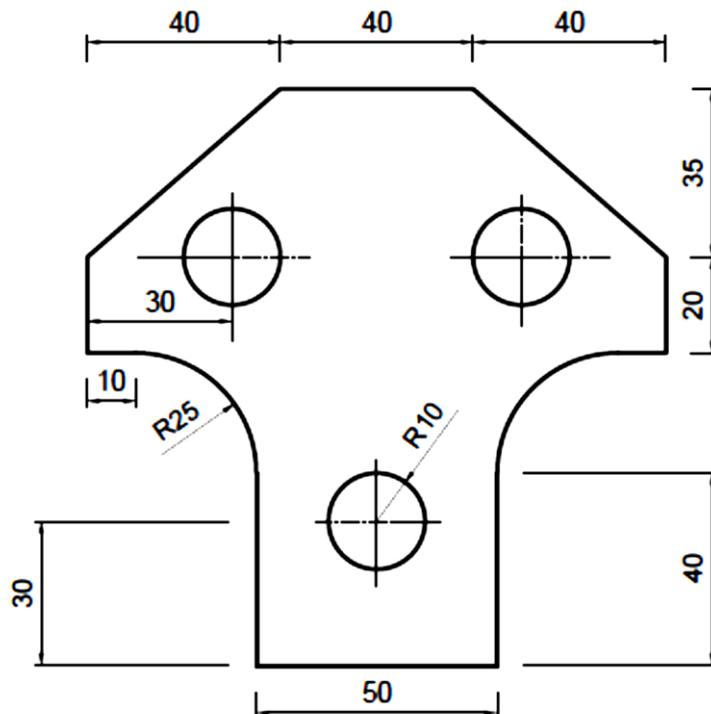Raw material = M.S. Round Bar 40 dia x 84 mm long
FIG.-1

Plate size 120 mm x 120 mm x 6 mm
All dimensions are in mm
FIG.-2