GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER –VIII • EXAMINATION – SUMMER-2015

Subject Code: 385504   **Date:13 / 05/2015**

Subject Name: Automation in Fabrication Technology

Time:10:30am to1:00pm   **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 basic element of Automation with neat sketch.	07
Q.2	(a)	List different analogues sensors and explain any 3 with neat sketch.	07
	(b)	Explain different types of interpolation methods used in CNC machine.	07

OR

	(b)	Explain briefly Computer Aided Welding analysis (CAWA)	07
Q.3	(a)	Analogue signal is 8 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 90 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   101100
2   101110
3   111101

OR

Q.3	(a)	Write brief note on software and hardware requirement of WELDVOL, CUTBEST, & WELDBEST.	07
	(b)	Define the term "Robot Programming". List different robot programming methods and explain any one with neat sketch.	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 and depth of cut for each operation and write it.	14

OR

Q. 4	(a)	Write description of following G-code and M-code. G00,G01,G02,G03,G04,G50,G91,G92,G40,G42,G80,G82,M03,M08	07
	(b)	Explain with neat sketch direct arc sensing robot with weld joint tracking system.	07
Q.5		Prepare a part program for machining center for drilling 9 holes in a job shown in Fig.-2. Assume suitable speed, feed, tool selection for each operation and write it.	14

OR

Q.5 (a) Explain with neat sketch on welding mechanization. 07
(b) Explain concept, advantages and limitations of automatic 07
welding.

Ø 60   Ø 35   M20x1 threads   Ø 20

R13

25   13   55   45   10
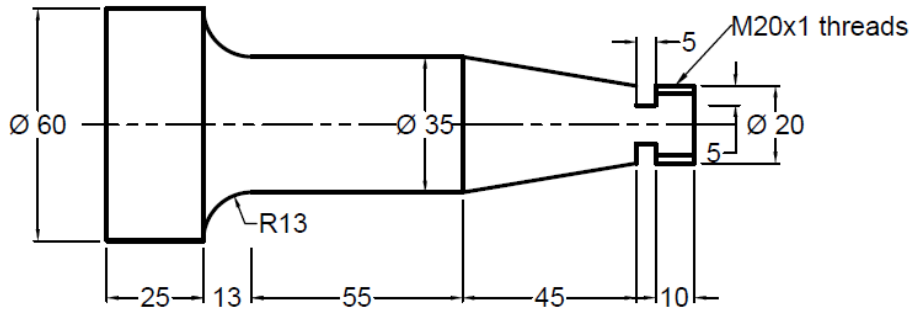
Raw material = M.S. Round Bar
Size = ø 60 x 153 mm long
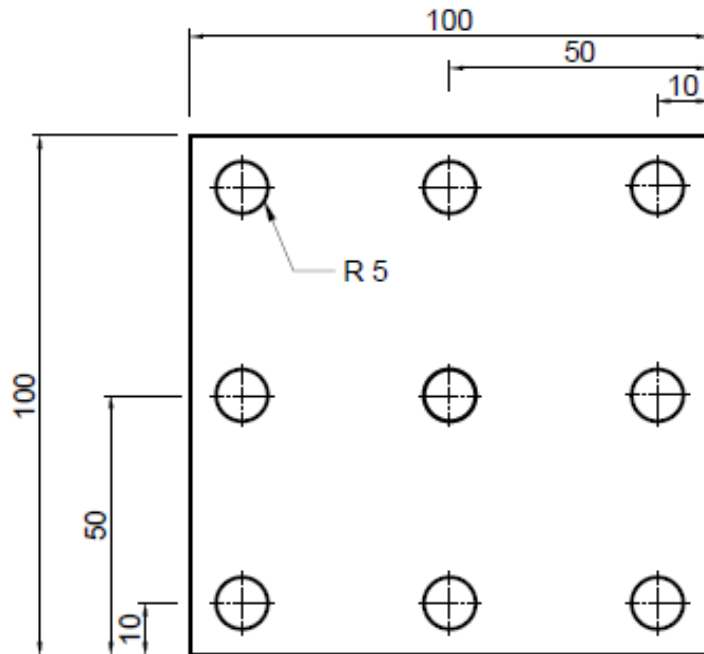All dimensions are in mm
FIG.-1

100
50
10

R 5

100
50
10

Plate size 100 mm x 100 mm x 6 mm
All dimensions are in mm
FIG.-2