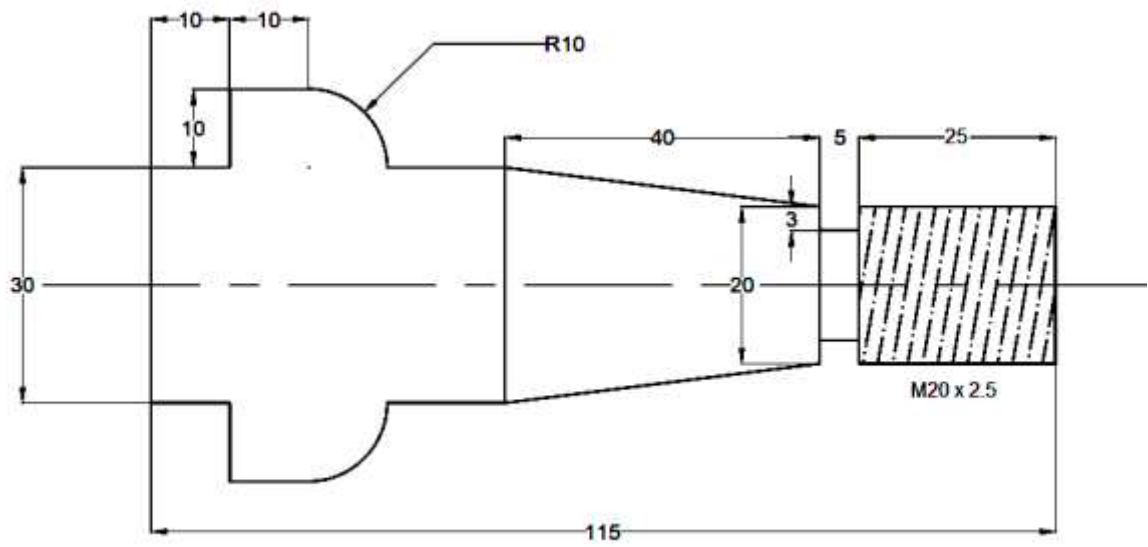


**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER – VIII • EXAMINATION – SUMMER 2016**

**Subject Code: 3385503****Date: 18/05/2016****Subject Name: Automation in Fabrication Technology****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.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1 (a) Explain THREE advance automation functions. 07  
 (b) Explain basic element of Automation with neat sketch. 07
- Q.2 (a) Write brief note on ADC with neat sketch. 07  
 (b) Explain different methods for NC part programming. 07
- OR
- (b) Explain adaptive control for machining centre. 07
- Q.3 (a) Analogue signal is 8.2 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. 07  
 Three successive sampling instances 0.5 sec apart have the following data in the data register.
- | INSTANCES | BINARY DATA |
|-----------|-------------|
| 1         | 101010      |
| 2         | 101110      |
| 3         | 110101      |
- OR
- Q.3 (a) Explain different problems affecting welding design and their solutions 07  
 (b) Explain briefly Computer Aided Welding design CAWD 07
- Q.4 Prepare part program for turning center for job shown in Fig.-1. 14  
 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.
- OR
- Q.4 (a) Write brief note on software and hardware requirement of WELDVOL, CUTBEST, & WELDBEST. 07  
 (b) Explain Polar and Cylindrical robot configurations with neat sketch. 07
- Q.5 Prepare a part program for machining center job shown in Fig.-2. 14  
 Assume suitable speed, feed, depth of cut and tool selection for each operation and write it.
- OR
- Q.5 (a) Explain robot weld joint tracking system. Explain different selection criteria for selecting robot weld joint tracking system. 07  
 (b) Explain with neat sketch on welding mechanization. 07



Raw material = M.S. Round Bar  
 Size =  $\phi$  60 x 115 mm long  
 All dimensions are in mm  
 FIG.-1

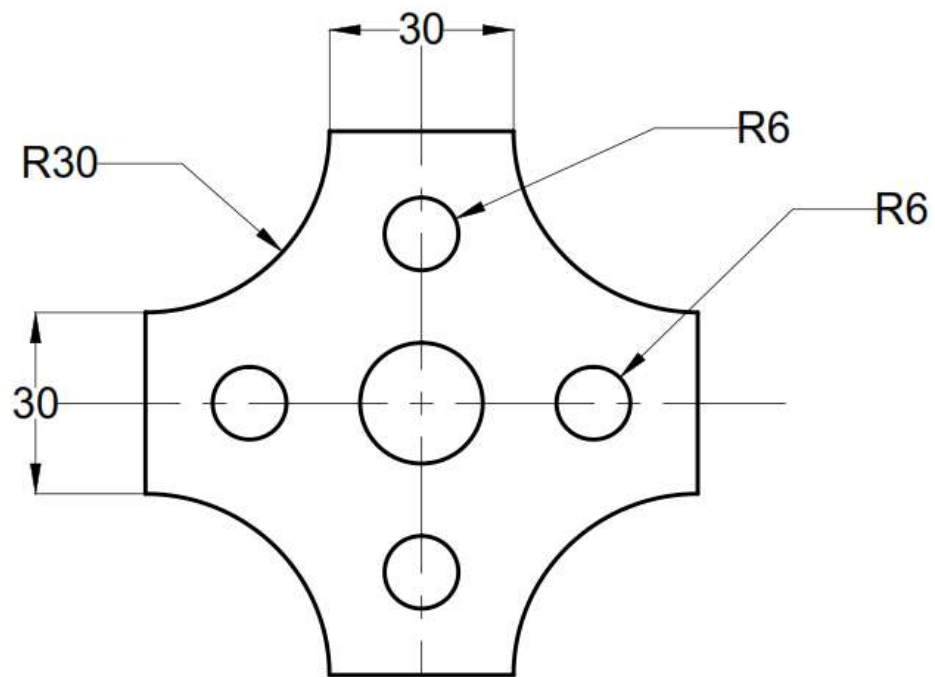


Plate size 90 mm x 90 mm x 6 mm  
 All dimensions are in mm  
 FIG.-2