

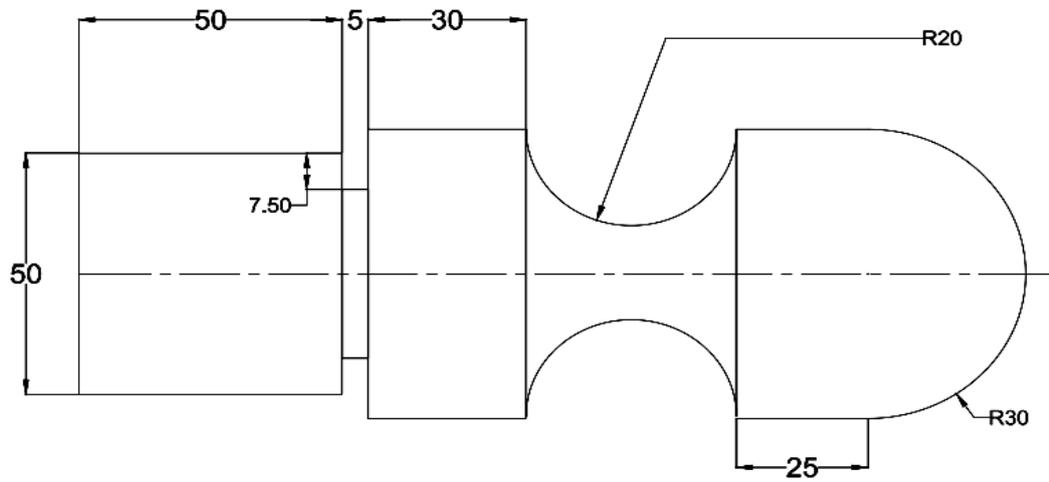
GUJARAT TECHNOLOGICAL UNIVERSITY**Diploma Engineering - SEMESTER-VIII • EXAMINATION – WINTER • 2016****Subject Code: 3385503****Date: 21-10-2016****Subject Name: Automation in Fabrication Technology****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

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. Draw a neat sketch whenever necessary
6. English version is authentic.

- Q.1 (a) Explain different types of automation with neat sketch. 07
 (b) Write definition of Automation. List different industrial area where automation can be implemented. 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) Explain DNC machine tool with neat sketch. 07
- Q.3 (a) Analogue signal is 8.6 volts. Encode, using successive Approximation Method, the signal for a 8 bit register with a full scale range of 10 volts. 07
 (b) A DAC has a reference voltage of 100V 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 | 001111 |
| 2 | 011110 |
| 3 | 111100 |
- OR
- Q.3 (a) Explain different problems affecting welding design and their solutions 07
 (b) Explain briefly thermal related problem in CAWA. 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) Write brief note on software and hardware requirement of SUPERWELDBEST & FERRITE PREDICTOR. 07
 (b) What is Robot manipulator, joint and link? Explain different types of robot joint 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 with neat sketch direct arc sensing robot with weld joint tracking system. 07
- (b) Explain concept, advantages and limitations of automatic welding. 07
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Raw material = M.S. Round Bar
 Size = ϕ 70 x 160 mm long
 All dimensions are in mm
 FIG.-1

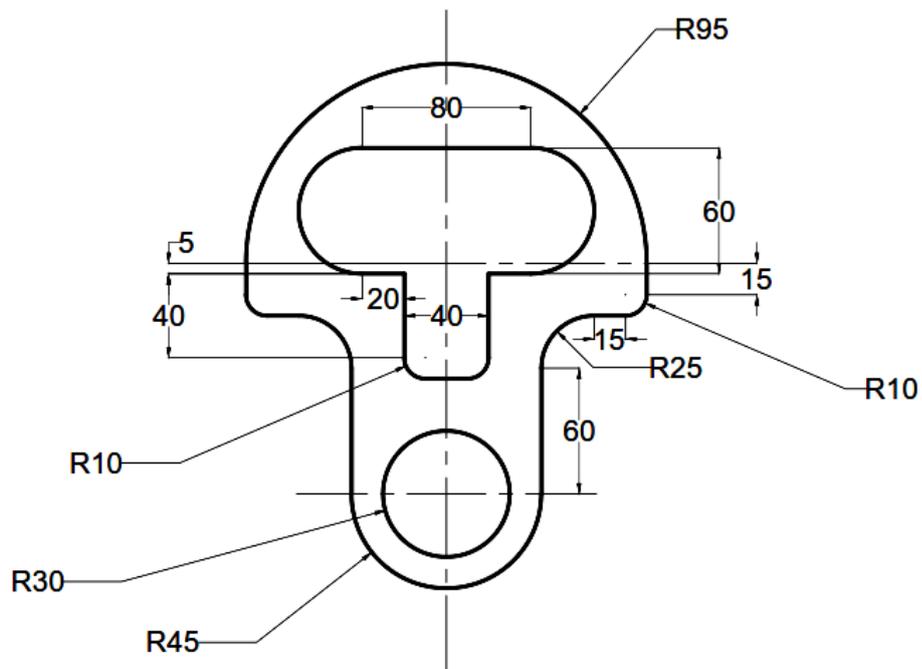


Plate size 250 mm x 190 mm x 6 mm
 All dimensions are in mm
 FIG.-2