

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 171903

Date: 26/11/2018

Subject Name: Computer Integrated 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.

- Q.1 (a) How we could justify the CIM to implement in the Indian companies? 07
(b) What are the basic components of CNC system? Briefly discuss each of them. 07
- Q.2 (a) Write a manual part program for the turning component shown in fig. 1. Raw material is MS $\Phi 45 \times 150$ mm, Spindle speed $S = 400$ RPM and Feed $F = 0.25$ mm/rev. 07

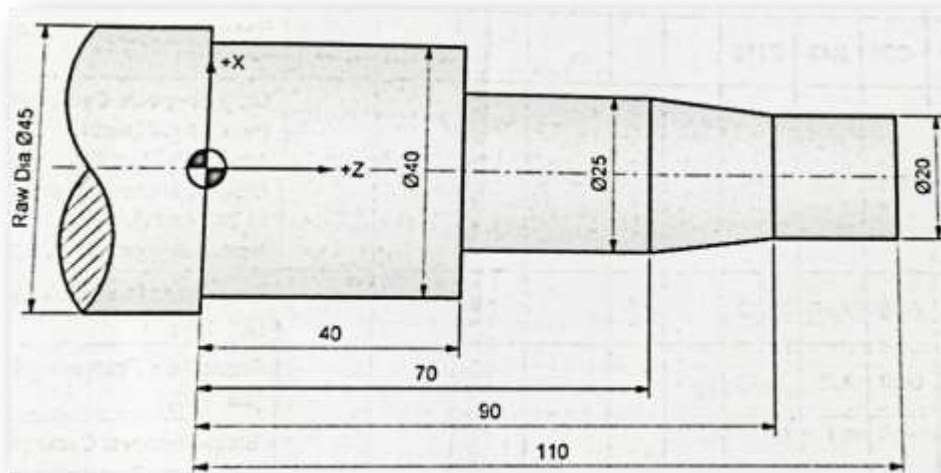


Figure 1

- (b) What is the difference between a canned cycle and subroutine? Discuss how a canned cycle can be useful in writing a part program. 07
- OR
- (b) What is tool compensation? Explain tool length and cutter radius compensation. 07
- Q.3 (a) What do you mean by FMS? Explain various FMS layouts for material handling system. 07
(b) What is advantage of group technology in manufacturing? 07
- OR
- Q.3 (a) How just in time (JIT) improves the manufacturing system? 07
(b) What is parts classification and coding? Explain any one parts classification and coding system. 07
- Q.4 (a) Which parameters should be considered before selecting the robot for manufacturing sector? 07
(b) Explain the types of flexibilities in FMS and discuss the factors on which these flexibilities depend 07
- OR
- Q.4 (a) Explain various sensors and actuators used in robots. 07
(b) What is an AGV? What are different types of AGVs? What are the benefits of using AGVs? 07

- Q.5 (a) Sketch and explain cylindrical and SCARA configuration of industrial robots. 07
(b) Explain the problems encountered with traditional production planning control (PPC). 07

OR

- Q.5 (a) Explain on-line and off-line programming methods of robots. State the application of robot. 07
(b) Explain with neat diagram generative type CAPP. 07

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