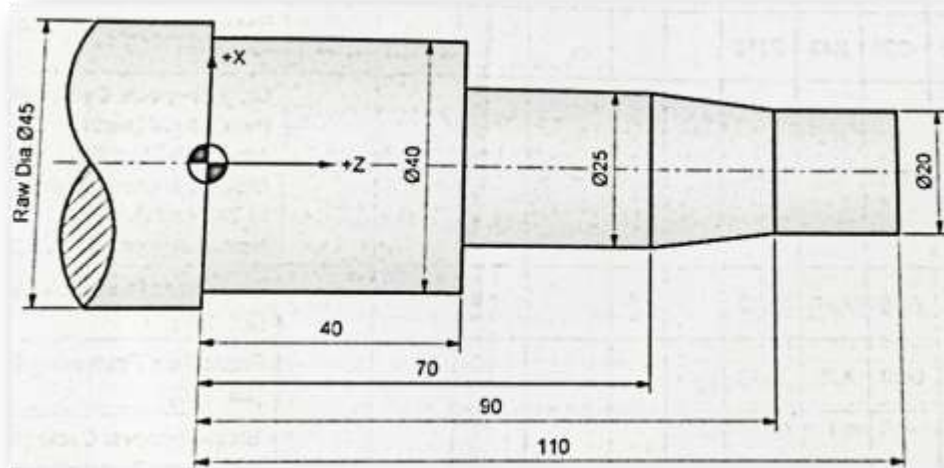


GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) EXAMINATION – WINTER 2018****Subject Code: 171903****Date: 26/11/2018****Subject Name: Computer Integrated Manufacturing****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

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**
