

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (OLD) EXAMINATION – SUMMER 2019****Subject Code: 171903****Date: 16/05/2019****Subject Name: Computer Integrated Manufacturing****Time: 02:30 PM TO 05:00 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) Compare CNC machines with conventional machines in regard to hardware used in them. **07**  
(b) What are part classification and coding requirements in GT ? Explain OPITZ's system of coding. **07**
- Q.2** (a) Which are the formats used for manual part programming? Explain word address format. Write word address format for milling and drilling operations. **07**  
(b) Explain canned cycle used for CNC programming with suitable example. **07**
- OR**
- (b) What are the auxiliary statements in APT language? Explain with suitable Examples any four auxiliary commands. **07**
- Q.3** (a) Explain in brief Economic Evaluation of investment in robotic Installation. **07**  
(b) Explain with neat diagram retrieval type of CAPP. **07**
- OR**
- Q.3** (a) Sketch SCARA robot and explain its degree of freedom and motion. **07**  
(b) What is CAPP? Differentiate variant and generative CAPP. **07**
- Q.4** (a) Explain Manufacturing Resource planning (MRP-II). **07**  
(b) Define FMS. Which are the components of FMS? Draw FMS layouts. **07**
- OR**
- Q.4** (a) What are the objectives of MRP system? State various inputs to MRP system. Draw an MRP structure. **07**  
(b) Explain with neat sketch AS/RS system used in FMS. **07**
- Q.5** (a) What are the objectives of CIM? Which major functional areas of the manufacturing enterprise considered for achieving CIM objectives? What are the benefits of CIM **07**  
(b) Explain the role of CMM in Computer Aided Quality Control. What are different elements of a CMM? **07**
- OR**
- Q.5** (a) State various compensations used in CNC machines. Explain tool length compensation with neat sketch. **07**  
(b) Define Group Technology (GT). State the main two hurdles in its implementation. Enlist various benefits of GT implementation in the industry. **07**

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