

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2172506****Date: 03/12/2018****Subject Name: Flexible Manufacturing System****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) Enlist the main principle objective of FMS. **03**
 (b) Enlist the various software and hardware utilized in FMS. **04**
 (c) Explain the need, Benefits and limitations of FMS in Industry. **07**
- Q.2** (a) Define the different reason for adopting Group Technology in FMS. **03**
 (b) Give the concept of Tool management. **04**
 (c) Explain automated work changer, tool changer, coolant, chip disposal and recovery system. **07**
- OR**
- (c) Explain major differences between Conventional Manufacturing Systems and FMS. **07**
- Q.3** (a) Why it is important to know when to change out a tool on an automatic machine? **03**
 (b) Explain unattended machining. Explain its concept which suitable in Indian industries in present scenario. **04**
 (c) State the factors that govern the selection of either batch or in-line Type wash stations. Explain any one wash station in detail. **07**
- OR**
- Q.3** (a) Define the term cell and explain single NC machine cell. **03**
 (b) Explain the limitation of general AGVs guide path. **04**
 (c) Explain the basic components & benefits of AS/RS system. **07**
- Q.4** (a) What are the importance of cleaning & deburring in automated manufacturing? **03**
 (b) Define CMM with its application and advantages in industry. **04**
 (c) Explain usefulness of automated material handling system. **07**
- OR**
- Q.4** (a) State the function of Machine Center Probe. **03**
 (b) Compare Horizontal and Vertical machine center with neat sketch. **04**
 (c) What geometrical features can be evaluated with coordinate measuring machine? Draw the schematic sketch and explain its working principle. **07**
- Q.5** (a) Classify different Industry Robots with its configuration. **03**
 (b) State the condition under which Tool sharing & Tool migration is Preferred. **04**
 (c) Explain pallet and part loading in Machining Centre. **07**
- OR**
- Q.5** (a) Give the concept of FMS Installation. **03**
 (b) Briefly explain tool monitoring and fault detection. **04**
 (c) Explain FMS implementation procedure with neat sketch. **07**
