

Code No: **RT41039****R13****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****AUTOMATION IN MANUFACTURING****(Mechanical Engineering)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B***\*\*\*\*\*****PART-A (22 Marks)**

1. a) What is a production system? [3]
- b) What is partial automation? [3]
- c) What are the three major categories used to accomplish assembly of components? [4]
- d) What is the primary objective of a guiding system? [4]
- e) What is the importance of modification function in adaptive control system? [4]
- f) What are the two categories of inspection? [4]

**PART-B (3x16 = 48 Marks)**

2. a) Differentiate fixed and programmable automation. [8]
- b) What are the principles of automation? [8]
3. a) What are the objectives of flow line automation? [8]
- b) What are the design and fabrication considerations in an automated flow lines. [8]
4. a) What are the methods used in industry to accomplish the assembly process? [8]
- b) What are the two ways in which transfer of workpart takes place between workstations? [8]
5. a) What are the principles of material handling system? [12]
- b) What are the components of AS/RS system? [4]
6. a) Explain the principle and structure of adaptive control. [12]
- b) What is the drawback of adaptive control with optimization? [4]
7. a) What is the inspection procedure followed? [8]
- b) What are the components of a basic CMM? [8]