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]