Code No: **RT41039** **R13** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February - 2019

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
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PART–A *(22 Marks)*

1. a) How mechanical feeding is replaced by automation? [3]
   b) How transfer line functions with storage? [4]
   c) What is the balance delay in line balancing problem? [3]
   d) What are the various material handling system used? [4]
   e) Write at least two important applications of adoptive control. [4]
   f) What is the inspection accuracy? [4]

PART–B *(3x16 = 48 Marks)*

2. a) What are the various situations where automation is preferred over manual labor? [8]
   b) Describe the pneumatic components used in an automation systems. [8]

3. a) What are the methods employed for workpart transport? [12]
   b) What is safety and quality monitoring in control function? [4]

4. a) Describe the Kilbridge and Wester method. [12]
   b) What are the ways of improving line balance? [4]

5. a) What are the types of AGVS's used in present automated system? [12]
   b) What is an interfacing handling? [4]

6. a) Describe the functional structure of adaptive control with optimization. [8]
   b) How does the cutting forces and temperature parameters are considered in adaptive control system? [8]

7. a) Identify the various applications where CMM become an important device? [8]
   b) How machine vision is capable to find the number of items, flaws, defects and position using visual inspection? [8]