Code No: 138AT

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, September - 2020
AUTOMATION IN MANUFACTURING
(Common to ME, MCT)

Time: 2 Hours   Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks
- - -

1.a) Define automation. Classify different types of automation and discuss the important reasons for automation
  b) Draw the simple block diagram of hydraulic circuit and discuss it briefly.   [8+7]

2.a) Discuss various types of automation strategies mentioning their importance.
  b) Differentiate between flexible automation and fixed automation and mention their advantages and laminations.   [8+7]

3.a) Explain the reasons for including a storage buffer in an automated production lines.
  b) What are the various system configurations developed in automatic production lines?[7+8]

4.a) With neat diagrams explain the functioning of various types of Transfer Mechanisms.
  b) Explain about the mechanical buffer storage control function.   [8+7]

5.a) Explain the following terms in line balancing
       i) Total work content   ii) Work station process time
  b) Discuss any four methods that should be considered by the designer of a flow line for improving the efficiency of the assembly line.   [8+7]

6.a) What are the various assembly systems used in practice and explain the advantages of manual single-stage assembly?
  b) Differentiate between Kilbridge and Wester's method and Ranked positional weights method of line balancing.   [8+7]

7.a) Explain the various sources of variability in adaptive control machining?
  b) What is an AGV? Classify different types of AGV's.   [8+7]

8.a) Define and discuss briefly about ERP.
  b) What is 3D printing? Explain its role in rapid prototyping?   [8+7]

---ooOoo---