

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Mechanical Engineering) (Sem.-7, 8)

**AUTOMATION IN MANUFACTURING**

Subject Code : BTME702-18

M.Code : 90475

Date of Examination : 19-05-2023

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a. List out the advantages of Adaptive control.
- b. Explain about flexible automation.
- c. Name three reasons for including a storage buffer in an automated production line.
- d. Name various types material handling equipment.
- e. Define adaptive control constraints.
- f. Differentiate between Fixed automation and Programmable automation.
- g. State the principal difference between adaptive control system and conventional closed loop control system.
- h. List out the components in Pneumatic system.
- i. What are the four basic components of nearly all automated storage/retrieval systems?
- j. What is a production system?

## SECTION-B

2. What is automation? Discuss various types of automation.
3. How does the cutting forces and temperature parameters are considered in adaptive control system?
4. What are the various situations where automation is preferred over manual labor?
5. List six basic components required in a hydraulic fluid system and state their essential functions.
6. Differentiate between ACO and ACC types of adaptive control.

## SECTION-C

7.
  - a. What are the different types automation? Discuss them briefly.
  - b. Discuss the reasons for implementation of automated systems in the manufacturing industries.
8. What do you mean by adaptive control? Explain its types with neat diagrams.
9. Elaborate the following in detail :
  - a. Rigid automation
  - b. Flexible automation
  - c. Plant capacity
  - d. Production rate.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**