

# CBCS SCHEME

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18IM821

## Eighth Semester B.E. Degree Examination, July/August 2022 Automation in Manufacturing

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. What is Production system? Explain briefly its two categories. (10 Marks)  
b. With a neat diagram, explain briefly the information processing cycle in a typical manufacturing firm. (10 Marks)

OR

- 2 a. Define automation. List the characteristics of each type of it. (10 Marks)  
b. Discuss briefly different costs incurred in manufacturing. (10 Marks)

### Module-2

- 3 a. List different methods of manual line balancing. Explain detailed procedure of any one of it. (10 Marks)  
b. Write a note on computerized line balancing methods. (10 Marks)

OR

- 4 a. List and explain the recommendations and principles that can be applied in product design to facilitate automated assembly. (10 Marks)  
b. Discuss briefly the classification of assembly systems based on physical configuration. (10 Marks)

### Module-3

- 5 a. Explain briefly the applications of AGVS in manufacturing system. (10 Marks)  
b. List and discuss the benefits derived from CAPP in manufacturing facility. (10 Marks)

OR

- 6 a. With neat sketches, explain type of joints commonly used in industrial robot construction. (10 Marks)  
b. Write short notes on: i) End effectors ii) Sensors in robotics. (10 Marks)

### Module-4

- 7 a. What is Machine vision? With neat diagram, explain its basic functions. (10 Marks)  
b. What is contact inspection? Discuss briefly the methods of contact inspection. (10 Marks)

OR

- 8 a. With a block diagram, explain briefly three phases in a shop floor control system. (10 Marks)  
b. Write a note on bar code technology used for automatic identification of parts. (10 Marks)

### Module-5

- 9 a. Explain in detail the basic principles of additive manufacturing. (10 Marks)  
b. List the advantages and disadvantages of additive manufacturing technology. (10 Marks)

OR

- 10 a. Discuss briefly different trends of future automated factory. (10 Marks)  
b. Discuss briefly the tasks of human workers in the future automated factory. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.