CBCS SCHEME

USN

17MT661

Sixth Semester B.E. Degree Examination, June/July 2023
Robotics and Automation

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Define automation. Explain the types of automation. (10 Marks)
b. Briefly explain various generation of robots. (10 Marks)

OR

2 a. Explain the different types of robotics. (10 Marks)
b. Briefly explain the interdisciplinary areas of robotics. (10 Marks)

Module-2

3 a. Explain the different robot drives systems (10 Marks)
b. Explain the components of hydraulic system. (10 Marks)

OR

4 a. Explain the functions of machine vision. (10 Marks)
b. Write short notes on fiber optic sensors and tactile sensors. (10 Marks)

Module-3

5 a. Define end effectors. Explain the types of end effectors. (10 Marks)
b. Explain various types of Gripper mechanism. (10 Marks)

OR

6 a. Explain the components of pneumatic control circuits. (10 Marks)
b. With a circuit diagram explain flow amplification control. (10 Marks)

Module-4

7 a. Briefly explain the elements of an automated system. (10 Marks)
b. Explain the different controllers used in automation. (10 Marks)

OR

8 a. Briefly explain safety in industrial automation. (10 Marks)
b. Briefly explain the difference between open loop and closed loop control system with examples. (10 Marks)

Module-5

9 a. Explain the various design consideration in material handling. (10 Marks)
b. Explain the various material transfer applications. (10 Marks)

OR

10 a. Define AGV's. Explain the types of AGV's. (10 Marks)
b. Write short notes on :
i) Unit load containers
ii) Industrial trucks. (10 Marks)

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