CBCS SCHEME

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15ME563

Fifth Semester B.E. Degree Examination, Aug./Sept. 2020
Automation & Robotics

Time: 3 hrs. Max. Marks: 80

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

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.

Module-1

1 a. Define Automation. Explain types of Automations. **(08 Marks)**
b. List & describe Automation principles and strategies. **(08 Marks)**

OR

2 a. Describe basic components of FMS. **(08 Marks)**
b. Explain different types of layouts of FMS. **(08 Marks)**

Module-2

3 a. Explain robot configurations with neat diagram. **(08 Marks)**
b. Explain various methods involved in programming the robot. **(08 Marks)**

OR

4 a. Describe technical features involved in the robots. **(08 Marks)**
b. With a neat sketch, briefly explain two end effectors. **(08 Marks)**

Module-3

5 a. Describe closed and open loop control system with examples. **(08 Marks)**
b. Explain PI, P, PID controllers with neat diagram. **(08 Marks)**

OR

6 a. Explain potentiometer and encoders. **(08 Marks)**
b. Describe actuators. **(08 Marks)**

Module-4

7 a. Explain the types of Robotic sensors. **(08 Marks)**
b. Describe about robot sensing. **(08 Marks)**

OR

8 Explain MVS with neat diagram. **(16 Marks)**

Module-5

9 a. Explain graph search technique with example. **(08 Marks)**
b. Explain the flow chart for ends analysis. **(08 Marks)**

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OR

10 a. What is AI? Differentiate with programming without AI and programming with AI. **(08 Marks)**
b. List and explain the application of AI. Differentiate between speech of voice recognition. **(08 Marks)**

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