

CBCS SCHEME

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15MT71

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019 Industrial Robotics

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain a brief history of Robotics. (08 Marks)
b. What is robot anatomy and explain its configuration? (08 Marks)

OR

- 2 a. Explain different types of Drive system used in robot. (08 Marks)
b. Explain the configuration of control system of a robotic joints with block diagram. (08 Marks)

Module-2

- 3 a. What are the types of sensor used in robot? Explain any two briefly. (08 Marks)
b. Define a transducer and discuss the features of touch sensor, force sensor and force sensing wrist with neat diagram. (08 Marks)

OR

- 4 a. Explain configuration of robot controller. (08 Marks)
b. Explain the factors to be considered for the selection of grippers. (08 Marks)

Module-3

- 5 a. Explain the functions of a machine vision system with neat diagram. (08 Marks)
b. Explain image processing and analysis. (08 Marks)

OR

- 6 a. Define artificial intelligence and discuss the goals of AI research. (08 Marks)
b. Explain the capabilities and limitations of lead through methods. (08 Marks)

Module-4

- 7 a. Explain Classification of Robot cell layout with neat sketch. (08 Marks)
b. Explain interlock in robot cell design. (08 Marks)

OR

- 8 a. Explain the factors considered in robot while handling materials. (08 Marks)
b. Explain any two loading and unloading applications of robot in production industries. (08 Marks)

Module-5

- 9 a. Explain briefly about the Spray coating robot and its benefits. (08 Marks)
b. Explain the features of the robot welding. (08 Marks)

OR

- 10 a. Explain any one configuration of assembly system with neat sketch. (08 Marks)
b. Explain :
i) Adaptable programmable assembly project
ii) Vision inspection system. (08 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.