



CBCS SCHEME

17MT71

Seventh Semester M.Tech. Degree Examination, Jan./Feb. 2021 Industrial Robotics

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define Robotics. Explain the components of Robotics. (10 Marks)
b. Explain the different types of Robot drive systems. (10 Marks)

OR

- 2 a. Explain the types of Robot programming. (10 Marks)
b. Explain the common configuration of robots with neat diagram. (10 Marks)

Module-2

- 3 a. Explain the desirable features of sensors. (10 Marks)
b. Develop kinematics using homogenous transformation for scaling, translation and rotation with example. (10 Marks)

OR

- 4 a. Briefly explain proximity and Range sensor used in Robotics. (10 Marks)
b. Briefly explain vacume Gripper and Transducers used in Robotics. (10 Marks)

Module-3

- 5 a. Explain the function of machine vision with neat diagram. (10 Marks)
b. Explain the steps involved in image processing and Analysis. (10 Marks)

OR

- 6 a. Explain briefly the Goals of AI research. (10 Marks)
b. Explain the capabilities and limitation of Lead through method. (10 Marks)

Module-4

- 7 a. With a neat sketch, explain the classification of Robot cell layout. (10 Marks)
b. Explain the factor considered in Robot while handling materials. (10 Marks)

OR

- 8 a. Briefly explain: i) Error deflection and Recovery ii) Robot cycle time analysis. (10 Marks)
b. Explain the loading and unloading applications of robot in production industries. (10 Marks)

Module-5

- 9 a. With a neat sketch, explain spot welding process and continuous arc welding. (10 Marks)
b. Explain any one configuration of assembly system with neat sketch. (10 Marks)

OR

- 10 a. Briefly explain different part presentation methods. (10 Marks)
b. Explain in detail about the Inspection Automation. (10 Marks)

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.