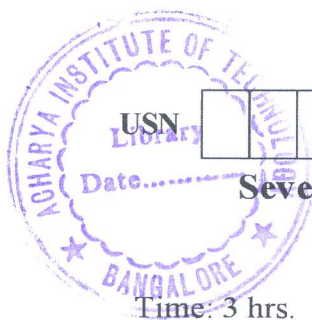


CBCS SCHEME



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15MT71

Seventh Semester B.E. Degree Examination, July/August 2021

Industrial Robotics

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. Define Automation. Explain different types of Automation. (08 Marks)
b. Write a short note on different drive systems used in Industrial Robots. (08 Marks)
- 2 a. With neat diagrams, explain common configurations of Robot. (12 Marks)
b. Define the following :
(i) Work volume (ii) Spatial Resolution
(iii) Accuracy (iv) Repeatability (04 Marks)
- 3 a. Explain D-H convention in Robot Kinematics. (08 Marks)
b. Explain configuration of Robot Controller. (08 Marks)
- 4 a. Describe different factors to be considered in Robot gripper selection and design. (08 Marks)
b. Differentiate Transducers and Sensors and explain Proximity sensor. (08 Marks)
- 5 a. With the help of neat block diagram, explain the steps in Machine Vision System. (08 Marks)
b. Describe the capabilities and limitations of lead though programming. (08 Marks)
- 6 a. Explain goals of Artificial Intelligences Research. (08 Marks)
b. Describe Robot Paradigms in Artificial Intelligence. (08 Marks)
- 7 a. Explain different Robot Cell layouts. (08 Marks)
b. Explain different factors considered in Robot Cell design. (08 Marks)
- 8 a. Write a short note on Interlocks and Robot Error detection and Recovery in Robot cell control. (08 Marks)
b. Describe general considerations In Robot material handling systems. (08 Marks)
- 9 a. Explain Robot spray coating. (08 Marks)
b. Describe the Advantages and Problems in Robot arc welding. (08 Marks)
- 10 a. Explain Assembly system configuration in Industrial Robots. (08 Marks)
b. Describe two assembly system configurations used in Industrial Robot. (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.