Reg. No. : | | | | | | | | | | |

Question Paper Code: 49508

B.E./B.Tech. DEGREE EXAMINATION, AUGUST 2021

Elective

Electronics and Instrumentation Engineering

14UEI908- ROBOTICS AND AUTOMATION

(Regulation 2014)

Duration: 1:45 hour Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. What is meant by degrees of freedom?
2. What is meant by gearing ratio?
3. Draw the functional blocks of machine vision system.
4. Define Robot manipulators.
5. Name various end-effectors of the robot that are used for industrial applications.
6. Give the basic types of robot programming languages.
7. Compare forward and reverse kinematics.
8. What are the methods of robot programming?
9. What is meant by assembly and its configuration?
10. What are the factors to be considered for selection of robot?
11. What are the types of drive systems used in robot?
12. What is meant by gearing ratio?
13. What do you mean by machine vision system?
14. Define Robot manipulators.
15. Name various end-effectors of the robot that are used for industrial applications.

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. Draw the block diagram of robotic system and explain the functions performed by every block of it. (10)

17. Explain the function of machine vision systems in robotics. (10)

18. Compare the function of electronics and pneumatic manipulator control circuits. (10)

19. Outline the concepts of Hill Climbing Techniques (10)

20. Discuss and detail about the robot computer interface and robot cell design (10)