

Reg. No. :

--	--	--	--	--	--	--	--	--	--

Question Paper Code: 59375

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

Open elective

Civil Engineering

15UEE975 -PRINCIPLES OF ROBOTICS

(Common to CSE, ECE, MECH, EIE , IT and Chemical Engineering)

(Regulation 2015)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. The Robot designed with Cartesian coordinate systems has CO1- R
2. Robot is derived from Czech word _____. CO1- R
3. The Horsepower of motor which has RPM and Torque is 3000 & 6 in-lbf respectively is _____. CO2- R
4. Define Fleming's left-hand rule CO2- R
5. Lead through methods referred to as _____ method. CO3- R
6. For a robot unit to be considered a functional industrial robot, typically, how many degrees of freedom would the robot have? CO3- R
7. _____ Kinematics will enable to determine where the Robot's hand will be if all joint variable are known. CO4- R
8. Define a sensor used in path determination robot CO4- R
9. Which of the following places would be LEAST likely to include operational robots? CO5- R
10. Automation with little human touch is known as CO5- R
11. Define Robotics. CO1- U
12. Analyze the difference between electronic and pneumatic manipulators. CO2- Ana
13. What is application of machine vision system? CO3- U
14. Distinguish Kinematics and Dynamics. CO4- U

15. Explain about path planning?

CO5- U

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

- | | | |
|--|--------|------|
| 16. Briefly describe the Robotic Systems with a neat sketch. | CO1- U | (10) |
| 17. Compare hydraulic, pneumatic and electrical drives. Sketch and explain pneumatic actuators. | CO2-U | (10) |
| 18. Explain about the different stages of machine vision system and its types of illumination systems. | CO3-U | (10) |
| 19. Illustrate in detail the forward and inverse problem of manipulator kinematics in robots. | CO4- U | (10) |
| 20. Discuss in details about Block Diagram of Robot control System & motion control. | CO5- U | (10) |

