A

1.   The Robot designed with Cartesian coordinate systems has   CO1- R

   (a) Three linear movements

   (b) Three rotational movements

   (c) Two linear and one rotational movement

   (d) Two rotational and one linear movement

2.   Robot is derived from Czech word _____.   CO1- R

   (a) Rabota   (b)Robota   (c) Rebota   (d) Ribota

3.   The Horsepower of motor which has RPM and Torque is 3000 & 6 in-lbf   CO2- R
     respectively is_____

    (a) 0.286   (b) 1.2   (c) 2800   (d) none of these

4.   In Fleming's left-hand rule the thumb points towards the direction of   CO2- R

   (a) Force   (b) Current   (c) Magnetic field   (d) Both a & b

5.   Lead through methods referred to as _____ method.   CO3- R

   (a) Tech by showing   (b) Learning   (c) Compliance   (d) Artificial intelligence

6.   For a robot unit to be considered a functional industrial robot, typically,   CO3- R
     how many degrees of freedom would the robot have?

   (a) three   (b) four   (c) six   (d) eight

7. _____ Kinematics will enable to determine where the Robot's hand will be if all joint variable are known. CO4- R

(a) Forward   (b) Reverse   (c) Inverse   (d) Transformation

8. A sensor used in path determination robot CO4- R

(a) ultrasonic sensor   (b) IR sensor   (c) proximity sensor Bits   (d) echo sensor

9. Which of the following places would be LEAST likely to include operational robots? CO5- R

(a) Warehouse   (b) Factory   (c) Hospitals   (d) Private homes

10. Automation with little human touch is known as CO5- R

(a) Automation   (b) Autonomation   (c) Semi worker   (d) Manual work

PART – B (5 x 2= 10 Marks)

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 – C (5 x 16= 80 Marks)

16. (a) Briefly describe the Robotic Systems with a neat sketch. CO1- U   (16)

Or

(b) Explain in details about the Degree of freedom with a neat sketch. CO1- U   (16)

17. (a) Compare hydraulic, pneumatic and electrical drives. Sketch and explain pneumatic actuators. CO2-U   (16)

Or

(b) Explain in details about DC PMMC motor and Brushless DC motor with a neat sketch CO2-U   (16)

18. (a) Explain about the different stages of machine vision system and its types of illumination systems. CO3-U   (16)

Or

(b) Discuss in detail about Proximity sensors and Touch sensors. CO3-U   (16)

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19. (a) Illustrate in detail the forward and inverse problem of CO4- U (16) manipulator kinematics in robots.

Or

(b) Explain about Jacobian in terms of D-H matrices in Robot CO4- U (16) Kinematics.

20. (a) Discuss in details about Block Diagram of Robot control System CO5- U (16) & motion control.

Or

(b) Explain in details about Force Control with a neat sketch. CO5- U (16)

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