

D. K. M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1**SEMESTER EXAMINATIONS****DECEMBER – 2022****POCCS3SS****SELF STUDY: ROBOTICS****Time: 2 Hours****Max. Marks: 50****Section - A (10 x 1 = 20)****Answer ALL questions.**

1. The laws of Robotics are:
 - a. A robot may not injure a human being
 - b. A robot must obey the order given by human except when conflict with the first law
 - c. A robot must protect its own existence except when conflict with the first law
 - d. Both b and c
2. The Robot designed with Cartesian coordinate systems has
 - a. Three linear movements
 - b. Three rotational movements
 - c. Two linear and one rotational movements
 - d. Two rotational and one linear movements
3. The study of motion without regard to forces is known as _____
 - a. Kinematics
 - b. Dynamics
 - c. Actuator
 - d. Sensor
4. What is the standard form of DOF?
 - a. Degree of Finance
 - b. Degree of Freedom
 - c. Degree of Fail
 - d. None of the above
5. Which one of the following generation robots are remote controlled?
 - a. First
 - b. Second
 - c. Third
 - d. None of the above
6. How many sections does robot manipulator consists of?
 - a. One
 - b. Two
 - c. Three
 - d. Four
7. The robots with the designation TRI are known as _____ robots.
 - a. Spherical
 - b. Articulated
 - c. Both a and b
 - d. None of the above
8. For a robot unit to be considered a functional industrial robot, typically, How many degree of freedom would the robot have?
 - a. three
 - b. four
 - c. six
 - d. eight
9. The number of moveable joints in the base, the arm, and the end effectors of the robot determines _____
 - a. degree of freedom
 - b. payload capacity
 - c. operational limits
 - d. flexibility
10. Which of the following terms refers to the rotational motion of a robot arm?
 - a. swivel
 - b. axle
 - c. retrograde
 - d. Roll

11. Robot is derived from Czech word
 - a. Rabota
 - b. Robota
 - c. Rebotas
 - d. Ribota
12. A Robot is a
 - a. Programmable
 - b. Multi functional manipulator
 - c. Both a and b
 - d. None of the above
13. Drives are also known as.
 - a. Actuators
 - b. Controller
 - c. Sensors
 - d. Manipulator
14. Clockwise or Anti clockwise rotation about the vertical axis to the perpendicular arm is provided through.
 - a. Shoulder swivel
 - b. Elbow extension
 - c. Arm sweep
 - d. Wrist bend
15. Which of the following work is done by General purpose robot?
 - a. Part picking
 - b. Welding
 - c. Spray painting
 - d. All the above
16. What is the name for information sent from robot sensors to robot controller?
 - a. Temperature
 - b. Pressure
 - c. Feedback
 - d. Signal
17. Which of the following terms is NOT one of the five parts of a robot?
 - a. Peripheral tools
 - b. End effectors
 - c. Controller
 - d. Drive
18. _____ sensor is an example for proximity sensor used in robots.
 - a. Micro switch
 - b. Ultrasonic
 - c. Touch and tactile
 - d. None of these
19. Jacobian matrix is.
 - a. Cannot be used to control a manipulator
 - b. Relates Cartesian velocity of a manipulator with its joint velocity
 - c. Cannot be used to check singularity of a manipulator
 - d. Is used to determine the joint torques and forces
20. The following measures are carried out by internal state sensor of the end effector.
 - a. Position
 - b. Position and Velocity
 - c. Velocity and Acceleration
 - d. Position, Velocity and Acceleration

Section - B (3 x 10 = 30)

Answer ALL questions.

21. Illustrate the Linear and Angular velocity of a Rigid body.
22. Conclude the Dynamic model of Two degree of freedom manipulator.
23. Demonstrate Cartesian Space technique with neat diagrams.

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