

Q.4 Industrial Robots are not intended for _____ coordinate system (s): (CO2)

- a) Cartesian b) Cylindrical
- c) Polar d) Pi-Lambda

Q.5 Which of the following sensor is best suited for obstacle avoidance: (CO4)

- a) Humidity b) Infrared
- c) MQ-3 d) Radio Frequency

Q.6 Which types of motors are commonly used in robots? (CO3)

- a) DC motor b) Stepper Motor
- c) Servo Motor d) All of the above

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 What is a solenoid? (CO3)

Q.8 Define degree of freedom? (CO1)

Q.9 What is an Arduino? (CO5)

Q.10 Describe a scoop gripper? (CO2)

Q.11 Robot is derived from Czech word _____. (CO1)

Q.12 Expand the acronym RIA. (CO1)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Write a note on laws of robotics? (CO1)

Q.14 Define an actuator and list four commonly used actuators in robots? (CO3)

Q.15 What is articulated configuration? Explain with example? (CO2)

Q.16 Compare magnetic and vacuum grippers? (CO2)

Q.17 Explain PWM method of speed control of a motor? (CO5)

Q.18 Enumerate four advantages and disadvantages of electric actuators? (CO3)

Q.19 List various factors to be considered while selecting an actuator? (CO1)

Q.20 Present a detailed overview of fluid power actuators? (CO3)

Q.21 Differentiate between AC motors and DC motors? (CO1)

Q.22 Write a program/flow chart for Arduino to reverse speed of a dc motor? (CO5)