



CBCS SCHEME

BMT358D

USN

Question Paper Version : A

Third Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024 Robotics Ecosystem

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

-
1. The term robot is derived from Czech word
a) Rabota b) Robota c) Rebota d) Ribota
 2. Who introduced (first) the word 'Robot'?
a) Issac Asimov b) Karel Capek
c) Issac Newton d) Robot Institute of America
 3. Robot is a
a) Reprogrammable b) Multi-functional c) Both (a) and (b) d) None of the above
 4. The main objective(s) of the robot is to
a) to minimize the labour requirement b) to increase productivity
c) to enhance the life of production machine d) all of the above.
 5. The first commercially available robot was marketed in _____
a) 1969 b) 1956 c) 1946 d) 1964
 6. Which one of the following robots are called 'spherical robot'.
a) Cartisian b) SCARA c) Cylindrical d) Polar
 7. The maximum number of DOF of a robot can have
a) two b) three c) six d) none of the these
 8. Work volume of Cartesian configuration robots is
a) Spherical b) Cylindrical c) Cuboidal d) Partial sphere
 9. Which type of motion the merits of the robot have
a) roll b) pitch c) your d) all of the these

10. Which one of the following robots with two prismatic joints?
a) Articulated b) Cartesian c) Cylindrical d) None
11. A robot must obey orders given by human beings except where such orders would conflict with a higher order law is eh which law of Asimov slow
a) First b) Second c) Third d) None
12. What is the name of the first programmable robot?
a) Unimate b) Stanform arm c) Doll d) None
13. The DOF associated with the arm and body motions are :
a) Vertical traverse b) Radial traverse c) Rotational traverse d) All of the these
14. The first programmable robot developed by
a) G.C. Devol b) Issac Newton c) Issac Asimore d) Karal Capek
15. Who coined the word 'Robotics'?
a) Robot institute of America b) Karel Capek
c) Issac Newton d) Issac Asimov
16. Which one of the following robots have three prismatic joints?
a) Spherical b) Cartesian c) Cylindrical d) Articulated
17. Which of the below is not used in precision of the robot?
a) Accuracy b) Revolution c) Repeatability d) Calibration
18. The number of independent movements a robot can realize with respect to its base is called
a) DOF b) Sensor c) Drives d) None
19. Which one of the following robot have two revolute joints?
a) Articulated b) Cylindrical c) Spherical d) None
20. The function of sensor used in robots are
a) to power the movement of robot b) to sense the environment of the robot
c) to provide control signals d) None of these
21. The sliding or linear joints are called
a) Prismatic joints b) revolute joints c) twisted joints d) rotational joints
22. Which one of the following robots have three revolute joints?
a) Cartesian b) Cylindrical c) Articulated d) Spherical
23. Robots which AI and ML technology is of which generation robots?
a) First b) Second c) Third d) Fourth
24. The technology connected with reducing human intervention in any process is called
a) Robotics b) Artificial intelligence
c) Automation d) Machine learning
25. The device that converts one dorm of energy to other is called
a) transducer b) emitter c) transmitter d) receiver

26. Robots with mechanical dolls and machines are of which generation robots?
a) First b) Second c) Third d) Fourth
27. What is the name for space inside which a robot unit operates
a) Environment b) Spatial base c) Work envelope d) Exclusion zone
28. What is the name for information sent from robot sensors to robot controllers
a) Temperature b) Feedback c) Pressure d) Signal
29. Robots called as autonomous robots are of which generation?
a) First b) Second c) Third d) Fourth
30. Robots called as smart robots with sensor are of which generation?
a) First b) Second c) Third d) Fourth
31. _____ “Laws” is Asimov’s first and most important law of robotics
a) Robots actions must never result in damage to the robot
b) Robots must follow the directions given by humans
c) Robots must never take actions harmful to humans
d) Robots must make business a greater profits
32. The degree of freedom representing linear motions along three perpendicular axes that specify the position of the body in space is
a) translations b) rotations c) both a and b d) none
33. Drives are also known as
a) actuators b) controller c) sensor d) manipulator
34. Which of the following terms is not one of the basic parts of robot
a) Drives b) controller c) end effectors d) peripheral tools
35. What is the purpose of laws of robotics?
a) To ensure that always serve mankind
b) To ensure that robots become our masters
c) To ensure that robots become sentient
d) To ensure that the military never gains control of robots.
36. The functions of links are
a) To carry the load applied
b) To provide relative motion
c) To change its shape to move the robot
d) To drive the system
37. Tactile sensors
a) Force sensors b) Position sensors c) Torque sensors d) Touch sensors
38. Internal state sensors are used for measuring – of the end effectors
a) Position
b) Position and velocity
c) Position and acceleration
d) Position, velocity and acceleration

39. The sensor used in ratio detection and ranging is
a) SONAR b) RADAR c) LASER d) INERTIALSENSOR
40. Proximity sensor are used to
a) Detect non-magnetic but conductive material
b) Measure strain
c) Measure distance
d) Measure temperature
41. Industrial robots are generally designed to carry which of the following co-ordinate systems?
a) Cartesian co-ordinate
b) Polar co-ordinate
c) Cylindrical co-ordinate
d) All of the above
42. The robots need sensors to
a) Collect information from the environment
b) Map environment attributes to quantitative measurements
c) Only option (a) is true
d) Both (a) and (b) are true
43. _____ term refers to the use of compressed gases to drive (power) the robot device
a) Hydraulic b) Pierzoelectric c) Photosensitive d) Pneumatic
44. _____ is correct for proximity sensors
a) Inductive type b) Capacitive
c) Ultra sonic wave type d) All of the above
45. The study of motion of the robot without regard to forces is known as
a) Dynamics b) Kinematics c) Sensors d) Actuators
46. What are the advantages of robots?
a) Don't need experience
b) Cost is less
c) Need a huge power supply
d) replaces human workers
47. Which one of the following joints comes under translational motion?
a) Orthogonal joint b) rotational joint c) twisting joint d) None
48. Which of the following robots is based on physical configuration?
a) SCRA b) Point to Point c) Controlled Path d) Continuous Path
49. Which of the following provides force for robot motion?
a) Kinematics b) Dynamics c) Actuators d) Sensors
50. In which stage the measurement system comes in contact with the measured or the quantity to be measured?
a) Transducer stage b) Signal processor stage
c) Output stage d) None of these

* * * * *