



# CBCS SCHEME

BMT358D

Question Paper Version : B

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.

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- 1 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 these
  - 2 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
  - 3 \_\_\_\_\_ term refers to the use of compressed gases to drive (power) the robot device  
a) Hydraulic  
b) Piezoelectric  
c) Photosensitive  
d) Pneumatic
  - 4 \_\_\_\_\_ is correct for proximity sensors  
a) Inductive type  
b) Capacitive  
c) Ultra sonic wave type  
d) All of these
  - 5 The study of motion of the robot without regard to forces is known as  
a) Dynamics  
b) Kinematics  
c) Sensors  
d) Actuators
  - 6 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

- 7 Which one of the following joints comes under translational motion?  
a) Orthogonal joint    b) rotational joint    c) twisting joint    d) None
- 8 Which of the following robots is based on physical configuration?  
a) SCRA    b) Point to Point    c) Controlled Path    d) Continuous Path
- 9 Which of the following provides force for robot motion?  
a) Kinematics    b) Dynamics    c) Actuators    d) Sensors
- 10 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 the these
- 11 \_\_\_\_\_ “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
- 12 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
- 13 Drives are also known as  
a) actuators    b) controller    c) sensor    d) manipulator
- 14 Which of the following terms is not one of the basic parts of robot  
a) Drives    b) controller    c) end effectors    d) peripheral tools
- 15 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.
- 16 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
- 17 Tactile sensors  
a) Force sensors    b) Position sensors    c) Torque sensors    d) Touch sensors
- 18 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
- 19 The sensor used in range detection and ranging is  
a) SONAR    b) RADAR    c) LASER    d) INERTIAL SENSOR



- 34 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.
- 35 The first commercially available robot was marketed in \_\_\_\_\_  
 a) 1969      b) 1956      c) 1946      d) 1964
- 36 Which one of the following robots are called 'spherical robot'.  
 a) Cartesian      b) SCARA      c) Cylindrical      d) Polar
- 37 The maximum number of DOF of a robot can have  
 a) two      b) three      c) six      d) none of these
- 38 Work volume of Cartesian configuration robots is  
 a) Spherical      b) Cylindrical      c) Cuboidal      d) Partial sphere
- 39 Which type of motion the merits of the robot have  
 a) roll      b) pitch      c) yaw      d) all of these
- 40 Which one of the following robots with two prismatic joints?  
 a) Articulated      b) Cartesian      c) Cylindrical      d) None
- 41 The sliding or linear joints are called  
 a) Prismatic joints      b) revolute joints      c) twisted joints      d) rotational joints
- 42 Which one of the following robots have three revolute joints?  
 a) Cartesian      b) Cylindrical      c) Articulated      d) Spherical
- 43 Robots which AI and ML technology is of which generation robots?  
 a) First      b) Second      c) Third      d) Fourth
- 44 The technology connected with reducing human intervention in any process is called  
 a) Robotics      b) Artificial intelligence  
 c) Automation      d) Machine learning
- 45 The device that converts one form of energy to other is called  
 a) transducer      b) emitter      c) transmitter      d) receiver
- 46 Robots with mechanical dolls and machines are of which generation robots?  
 a) First      b) Second      c) Third      d) Fourth
- 47 What is the name for space inside which a robot unit operates  
 a) Environment      b) Spatial base      c) Work envelope      d) Exclusion zone
- 48 What is the name for information sent from robot sensors to robot controllers  
 a) Temperature      b) Feedback      c) Pressure      d) Signal
- 49 Robots called as autonomous robots are of which generation?  
 a) First      b) Second      c) Third      d) Fourth
- 50 Robots called as smart robots with sensor are of which generation?  
 a) First      b) Second      c) Third      d) Fourth

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