

Robot Competition Phase 1
Question paper

Instructions

- Answer all the questions
 - Select the correct, or most appropriate answer and mark on the answer sheet
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1 The term "Robot" was first introduced by

- (a) Chales Babege (b) Isec Asimov
(c) Cark Capek (d) Joe Endelberger

2 Which company invented the robot "walking truck" in 1960s

- (a) General Electric (b) Stanford University
(c) Unimation Inc (d) Sony Company

3 Which is known as the world's first robot?

- (a) A turtle like robot (b) A remote control Robot
(d) The walking truck (b) A human like robot

4 What is name of the first robot developed for factory manufacturing process?

- (a) Tortoise (b) Unimate
(c) Handyman (d) Asimo

5 Which is the most difficult problem in space robotics?

- (a) Distance (b) Vision
(c) Ability to control (d) Time delay

6 Which is not a robot invented recently

- (a) Robot like a reptile (b) Robot which can climb walls
(c) fire fighting Robot (d) Robot like a human

7 Which of the followings is the most difficult problem for an outdoor mobile robot

- (a) Cope up with the rough ground (b) Stay stable
(c) Maintain the speed (d) Detect its current position

8 Which of the followings does not always happen when using robot in factories?

- (a) Manufacturing rate increases
(b) Manufacturing quality increases
(c) Manufacturing process become ordered
(d) Reduce the manufacturing cost

9. Which of the followings is not an area of robotics

- (a) automobile industry (b) fire fighting
(c) medical field (d) military

10 Mobile robots can know distance to obstacles using

- (a) a GPS (b) a camera
(c) infra-red sensor (d) a sonar sensor

11 A popular microprocessor family used in small mobile robots is

- (a) Atmega (b) Motorola
(c) PIC (d) Pentium

12 A mobile robot draws 2A average current at 12V to drive its motors, and 500mA at 6V for sensors and processor. The battery used in 12V, 4Ah. How long can the robot drive once charged

- (a) about 100minutes (b) about 2 hours
(c) about 1 hour (d) about 90 minutes

- 13 which one of the followings is not generally used in mobile robots
(a) DC motors (b) AC motors
(c) Stepper motors (d) Brushless motors
- 14 One of the most difficult things for a mobile robot to do is
(a) to understand nearby obstacles (b) to know its direction
(c) to know its position (d) to know its tilt
- 15 which of the following mobile platforms is best suited for a demining robot
(a) four leg platform (b) belt drive
(c) four wheel platform (d) three wheel platform
- 16 when a mobile robot wants to take a right turn. It should
(a) reduce the voltage to the right wheel
(b) turn the right wheel in opposite direction
(c) proportionally increase/decrease voltage to left/right motors
(d) stop right wheel for a short while
- 17 Transistors are used in robots for
(a) obstacle detection (b) collision detection
(c) decision making (d) speed control
- 18 Photodiodes are used in robots for
(a) speed sensing (b) current control
(c) speed control (d) direction control
- 19 Switches are used as a sensor in mobile robots for
(a) speed sensor (b) obstacle detection
(c) collision detection (d) none of the above
- 20 Which of these is not true about KISMET robot
(a) it can show facial expressions like humans
(b) it is a robot head similar to a human
(c) it is run by three processors
(d) it was built at MIT, USA
- 21 Which of the followings is not always true about robots
(a) robots can work faster and efficiently than humans
(b) robots can make production always more profitable
(c) to use robots in a factory needs advances technology
(d) robots can think and make decisions
- 22 In the near future, robotic systems will be comparatively more developed for
(a) welfare and rehabilitation (b) medical surgery
(c) entertainment (d) fire-fighting and rescue operations
- 23 Which of the followings is not a popular programming language for small robots
(a) Visual BASIC (b) PIC C
(c) PIC BASIC (d) Java
- 24 which is the best place to locate the center of gravity of a mobile three-wheel robot with two rear driving wheels
(a) mid point of the center line
(b) mid point of the driving wheel axel
(c) 2/3 distance from the front wheel along the center line
(d) 1/3 distance from the front wheel along the center line
- 25 how many independent motors are needed for a robot arm to be able to reach any position with any orientation, within the workspace
(a) 7 (b) 6
(c) 5 (d) 4