

What is a Robot?

A Robot is a machine programmable by a computer – capable of carrying out a complex series of actions automatically.

Robotics- It is the branch of science and engineering that deals with the design, construction, operation, and application of robots as well as computer systems for their control and information processing. Robots can be used in many situations and for lots of purposes, but today many are used in dangerous environments (including bomb detection and deactivation), manufacturing processes, or where humans cannot survive (e.g. in space, under water, in high heat, and clean up and control of hazardous materials and radiation.)



Types of Robots based on Application

1. Industrial Robots: These robots are often designed to perform dangerous as well as repetitive tasks that cannot be done by humans. An industrial robot is used for manufacturing and similar processes. These are most often fixed machines which are essentially mechanical arms. Jobs like welding, painting, packaging and labelling, product inspection and testing; all accomplished with high endurance, speed



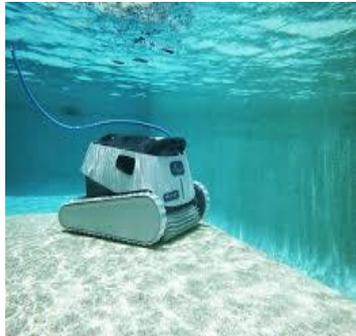
and precision.

2. Service Robots: These robots assist human beings, typically by performing a job that is dirty, dull, distant, dangerous or repetitive, including household chore like cleaning by using vacuum cleaners. Other applications are self driving cars, drones and surgeries.



Remember- In aviation and in space, a drone refers to an unpowered aircraft or spacecraft, drones are often used for military purposes because they don't put a pilot's life at risk in combat zones.

3. Agriculture Robots: As the demand increases, agriculture robots will become more incorporated into every aspect of agricultural activity. Using advanced sensors, these service robots will spray for weed control, harvest crop, plant seeds and trim existing plants and trees.



4. Domestic or household

Robots: These are robots used at home. These types of robots include many different devices such as robotic vacuum cleaners, robotic pool cleaners, sweepers, gutter cleaners and other.



Now, answer the following questions based on the above notes and explanation:-

Q.1. Select the correct option:-

1. It is the branch of science and engineering that deals with the design, constructions, operations and application of robots.

- a) Information Technology
- b) Robotics
- c) Computer Science

2. These types of robots are often designed to perform dangerous as well as repetitive tasks in industries that cannot be done by humans.

- a) Industrial Robots
- b) Service Robots
- c) Agricultural Robots
- d) Military Robots

Q.2. Fill in the blanks:-

- 1. _____ is a machine programmable by computer.
- 2. _____ is the branch of science and engineering that deals with the design, construction, operation and application of robots.
- 3. An _____ robot is a robot system used for manufacturing and similar processes.
- 4. _____ assist human beings typically by performing a job that is dirty, dull, distant, dangerous or repetitive.

Q.3. Answer the following questions-

- 1. What is robotics?
- 2. What do you call robots used at homes?
- 3. What kind of robots performs the job that is dirty, dull, dangerous or repetitive?
- 4. What is a drone?
- 5. Write about Industrial and Agriculture Robots.

Homework- Read the notes given in the worksheet and do the questions neatly in your notebook.

Answers

Worksheet -1 Subject: - Computer Class: - VI Teacher: - Mrs. Suudha Sharma
Lesson 3: Robotics and Artificial Intelligence

Q.1. Select the correct option:-

1. b) Robotics
2. a) Industrial Robots

Q.2. Fill in the blanks:-

1. Robot
2. Robotics
3. Industrial
4. Service

Q.3. Answer the following questions-

1. **Robotics-** It is the branch of science and engineering that deals with the design, construction, operation, and application of robots as well as computer systems for their control and information processing.
2. Domestic or household robots are used at home.
3. Service Robots performs the job that is dirty, dull, dangerous or repetitive.
4. In aviation and in space, a drone refers to an unpowered aircraft or spacecraft, drones are often used for military purposes because they don't put a pilot's life at risk in combat zones.
5. **Industrial Robots:** These robots are often designed to perform dangerous as well as repetitive tasks that cannot be done by humans. An industrial robot is used for manufacturing and similar processes. These are most often fixed machines which are essentially mechanical arms. Jobs like welding, painting, packaging and labelling, product inspection and testing; all accomplished with high endurance, speed and precision.
Agriculture Robots: As the demand increases, agriculture robots will become more incorporated into every aspect of agricultural activity. Using advanced sensors, these service robots will spray for weed control, harvest crop, plant seeds and trim existing plants and trees.