**What is a robot?**

* machines that can sense, think, and act.
* real-life examples (e.g., vacuum robots, factory robots, humanoid robots).

**Key Parts of a Robot**:

* **Sensors**: To gather information from the environment (e.g., cameras, touch sensors).
* **Brain** (Microcontroller): The part that processes the information (mention simple controllers like Arduino).
* **Actuators**: The parts that make the robot move or do things (e.g., motors, wheels, arms).
* **Power Sourc e**: Explain how robots need energy (battery or power supply).

**Input-Process-Output Model**:

* Introduce the concept of how robots work:
  + **Input**: Robot senses its environment using sensors.
  + **Process**: The robot’s brain processes the information.
  + **Output**: The robot performs an action (like moving).

**Types of Robots**:

* **Industrial Robots**: Used in factories for tasks like welding or assembling.
* **Service Robots**: Like vacuum robots or drones.
* **Humanoid Robots**: Robots that look and move like humans.

**Types of Programming used**

* Basic Programming – Blockly / Scratch
* Advanced Programming – ROS / Rust

**Robotics Quiz**

**1. What is a robot?**  
a) A type of computer  
b) A machine that can sense, think, and act  
c) A toy that moves by itself  
d) An electric car

**2. Which part of a robot is like its brain?**  
a) Sensor  
b) Battery  
c) Microcontroller  
d) Motor

**3. What do sensors in a robot do?**  
a) Move the robot  
b) Give energy to the robot  
c) Help the robot detect its surroundings  
d) Store programs for the robot

**4. What are the wheels or motors of a robot called?**  
a) Sensors  
b) Actuators  
c) Controllers  
d) Cameras

**5. Which of the following is NOT an example of a robot?**  
a) Mars Rover  
b) Robot vacuum cleaner  
c) Washing machine  
d) Factory assembly robot

**6. What does "autonomous" mean when describing a robot?**  
a) Controlled by a human using a remote  
b) Powered by a battery  
c) Able to move and make decisions on its own  
d) A robot with wheels

**7. Which of the following is a common use of robots in factories?**  
a) Making food  
b) Lifting heavy objects and assembling parts  
c) Driving cars  
d) Cleaning windows

**8. What powers most robots?**  
a) Solar energy  
b) Batteries  
c) Fuel  
d) Wind

**9. What is the term for the programming or instructions that tell a robot what to do?**  
a) Sensors  
b) Code  
c) Motors  
d) Wires

**10. Can robots work in space?**  
a) Yes  
b) No  
c) Only with human help  
d) Only on Earth

b) A machine that can sense, think, and act

c) Microcontroller

c) Help the robot detect its surroundings

b) Actuators

c) Washing machine

c) Able to move and make decisions on its own

b) Lifting heavy objects and assembling parts

b) Batteries

b) Code

a) Yes