



Robotics

1. What is Robot?

- Introduction of Robot
- Types of Robot
- Future of Robot

2. Applications of Robotics.

- Industrial applications
- Domestic applications
- Commercial applications

3. Basic of electronics (Explain Practically)

- Resistor
- Capacitor
- Relay
- Switches
- Diode
- Voltage Regulators

4. Microprocessor & Microcontroller

- Difference between Microprocessor and Microcontroller
- Applications of Microprocessor and Microcontroller.

5. Fundamentals of Arduino.

- Introduction to Arduino Hardware
- Pin description
- Input and output ports
- Introduction of Arduino IDE Software
- Programming
- Basic structure and commands
- Function and variables
- Conditional and controlled instructions
- Arithmetic and logical instructions
- Example program LED blinking



6. Sensor interfacing.

- Introduction to sensors
- Different types of sensors
- Ultrasonic sensor
- Infrared sensor
- Passive infrared sensor
- LDR Sensor

7. Motors and Actuators interfacing.

- DC motor
- DC gear motor
- Stepper motor
- Servo motor

8. What is Tinker CAD used for?

- Introduction to Tinker Cad

9. What is Circuit block?

- Create new project.
- How to pick and place components
- Connection of components.
- How to write coding.
- Simulation.

10. Projects Covered

- LED Blinking
- LED Control with Push Button
- RGB LED Control
- Distance calculator
- Numeric Display with 7 segments
- Hello Word print on LCD
- Automatic Parking System
- Fire Detection System
- Visitor Counter