Explorer robot (23/7/19)

**Introduction:**

A robotic arm based remote controlled car, with probes to explore important laws of electrical and magnetism.

**Parts:**

1. Robotic arm consists of various probe attachments like:

|  |  |  |
| --- | --- | --- |
| No. | Attachment | Use |
|  | UM66 with buzzer | (to check conductivity) conductors/insulators and humidity |
|  | Wire wound Cu coil as electromagnetic probe | Magnetic and non magnetic materials |
|  | Drill motor probe | to drill |

1. Wheels:

Two types of wheels:

1. Normal wheel
2. Caterpillar wheels
3. Headlights:

Pair of headlights (LEDs), activated by light sensitive LDR/IR sensor.

1. Remote:

Wire connected remote to regulate the movement of the robot.

Can use DPDT switch for the purpose.

Movements:

1. Forward
2. Backward
3. Left
4. Right
5. Arm lift
6. Arm down

Working:

Forward Lift

Left Right

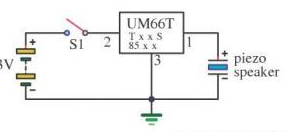
Reverse Drop

**Wheel Motor movement Arm motor movement**

**Components:**

**Probes:**

1. Electromagnet probe:
2. 21-24 gauges insulated Cu wire.
3. Iron nail/ rod for core 8cm long



1. 9V battery
2. Conductor probe:
3. UM66t IC
4. Piezo speaker/buzzer
5. Drill probe:
6. Toy motor
7. Screw (to resemble drill bit)

**Headlight:**

1. 2 xLEDs
2. 1x LDR or IR sensor

**Remote:**

1. 3x DPDT switches (2 for wheel motors and 1 for arm)
2. Connecting wire for switch with respective motors

**Wheels:**

1. 4x Normal or caterpillar car/robot wheels
2. 5x BO motors (4 for car base and 1 for Arm)