

AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY



Department of EEE

Assignment

COURSE NO : EEE 2211
COURSE NAME : Measurement and Instrumentation.

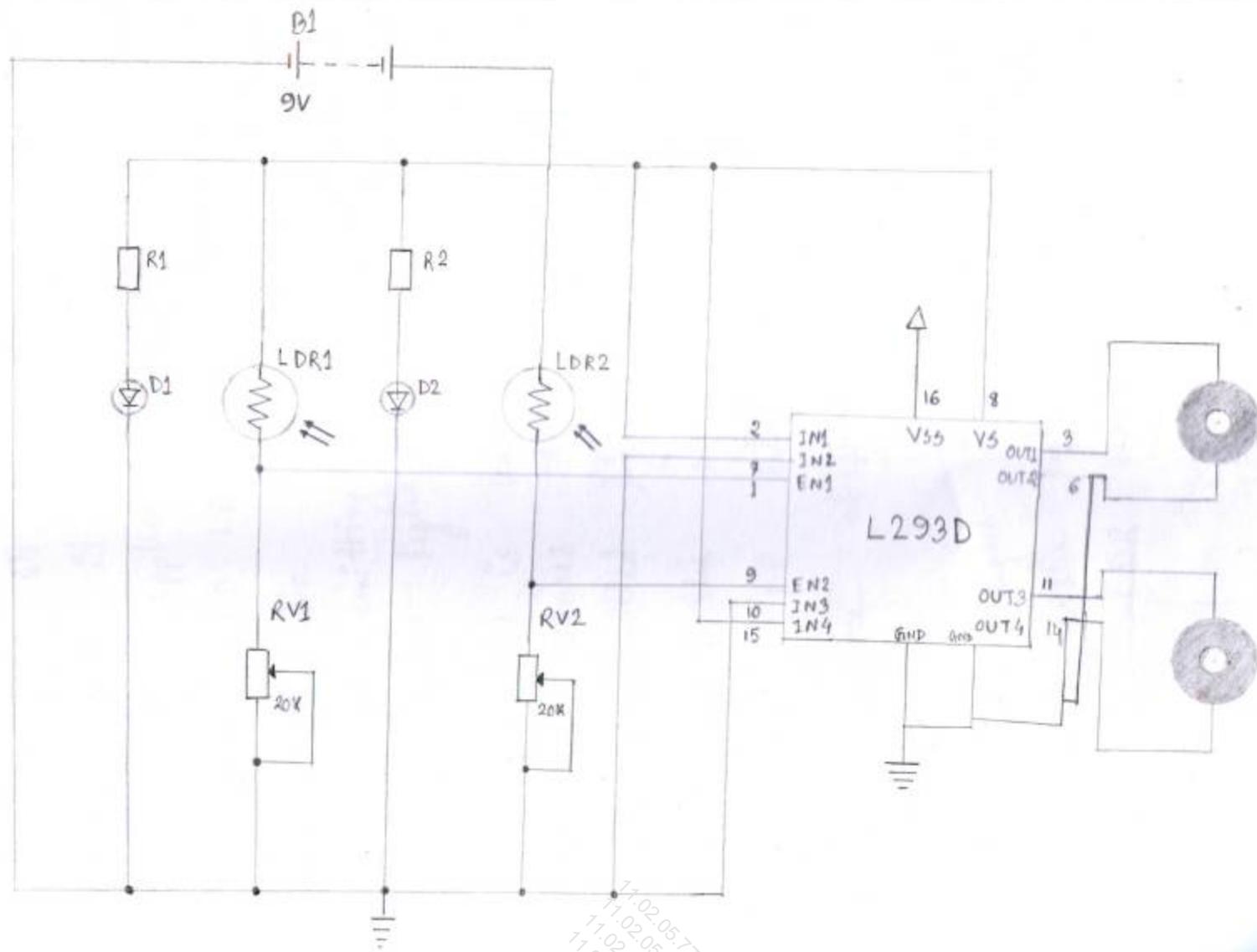
MAZE SOLVER ROBOT

Date of submission : 20-07-2013

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Submitted By :-

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Figure 5: Circuit Diagramme

Working Principle:

We know, when light falls on white surface, it gets reflected. This concept is completely applied here. The sensor module has two LED-LDR sensor pair mounted on here. We used two sensor here.

The light emitting diode (LED) is a semi-conductor light source. Light dependent resistor (LDR) is used here as a light sensor. It senses the reflected light. Light transmitted by the LED and reflect on the surface. If the surface is white, LDR detects the light where black surface absorbs all the light.

When the light is reflected by LED, LDR senses the light and the internal resistance of LDR becomes very low and that is why the current flows at a high rate and the motor starts to run. IC (L293D) is used where which worked as both motor driver and current amplifier. To run the motor we need huge

current flow, which has done by this IC. When there is no wall, which means when the surface is black, the light is not reflected. So, the internal resistance of LDR become very high and the current can't flow. So, the motors stop. For better performance we placed the two sensors on the two sides of the robot.

Troubleshoot:

1. Before ^{constructing} this circuit, we constructed another circuit and got some problems in switching. For this we changed that circuit and constructed this circuit.

2. To avoid the loose connection of wires we used jumper wires.

3. We faced some problems about the positioning of LDR. For that we placed the LDR in front of the wheel.

4. For the surrounding light the motor is running automatically without the walls. For this we covered the LED and LDR with black tape.

5. When we drove the robot for testing, we saw that it moved with oscillation which we did not expect.

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