



**CSARC**  
COMPUTER SCIENCE &  
ROBOTICS CERTIFICATION

Certification in LEGO® Robotics for Learners

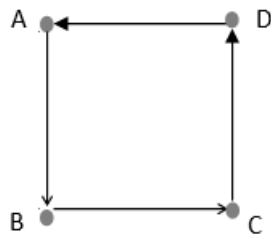
Sample Test

Using the LEGO® Mindstorms EV3 or SPIKE Prime set, construct a basic 2-wheel drive robot. You will use the same robot for the next few questions, so make sure that your robot is build in a way that is able to turn and does not fall apart during movement.

You will be graded on the following pointers:

- Robot Stability – Is robot shaky or has parts that are loose?
- Robot Structure – Can the robot move properly without slanting to one side?
- Robot Connections – Are the connections of the robot secure or correct?

1. Program your robot to move in a square motion path on the floor as shown in the diagram below.



You will be graded on the following pointers:

- Program Logic – Does the program make sense or work?
- Program Neatness – Does the program have unnecessary blocks?



2. Mount 1 light/colour sensor on your robot car. Program your robot car to perform 1 light/colour sensor line-tracing. The robot must be able to trace a continuous black line on the playfield provided.
  
3. Mount 2 light/colour sensors on your robot car. Program your robot car to perform 2 light/colour sensors line-tracing. The robot must be able to trace a continuous black line on the playfield provided.

You will be graded on the following pointers:

- Sensor Height – Is it mounted too high/low to detect the line properly?
- Sensor Location – Are the sensors too close/far from each other or from the wheels?
- Sensor Stability – Are the sensors slanted or shaky and not secure?
- Program Logic – Does the program make sense or work?
- Program Neatness – Does the program have unnecessary blocks?

