CSARC
COMPUTER SCIENCE &
ROBOTICS CERTIFICATION

CERTIFICATION IN LEGO Robotics

FOR LEARNERS

Sample Questions

(For reference only, score composition for various questions and sections may vary.)

Total Time: 2 hours
Total Score: 25

Answer ALL questions in pen.

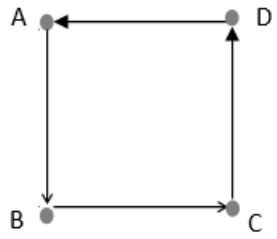
Section B: Practical Task 1 (Grade 1)

1. Using the LEGO® 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: [2]

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

2. 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: [2]

   Program Logic – Does the program make sense or work?

   Program Neatness – Does the program have unnecessary blocks?

3. Mount 1 colour sensor on your robot. Program your robot to perform line-tracing on a continuous black line on the playfield provided. [2]

4. Mount 1 distance sensor on your robot. Program your robot to do the following:
   a. When distance detected < 20cm, move forward
   b. When distance detected ≥ 20cm, stop

- End of Paper -

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