**Phase 1 Score Rubrics**

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| --- | --- |
| Assessment Criteria | Score |
| Quality of UGV | 50 |
| Quiz (3 questions on UGV) | 30 |
| F1 Timing | 10 |
| Maze Clearing Timing | 10 |
| Autonomous Maze Clearing Capability | Bonus marks will be awarded |

**Marking rubrics on Quality of UGV**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Poor | Average | Good |
| Creativity (15 marks) | Build is poor  (1 – 5 marks) | Build is generally good with some mistakes  (6 – 10 marks) | Proper shape design with enhancement to UGV performance  (11 – 15 marks) |
| Tidiness & Workmanship (15 marks) | Wires are messy and contacts are left exposed  (1 – 5 marks) | Wires are not at risk of shorting. Mediocre attempt at wire organization  (6 – 10 marks) | Neat wiring with properly insulated solder joints  (11 – 15 marks) |
| Performance (20 marks) | UGV is immobilized  RFID not working  (1 – 5 marks) | UGV can maneuver. Minor faults present.  Retrieve and display data from RFID cards accurately.  (6 – 15 marks) | UGV can maneuver at full speed with no malfunctions. Retrieve and display data from RFID cards accurately.  (16 – 20 marks) |

**Marking rubrics on F1 & Maze Clearing**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Poor | Average | Good |
| F1 Race(10 Marks) | Bottom 30%  (1 – 3 marks) | Middle 40%  (4 – 7 marks) | Top 30%  (7 – 10 marks) |
| Maze(10 Marks) | Car completed less than half the maze and/or went out of boundary repeatedly. Needed repetitive assistance to guide car back on track.  (1-3 marks) | Car completed half the maze and/or went out of the boundary several times. Needed some guidance to guide car back on track.  (4 –7 marks) | Car completed the entire maze from Start to Finish. Stayed within boundary with little or no help.  (8 – 10 marks) |

For maze, every checkpoint missed a penalty of 10seconds will be added.