SLRC 2017 Gameplay and Rules Highlights

Gameplay

1) Mobile robot is **not allowed to touch cubes** in line maze section.
2) When a cube is detected, the mobile robot must signal the stationary robot the color of the cube and the stationary robot is **then and only then**, is allowed to shoot a ball in to the corresponding box having the same color as the cube.
3) The mobile robot is **not allowed to move** after detecting a cube, until the stationary robot shoots a corresponding ball.
4) During line maze solving, if a robot deviates from a line and fails to return within 20 seconds then human intervention would be allowed and **a restart must be taken**.
5) There will be a red dashed line 35cm away from the wall which the robot **should not cross**. Penalties will be given, each time the robot crosses this line, **if a robot keeps crossing line for more than 5 seconds then human intervention would be allowed, and a restart must be taken.**
6) The robot is not allowed to make any contact to the wall segments. Penalties will be given, each time the robot touches the wall, if **a robot keeps touching the wall for more than 5 seconds then human intervention would be allowed, and a restart must be taken.**
7) The stationary robot **must be stable, without any external forces**. Robots not fulfilling these criteria will be disqualified.
8) The ball shooter can store multiple balls or balls can be fed to the shooter manually during the game time. Feeding balls refers to placing the ball in some part of the robot or dropping the ball into some part of the robot. Players cannot push, or press the ball into the robot, with force, during the game-play. **Pushing or pressing the ball into the robot with force will result in penalties**. Manual loading of mechanisms in stationary robot during game-play is not permitted. However, teams can continue to do so, with a penalty for each time manual loading is done. (An example scenario for manual loading is pressing the ball into the shooter, in a way which compresses the spring which shoots the ball)
9) Only one member can feed balls to the stationary robot**. Time will not be paused** for loading balls.
10) Players cannot manually alter the orientation of the stationary robot during the game-play. Players are not allowed to communicate with the stationary robot by any means

(i.e. button presses, radio communication, optical communication). These actions will result in **immediate disqualification**.

11) **Maximum of two shooting chances** will be given for a cube and three chances will be given for the randomly placed target (Target Area 2). **Most successful attempt** will be considered for marks.
12) Any robot should not split into two or more units.
13) The starting procedure of the robot should be simple and should not involve giving the robot **any manual force or impulse in any direction**.
14) No damage should be made by a robot to the arena during the match in any manner.
15) All robots should be submitted before entering event hall after checking dimensions.
16) Robots should not be disassembled until the results are declared.
17) The organizers reserve the right to change the rules as they deem fit.
18) When a team is called for match, they must report within five minutes. If a team fails to do so will be disqualified.
19) Judges' decision will be the final.
20) A total time of **20 minutes** will be allocated for a team.
    a) A team can take **any time from this 20 minutes** for Stationary robot calibration and Color calibration
    b) The positions of cubes on the arena (Not the total count) will be changed after calibration.
21) Teams can take up to **3 Restarts within given 20 minutes**. You will be forced to take a restart on conditions mentioned in 4,5,6 or you can choose to take a restart as you wish. You can choose starting position up to last passed checkpoint and marks will be rested accordingly.
22) Timer will not be paused during restarts.

Checkpoints

If a robot fails to complete the task, the robot can be re-started from the last completed checkpoint. Available checkpoints are:

1) Starting Position
2) First Checkpoint: - At the beginning of wall following
3) Second Checkpoint: - At the end of wall following

Judging

1. The judges can ask for an explanation of any mechanism on the bot and there would be an immediate disqualification of defaulters of any kind.
2. Bot's code will be checked for hard coding upon request of judges.

3. Points are provided on the following merit:
   i) Detecting Cubes and Shooting (for each cube)
      (1) Detecting the cube — +5 points
      (2) Stationary robot targeting at the correct color target — +5 points
      (3) Shooting and hitting the target box but fails to successfully shoot in to the target — +5 points (total 15 points)
      (4) Successfully shoot in to the target — +10 points (total 25 points)
   ii) Detecting and shooting the randomly placed target
      (1) Targeting correctly at the box — +25 points
      (2) Shooting and hitting the target box but fails to successfully shoot in to the target — +10 points (total 35 points)
      (3) successfully shoot in to the target — +20 points (total 45 points)
   iii) Complete Line maze — +20 points
   iv) Complete Wall following — +20 points

4. Penalties
   i) Touching cubes in line maze — -5 points
   ii) Each touching of the wall during wall following (penalty) — -5 points
   iii) Each crossing of red line — -5 points
   iv) Manual loading of balls (Pushing or pressing the ball into the robot with force) (each time) — -5 points

5. Time bonus
   (1200 seconds – time taken to complete the task in seconds)/10 points
   Time bonus will be given only if you complete the task with maximum of one unsuccessful shooting.

6. Total score will be the addition of above three scores.
7. Team with maximum points will win the round.
8. **Judging criteria might be subject to changes, final judging criteria will be given on the competition day.**