Blaze Maze

Welcome to the Blaze Maze Challenge, where innovation meets firefighting prowess! In this competition, we aim to harness the power of autonomous firefighting robots. These robots are designed to tackle fires independently, navigating through mazes and extinguishing flames swiftly and efficiently. The primary goal is to promote creativity and expertise in the development of autonomous firefighting technology.

1.

Prizes and Awards

1st – Rs 15,000
2nd – Rs 10,000
3rd – Rs 5,000

2. Team Rules :

2.1 Team members :

- **2.1.1)** Maximum number of members in a team should be 3.
- **2.1.2)** Every team must have a team leader.

2.2 Requirement :

- **2.2.1)** Team must carry their respective laptop and required tools.

3. Robot Specifications :

3.1 Size and Weight :

- **3.1.1)** Robots must not exceed 20cm*20cm*25cm(L*B*H) in size to ensure compatibility with the competition arena. Approximation for error (±5%).

3.2 Sensor :

- **3.2.1)** Robots may use flame sensors to detect fire and other sensors for navigating through the arena.

3.3 Power Source :

- **3.3.1)** Robots must be powered by onboard batteries.
- **3.3.2)** The maximum battery voltage should not exceed 12V.

3.4 The height of the simulated fire is a maximum of 7cm.

3.5 Programming :

- **3.5.1)** Teams must submit their code after the round, code will be evaluated by the judges and the most efficient code will be rewarded.

3.6 General :

- **3.6.1)** The robot must be autonomous.
- **3.6.2)** The robot must be able to navigate through the arena and identify the fire and extinguish it.
- **3.6.3)** Each robot must be equipped with a fire suppression mechanism capable of delivering firefighting agents, the only suitable method is water discharge.
- **3.6.4)** Once the competition starts, no further programming or adjustments to the robot's software will be allowed.
- **3.6.5)** In-Game Communication Block: Any communication or signal interference by teams to disrupt or influence other competitors' robots is strictly prohibited.

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4. Gameplay Specification :

4.1 Arena Setup :

- 4.1.1) The competition arena consists of defined paths, multiple fire zones, and obstacles to challenge the robots' navigation abilities.

4.2 Multiple Teams :

- 4.2.1) Two or more teams will compete simultaneously in the arena.

4.3 Start Zone :

- **4.3.1)** All robots begin from a designated start zone within the maze.

4.4 Winner Determination :

- **4.4.1)** The fastest robot successfully extinguishing all flames wins.

4.5 Out of Arena Handling :

- **4.5.1)** Robots going out of bounds will be stopped and reset to the start zone.

4.6 Scoring :

- **4.6.1)** Primary scoring is based on the time taken.
- **4.6.2)** Secondary criteria may include innovation or efficiency in the case of a tie.

5. Competition Rounds :

5.1 Round Types :

- **5.1.1)** The competition will consist of two rounds, each increasing in complexity to challenge the participants' skills.

5.2 Time limits :

- **5.2.1)** Teams have five minutes for their robots to navigate, recognize, and extinguish flames.

5.3 Round Progression :

- **5.3.1)** Only the winners of first round on DAY 1 will be allowed to perform in round 2 on DAY 2.

6. Disqualifications and Penalties :

6.1 Disqualifications :

- **6.1.1)** Robots will be disqualified/penalised if they damage the arena at any point in the competition.

6.2 Penalties :

- **6.2.1)** Each time robot clashes with an obstacle or leaves the arena it will be given a time penalty.
- **6.2.2)** If the robot battery dies in between rounds, teams can change batteries, but they will be given a time penalty on overall time.

7. Safety :

7.1 Inspection :

- **7.1.1)** All robots must undergo a thorough safety inspection conducted by event organizers before the competition begins.

7.2 Damage :

- **7.2.1)** The organizer is not responsible for damage caused to vehicles during the competition.

8. Code of Conduct :

- **8.1)** Participants must always display sportsmanship and respectful behaviour.
- **8.2)** Unsportsmanlike conduct may result in disqualification.

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9. Conclusions :

9.1 Updates and Communication :

- **9.1.1)** Any updates, rule modifications, or clarifications will be communicated to all participating teams well in advance of the competition.
- **9.1.2)** The organizer is allowed to change the rules before the competition.

9.2 Feedback :

- **9.2.1)** Constructive feedback from participants will be actively sought to improve future editions of the competition.

(*Note: - This image is for reference purpose only actual format will be varied.)

Note : The rules outlined in this rulebook are subject to change. Any modifications or updates to the rules will be communicated to all participating members before the start of the event.