



# SHETTY INSTITUTE OF TECHNOLOGY

Shahabad Road, Kalaburagi, Karnataka 585-105

<b>Location</b>	Arena
<b>Robo Race</b>	
2 Rounds	Qualifier and Finale
Per team	10 minutes
Max teams (team of 4): 15	4 hours
Prize	Point based (in the case of ties, time based)
Jury	Internal

## • Event Overview:

Design a manually controlled ROBOT that has the capacity to cover maximum distance in the shortest possible time, challenging the hurdles and being one of the best opponents. Think your robot can overcome any obstacle- big or minor in the least time. If so, get it on the track and let the game begin. And bear in mind that maximizing RPM does. The way you enter, the way you proceed, and the way you reveal your speed to others beings here at the enthralling event of “Robo-Race”. It is the event where you get to test the efficiency, power, and skills of your droid/robot. Race your bots to the finish line and earn accolades.

## 📌 1. Event Structure

- **Qualifiers (Pre-Rounds)** – No elimination
- **Knockout Rounds**
- **Finale** – Top 4 teams compete

## 👥 2. Team Composition

- Each team can have **2 to 4 members**
- Only **2 members** are allowed inside the arena as **robot handlers**



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- Remaining members must stay outside the competition zone

## 3. Bot Specifications

- **Dimensions:** Max 300 mm × 300 mm × 300 mm (**0 tolerance**)
- **Weight:** Max 5 kg (including battery & controller)
- **Voltage:** Must not exceed **12V** between any two points
- **Control:** Manual (Wired or Wireless only)
- **Power Source:**
  - Onboard battery OR external wired supply
- Wired bots must:
  - Have sufficient wire length
  - Keep wire slack at all times
- Wireless bots must use **dual-frequency** to avoid interference
- **✗** LEGO kits and pre-assembled kits are not allowed
- **✗** IC engines are prohibited (only electric bots allowed)

## 4. Arena & Track

- Track includes:
  - Start and Finish line
  - Checkpoints
  - Obstacles (sand, stones, inclines, surprise elements)
- Surface may be **uneven/irregular**
- Obstacles may change between rounds



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## 5. Game Flow

- Robot starts at the **starting line**
- Timer begins when the race starts / robot crosses start
- Timer stops when robot crosses the **finish line**
- Robot must:
  - Start within **10 seconds**
  - Be submitted before the event (no modifications allowed after submission)
- **No test practice** inside arena
- **No reprogramming or hardware changes** during run
- Only **battery replacement** is allowed

## 6. Restart & Handling Rules

- If robot leaves track:
  - Restart from **last checkpoint**
  - Timer continues
- If handler touches robot:
  - Restart required
  - Maximum **2 restarts allowed**
- If robot stops functioning for more than **3 minutes** → **Disqualified**

## 7. Penalties (Time-Based System – Finalized)

(All penalties are added to total time)



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- One wheel off track → **+5 seconds**
- Entire robot off track → **+20 seconds**
- Manual touch/intervention → **+30 seconds**
- Skipping obstacle → **+30 seconds**

## Touch Rule:

- First touch → **Free**
- Subsequent touches → **+30 seconds**

## 8. Scoring System

- Final score is based on:
  - Total time (including penalties)
  - Obstacles completed
  - Distance covered
- Checkpoints:
  - Each checkpoint may carry **points (e.g., 10 points)**
- Skipping obstacles:
  - May result in **penalty or reduced score**
- Detailed scoring breakdown will be **revealed on event day**

## 9. Knockout Round Rules

- Head-to-head competition between teams
- Seeding based on qualifier rankings:
  - 1st vs last, 2nd vs second last, etc.

## Special Rules:



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- Only **1 free touch allowed**
- Additional touches → penalty applied
- Time advantage bonus:
  - If Team A finishes **x seconds earlier**
  - Bonus =  **$x \times 0.5$  points**

⚠ Winner is decided by **total score**, not just finishing first

## 🏆 10. Winning Criteria

- Maximum score based on:
  - Fastest adjusted time
  - Maximum obstacles cleared
  - Minimum penalties

## ❌ 11. Disqualification Conditions

- Bot exceeds size/weight/voltage limits
- Bot stops working > 3 minutes
- Use of prohibited components (LEGO, IC engines, kits)
- Modification during event
- Misbehavior or rule violation
- Interfering with other teams or arena

## ⚖️ 12. Code of Conduct

- Participants must:



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- Follow referee instructions
  - Maintain discipline
- Any misconduct may lead to:
  - Disqualification
  - Expulsion

## 13. Authority & Decisions

- All decisions by:
  - Judges
  - Referees
- Rules may be modified on the spot if required

## 14. Important Notes

- Teams must report **10 minutes before** their match
- Organizers will **not provide tools or equipment**
- Teams must bring:
  - Spare batteries
  - Required components