

TECHFEST 2023-24

PRAGYAN K-12

(ROBORACE)

TASK

- Teams have to build a manually controlled Robo-Race bot, which should be able to get over all the obstacles and complete the circuit within least possible time.

BOT SPECIFICATIONS

- The dimensions of the bot should be less than or equal to **300 mm X 300mm X 300mm** (lxbxh) and the bot should be under **5Kg**. failing which the team will be disqualified from the competition (the dimensions includes tires). An error of ($\pm 5\%$) is permitted.
- The bot must be controlled manually.
- Teams can use both wired as well as wireless control mechanisms. In the case of wired bots, the length of the wire should be a minimum of **2 metres** so that the wire remains slack at any instant of time. If the participants use a wireless mechanism they have to use either a dual-frequency remote, Bluetooth, or Wifi.
- The dimensions of the remote are not included in the size constraint of the bot.
- The Bot may have an onboard power supply or remote power supply any case.
- Participants are not supposed to use any readymade Lego components or readymade gripping mechanism. However, the participants are allowed to use ready-made gear assemblies.
- The mechanism used should be such that only one person will control the bot.
- Failing to meet any of the above specifications will lead to immediate disqualification.

POWER SUPPLY

- The participants should use an electric power supply i.e. the power source should be on the bot or kept outside the arena. The power source must be non-polluting and must satisfy the safety constraints determined by the organizers.
- In the case of an electric power supply, the voltage between any two points should be less than or equal to 12V DC at all times during the run.
- AC power supply will not be provided and cannot be used in the competition.

ARENA

The Arena may contain some hurdles such as marble tray, sand pit, slotted bridges, hanging bridges, See-Saw planks, Rocky Ramp, Slanting roads, etc. The width of the arena will be designed as per the size of the bot given.

GAMEPLAY

- This event may consist of one or many rounds.
- Each team will run its manually controlled bot through the arena. This round is the qualification round to enter the next round. In this round your bot will be tested structurally, mechanically, technically and your skills of controlling bot will be challenged to its peak. The bot must go through various modules (difficulties) as quickly as possible and cross the finishing line.
- If the bot has some technical issues then first technical hand touch of 3 mins will be given to fix it. This time will not be added to the total time. (teams should carry all required tools and other equipments)
- If the bot gets stuck in any module or falls off the track then the bot will be placed manually at the start of that particular module for which a hand touch penalty of 5 seconds will be added to the total time.
- If the bot skips any module, the time penalty of the respective module will be added to the total time (Which will be declared right before the competition).

JUDGING CRITERIA

- The bot would be checked for safety before starting and will be disqualified if found unsafe for other participants.
- Only one team member is allowed to handle the bot. No other team member is allowed to enter the arena.
- The final selection will be made by the net time, viz, the time after adding the penalties. The team with a lower net time will qualify.
- The bot will be liable for disqualification if it causes any kind of damage to the arena.
- A robot will be declared immobile if it cannot display linear motion of at least one inch in a timed period of 30 seconds. A robot with one side of its drive train disabled will not be counted out if it can demonstrate some degree of controlled movement.

- **The organizers reserve the right to change any or all of the above rules as they deem fit.**

Change in rules, if any will be highlighted on the website and notified to the registered teams

TEAM SPECIFICATIONS

- A team may consist of a **maximum of 4 members**.
- Students from different educational institutes can form a team.

ELIGIBILITY CRITERIA

- All students with a **valid identity card** from their respective educational institutes are eligible to participate.
- Students should fall under K-12 segment, strictly.

CERTIFICATE POLICY

- E-Certificates of participation will be given to all the teams present on the day of the event.
- Physical certificates will be provided to top 10 teams.

PRIZE MONEY

- The Prize money will be awarded to the **top 3 Winners** of the Final Round via physical cheques, and will be presented at the closing ceremony of the event.
The Winners have to mail the following information (immediately after the announcement of the results) to info@pragyakalp.com.

Subject: Pragyan K-12 Robo Race, team id- your position (example- Pragyan K-12 Robo Race, CZ10005- 3 rdPosition)

Body of mail-

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code