TOPBOT
BOLT

Description

Put your design and engineering skills to design a BOT which is intended to cross a path containing obstacles and different types of terrain. Call it a test of all the features of your bot, viz. mechanical, electronics and coding. The judging will be done on scored points and time to complete the run.

Objective

Make a remote controlled bot to achieve the task to complete the run over the track consisting of many terrains and obstacles in minimum time scoring maximum point and avoiding penalties. You can control your bot using wireless technologies like (RF, Bluetooth, WiFi) or using wired control. For fair competition, we stick to some rules and regulations and some guidelines for designing and building your bot.

How to apply

STEP 1:
Make a team of maximum 3 students and get yourself register at https://topbot.in/.

STEP 2:
Pay the registration fee using one of the following media:

1. Cash
2. Tezz

GENERAL GUIDELINES

1) Each team must assign a Team Leader.
2) Each team must consist of a maximum of 3 participants.
3) A few selected components will be provided to all participating teams on returnable basis. If any other components are required, you are free to use your own or can purchase them using the coupons that we will provide.
4) Teams from IIIT-Allahabad will be provided kits one week in advance. Teams outside IIIT-Allahabad will be given the kit on Day 0 of Aparoksha (15th March).
5) Each team will be given only one chance.
6) The decisions of judges is final.

SPECIFICATIONS FOR BOT

1) Bot should not be greater than defined dimensions, i.e 20 cm x 20 cm x 15 cm (L x B xH).
2) You can use any microcontroller.
3) Bot should be powered using battery only. No direct power supplies will be provided.The maximum allowed voltage to power the robot is 24V.
4) The net weight should not exceed 2kg.

RULES & REGULATIONS

1) The maximum time to complete the course is 20 minute. In case the bot was unable to complete the course, partial score will be provided on the basis of checkpoints crossed. Crossing the finish line will result in bonus of 150 points.
2) Teams will be only allowed to change the batteries only once during the competition.
3) If the robot by any chances deviates from the path, the robot will be kept back to the previous checkpoint. Standard touching penalty will apply.

4) During the game play, if any part of a robot is destructed/ dismantled/ damaged the participant will be given a timeout to repair at an expense of a penalty (150 POINTS), while the next participant for will be called the play.
5) Only 1 timeout of 5 minutes will be given for any participant and the participant will repair it.
6) Arena dimensions : 12ft X 12ft.
7) Some of the revealed obstacles are:
    - Path of Pebbles
    - Upside down inclined surface
    - Figure of 8
    - Sand Areas

   And many more surprises**

SCORING CRITERIA

1) The track consists of different checkpoints with different score for each of them.
2) You can avoid any obstacle at a cost of 2 x (checkpoint score of that obstacle).
3) Touching the track boundaries costs a penalty of 10 points for each touch.
4) Penalty of 150 points for taking time out to repair the bot.
5) Scoring will be done using the formula:
    - `TS    = Total Score from Checkpoints cleared.`
    - `TT    = Total Time taken to complete the run in min.`
    - `PEN   = Penalties`
    - `Score = (TSO) – (PEN) – 3(TT)`