ROBOTRON

BY

SRET

SOCIETY OF ROBOTICS AND EMERGING TECHNOLOGIES

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1. GENERAL RULES:

- If a team is found exchanging their robot with any robot with any of the participating teams, both teams would be immediately disqualified.
- Maximum of 4 team members of **boys only** are allowed.
- Disqualification will be made on the spot if any of the team members are found arguing (using slang words or physical contact) with the organising team or the members of another team.
- The organising team has the right to amend the competition rules(Like duration of any competition at any time)
- The decision of the judges will be final.
- The spelling of your name should be correct because it will be used for your Certificate.
- This Competition is only for School Level Students.
- If a team is not able to come to the arena when their match is announced, the team will be disqualified from the competition.

2. SPEED CODDING:

In this competition participants have to complete the challenge shown on the event day using scratch software in the given time

- The given task should be up and running according to the requirements.
- The task should be completed in as less time as possible, to advance into the next round.
- Programming Language will be Scratch
- Each round will be of a max of 20-30 minutes.
- The competition is only for students below the age of 14.
- **ONLY** 1 participant allowed

3. LINE FOLLOWING:

In this competition the robot must follow the black line on the white floor, the robot operation must be autonomus once start on the starting poing it should complete the track automatically. In this competition there will be two sub-categories based on robotic kit as follows:

- MODULAR

  In this category only LEGO EV3 and LEGO Spike Prime robotic kits will be allowed.No sensor, motor, battery and wheels can be use apart from the LEGO kits.

- INDIGENOUS:

  In this categor only Arduino kits wil be allowed, all types of sensor like IR, camera, will be allowed to detect the line, any kind of motors can be use to build the robot

- GAME RULES
  - Robots will follow a line from a starting location to a finish line autonomously.
  - The maximum size of the robot should be 8x8x8 inches.
  - Once a robot has crossed the starting point it must remain fully autonomous.
  - Once the Robot moves, team members will not be allowed to touch the robot.
  - Each team will be allowed maximum of 3 minutes to complete the course.
  - 2 minute to set up the robot on the arena once the team name announce failure leads to disqualification.
  - Decision of wining game will be decided on the completion of the course, point taken the team and least completed time

- ARENA
  - Competion arena will be made of panaflex with printed black line.
  - The line width will be 1.5” with +/- 0.5” for the course of line following track
  - The track will be a black line on a white surface in the qualifying rounds.
  - The arena would be revealed on the day of competition.
  - Students would be given at least 30 minutes to practice on the arena before the match starts

- ALLOCATION OF POINTS:
  - Passing each milestone would give you Ten points (Total three milestones)
  - Finishing the whole arena would provide you with Extra Twenty points making a Total of Fifty Points.
  - Participant can touch the robot if it leads out of the track and the position of robot will be reset to starting point .
  - If both teams would end up with the same points, a decision would be taken on time basis.

- RETRIES:
  - If the robot strayed due to some reason, retries are allowed. There are three retries allowed for a team within the three minutes duration of the match.
  - The position of robot will be reset to starting position from wherever it will be.
  - Every touch would add +5 seconds to the final time

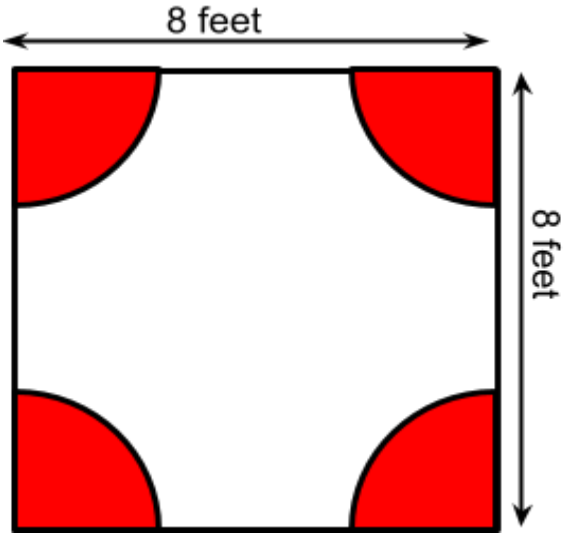
4. ROBO SUMO

- Once turned on, the robot will compete with another robot and the last standing one would be the winner.
- The robot must be remote-controlled. Any type of wireless communication is allowed such as Bluetooth,RF, Wifi etc
- The maximum size of the robot should be 12x12x12 inches. Every extra inch would cause a reduction of (-5) points each.
- The weight limit is about 5kg.Every extra 0.25Kg will cause a reduction of -10 points.
- Once the Robot moves, team members will not be allowed to touch the robot.
- The robot must have an on/off button.
- No restriction on battery voltages but if a power supply is considered dangerous, the judge can decide not to allow the robot to participate.
- Team would be given a maximum time of 2 minutes to set up their robot with a -5 points per 30 seconds.
- Every match would have a duration of 3 minutes.
- If a robot is pushed out of the arena or falls off the arena intentionally,the opposite team would gain 5 points whereas if the robot is pushed out of the red semi circle the opposite team will gain a total point of 10.

○ POINTS DISTRIBUTION:

Extra inch (size)	-5
Extra 0.25 Kg (weight)	-10
Extra time of 30 seconds (setting up the robot)	-5
Pushed out of the arena	+5
Pushed out from the arena (red quarter circle)	+10

- ARENA:



5. ROBO RACE

- Once turned on, the robot will complete the track from start to finish.
- The robot must be remote-controlled.
- The maximum size of the robot should be 10x10x10 inches.
- The voltage of the robot's electrical power source must not exceed 12-volt DC.
- The track would have bridges with an incline angle, bumps made out of straws/Wooden sticks and can also contain sand and stones.
- The winner would be decided on the basis of total checkpoints passed in respect to time.
- Passing each milestone would give you Ten points (Total two milestones)
- Finishing the whole arena would provide you with Extra Thrity points making a Total of Fifty Points.

6. RESCUE MISSION

This year the theme of rescue mission is based on the flood relief operation to rescue the affected people by flood. This year your robot must be able to pick the aid from the field and will be able to deliver the aid to the desired destination.The aid will be of different colors cube and destination point will be marked with same color as of aid Your robot must be able to perform the task autonomously.

- Once turned on, the robot will complete the track from start to finish.
- The robot must be autonomous.
- The maximum size of the robot should be 10x10x10 inches.
- The track would have a black line pattern that will have four different colours boxes i.e. Red, Blue, Yellow and Green along with pick and drop points, Bot should pick the cube from picking colour location and drop at its colour destination.
- The choice is on the user to follow the line or map the arena at preparation time.
- Students will have a preparation time of one hour to practice for qualifiers/next rounds.
- The winner would be decided on the basis of total checkpoints passed in respect to time.
- Passing each milestone(picking and potting cubes) would give you Ten points (Total four milestones) whereas clearing the obstacle would earn you 5 points.
- Finishing the whole arena would provide you with Extra Thirty points making a Total of Sixty Points.