



Sreenidhi's Annual Technical Fest ★ ISO 20121:2012 CERTIFIED

# ROBOVEDA '23

explore the unwritten lore...



# SAMANVAYI

SRINIDHI  
ROBOTS

## SAMANVAYI

Samanvayi is the perfect test to your robot's agility and your mastery to control your robot. This brings a perfect chance to show your foxiness, blend your wizard and fighter instinct controlling skills.

So, gather up all your patience, persistence, and integrity of your team before entering the spectacular arena. Come prove your worth at Roboveda'23, display your endowment and expertise to control the Robotic arm and get victory over your opponent.

### 1. GAME :

1.1 The Participants will be evaluated based on the speed and accuracy of tasks performed.

1.2 The team is supposed to **build a pick and place robot** capable of handling blocks measuring **7cm x 7cm x 7cm**.

1.3 The robot must successfully complete the assigned tasks within the specific time limit.

1.4 Teams should exercise careful and strategic control over their robot to achieve the fastest completion time and secure victory to advance to the final round.

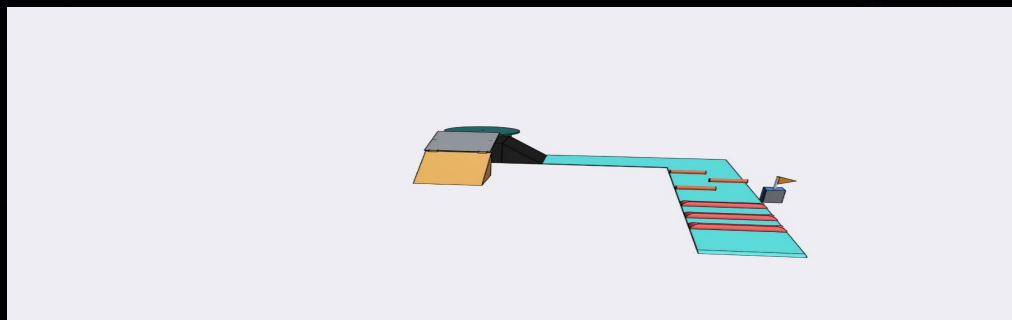
1.5 Among the first-round winners, the top two teams with the least time will qualify to the final round.

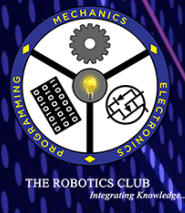
1.6 If two or more teams are tied for second place, a tiebreaker will be conducted to determine the qualifying team.

1.7 The winner of the tiebreaker will earn a spot in the final round.

1.8 The team should complete the given tasks in a total time of 12 minutes.

### 2. GAME FIELD AND OBJECTS :





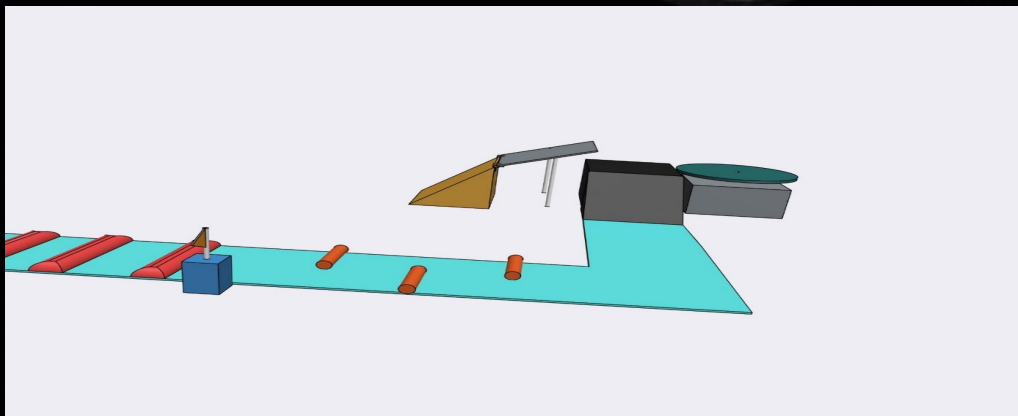
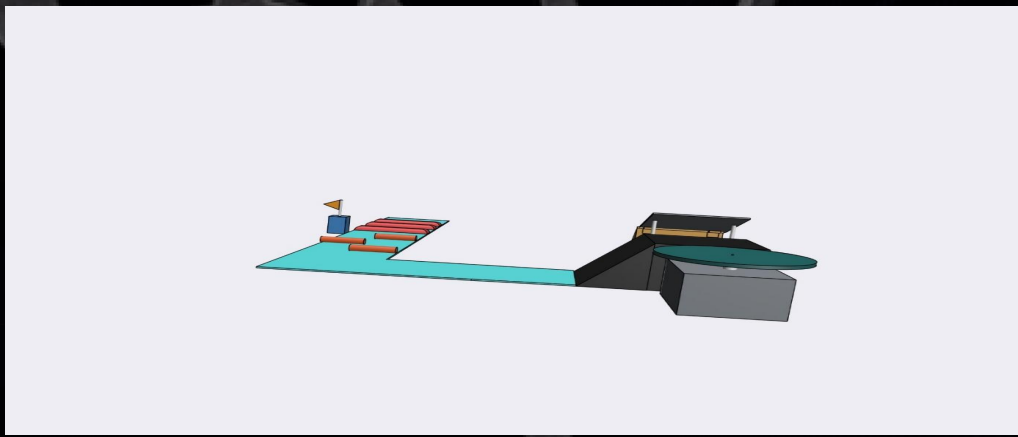
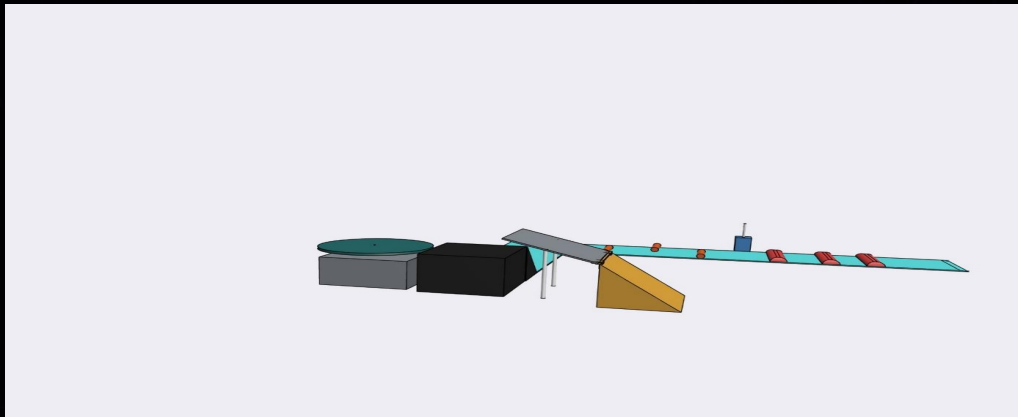
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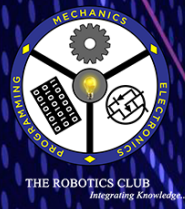
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### **3. TEAMS :**

- 3.1 Members from different institutions can form a team.
- 3.2 During play, only 2 team members are allowed near the arena.

### **4. ABOUT BOT :**

#### **4.1 BOT SPECIFICATIONS:**

- 4.1.1 Maximum Dimensions of the Bot: 30(l) x 30(b) x 30(h) in cm.
- 4.1.2 Bot's arm or gripper can increase its height or length upto 10 cm after match starts.
- 4.1.3 The use of pneumatics and hydraulics is allowed. The maximum allowable pneumatic pressure is 7 bars. (pressure source not provided).
- 4.1.4 Bots can be wired or wireless. If wired, the length of the wire must be a minimum of 3 meters.
- 4.1.5 A bot with a base resembling that of a toy car and its gearbox considered as a machine part will result in disqualification. Additionally,
- 4.1.6 Lego kits are strictly prohibited and will lead to disqualification.
- 4.1.7 A tolerance of 5% will be accepted for each bot.
- 4.1.8 Readymade PCBs are not permitted.

#### **4.2 POWER SUPPLY FOR BOTS:**

- 4.2.1 Power supply should not exceed 12V, 7.2A at any two points.
- 4.2.2 No external power supply will be provided at the time of the event.

#### **4.3 WEIGHT :**

- 4.3.1 No robot may exceed a weight of 2 kgs.

### **5. SAFETY :**

- 5.1 Participants must bring all the required accessories.
- 5.2 Team RoboVeda is not responsible for any damage to the Robot.
- 5.3 No technical assistance will be provided by the coordinators during the event.

### **6. THE COMPETITION AND MATCHES :**

#### **6.1 MATCHES:**

- 6.1.1 The event consists of 2 rounds:



6.1.2 Qualifying round.

6.1.3 Final round.

## 6.2 QUALIFYING ROUND:

6.2.1 Each team will be participating one after the other in the arena.

6.2.2 Initially, the team should position their bot at the start position.

6.2.3 The robot should pick and place the block at the starting point before commencing the tasks.

6.2.4 The bot must navigate through any obstacles or bridges present in the arena while performing tasks, if applicable.

6.2.5 There are three main tasks for the team:

Task 1, Task 2, and Task 3.

### TASK 1:

- The participants must select the equation.
- The bot must search desired blocks from the collection of blocks in order to solve the equation. The bot will then place the selected block according to the equation.

### TASK 2:

- The bot should pick up a block and enter the maze.
- While the block is traversing through the maze, if there are any check points, the bot should position the block appropriately and then pick up another block.
- If the bot encounters more than one checkpoints in its path, then it shall pick up and place the blocks a respective number of times.
- If the bot wishes to change its path, it must restart from the starting point.

### TASK 3:

- The robot must pick up and place the balls/blocks provided into the rotating disk in their respective holes after crossing the path building bridge.
- Then the robot must navigate through the path that contains obstacles.
- Finally, the bot must pick up the flag and position it in the hole provided at the start point by following the designated path.



## 6.3 FINAL ROUND:

- 6.3.1 Details about the Final round will be disclosed on the same day as the round is conducted.
- 6.3.2 Specifications of the bot for the final round are identical to those of the qualifying round.

## 6.4 POINTS & PENALTIES:

- 6.4.1 Placing /inserting the blocks/balls by BOT: **-15 sec** for each block.
- 6.4.2 Placing the block in an inappropriate position: **+6 sec**
- 6.4.3 Slipping out from the bridge: **+10 sec**
- 6.4.4 If the robot's two tires cross the arena three times or it slips from the arena or bridge: **+4 sec**
- 6.4.5 Participants touching the bot: **+8 sec**
- 6.4.6 Each team will have a single timeout for **1 minute**.
- 6.4.7 Changing components/batteries of the bot in middle of the game after a time out: **+15 sec**
- 6.4.8 Dropping the block/ball/flag other than task 1: **+6 sec**
- 6.4.9 Dropping the block more than five times in task 1: **+6 sec**
- 6.4.10 Task completion: **-20 sec**

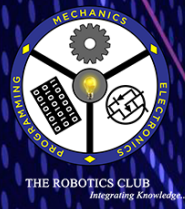
## 7. DISQUALIFICATION :

- 7.1 If a participant fails to comply with the rules, the robot will face disqualification.
- 7.2 The robot must not cause harm to the opponent or the arena.
- 7.3 Consistent harm to the arena may result in disqualification.
- 7.4 Any form of misbehaviour will not be tolerated, and the team will be subject to disqualification from Roboveda 23.
- 7.5 Any damage to the arena will not be accepted/entertained; if it occurs, the robot will be immediately disqualified.
- 7.6 Ready-made chassis, printed circuit boards, or controller boards (except for Arduino and motor drivers) are not permitted.
- 7.7 Failure to comply will result in disqualification.
- 7.8 If wireless control systems are in use, only digital values should be transmitted at the output. Additionally, speed control is not permitted.

## 8. OTHER :

- 8.1 The dimensions, weights, etc., of the field, facilities and equipment described in this document have a margin of error of plus or minus 5%, unless otherwise stated.





- 8.2 All participants will receive a Certificate of Participation.
- 8.3 Winners and Runners-up will be awarded a Certificate of Merit.
- 8.4 All Participants must bring their respective college ID cards.
- 8.5 Team Roboveda is not liable for any damage to your robot during or after the event.
- 8.6 We kindly request participants not to assume anything that is not mentioned in the document without contacting the coordinators or Technical Deputies.
- 8.7 It is our sincere request to all participants to thoroughly review this rule book, and not a single point mentioned in it will be compromised under any circumstances.
- 8.8 We also request you to keep a copy of this rule book readily available during the event.
- 8.9 Please check the rule book frequently, as there may be some changes.
- 8.10 Any form of misbehaviour will not be tolerated and will result in the team's disqualification.
- 8.11 The registration fee per individual in a team is ₹299 with which the entrant can participate in Yoddha, Samanvayi, Jaladhmatra only. One should pay the scheduled amount before participating in the event.
- 8.12 The registration fee per individual in a team is ₹549 with which the entrant can participate in all the events except Pushpak, Ranaveera, and Yantraa. One should pay the scheduled amount before participating in the event.
- 8.13 The registration fee per individual in a team is ₹.799 with which the entrant can participate in all the events and any one of the 2 categories in Ranaveera. One should pay the scheduled amount before participating in the event .
- 8.14 The registration fee is ₹849 for which the entrant can participate in all the events including Pushpak, Yantraa, and in both the categories of Ranaveera.

**Note: In case of any discrepancies, the decision of the coordinator and the event head shall be the final and no further arguments shall be entertained.**

\*\*\*\*\* THANK YOU \*\*\*\*\*

### **EVENT COORDINATORS:**

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