

# Robo war

Scrap till you leave just scrap!

### **INTRODUCTION:**

Designing a robot might be easy but playing war with your robot is hard and fun. Come join this combat of robots where you get to fight and annihilate the nemesis! The objective is to immobilise the opponent, as many times as possible and score points.

### **PROBLEM STATEMENT:**

Build a manually controlled robot skilled enough to defeat the opponents' robot by making it immobile within the given time limit.

### **QUALIFYING ROUND:**

1. This is a one-on-one knockout battle.
2. The robot that immobilizes the opponent robot wins.
3. There will be three rounds in each match.
4. The duration of each round will be 1.5 minutes, followed by 1 minute break.
5. Maximum 2 technical timeouts of 30 seconds each can be taken.
6. The surface of the arena will be metal or wood.
7. Scoring criteria:
  - Attacking and defense strategy and mechanism
  - Aggression
  - Throwing robot out of arena
  - Extent of damage done to opponent robot
  - Extent of immobility of the opponent left
  - Robot operating skills (maneuvering)
  - Negative points for damaging the arena
8. The team which wins the maximum number of rounds will be qualified for the next round.
9. Players of each match will be decided by drawing chits.

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## **ROBOT SPECIFICATIONS:**

- Control: Robots should be manually controlled.
- Dimensions:
  - Maximum dimensions of robot shall not exceed 80cm x 80 cm x 60 cm (l\*b\*h).
  - The robot shall not extend itself more than the maximum dimensions at any point.
  - Tolerance of 10% on dimensions is accepted.
- Weight:
  - Robot with ON BOARD battery: maximum weight of robot with battery shall not exceed 65 kgs.
  - Robot with OFF BOARD battery: maximum weight of robot shall not exceed 55 kgs.
- Power supply:
  - Power supply to the robots should not exceed 48V.
  - Power supply can be ON/OFF board.
  - No external power supply will be provided by organizers at the arena.
- Tolerance of 5% weight and power supply will be allowed.
- For wired robots:
  - all the wires shall be secured together (i.e., stacked together so that no wires or strands come out separately).
  - Wires should be stacked for at least 6 m in length from the base of the robot.
  - Pipe may be used to direct wires through it.
- For wireless robots:
  - The organizers will not be responsible for any frequency interference. It should be taken care of by the participants.
- The dimensions of the arena are 20 feet x 20 feet (can be changed).
- Strictly **NOT** allowed:
  - Use of explosives, fire, water, grease, magnetic weapons, cutters, harmful chemicals.
  - Any mechanism or carelessness that can lead to short circuit or fire accident or any such harmful event.
  - Jumping, hopping, flying, signal jamming.
  - Any damage to the arena wantedly or unwantedly.
  - Use of IC engine in any form.

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## **RULES AND REGULATIONS:**

1. No tools or technical assistance will be provided by the organizers.
2. Readymade RF modules, PCBs, Arduino are allowed.
3. Every part of the robot should be controlled by the single common power source only (it shall turn off if power supply is stopped).
4. The robot cannot split into multiple robots at any point of time.
5. The robot should not have any detachable units that can act as stand-alone robots.
6. No modifications can be done to the robot in any way after final inspection of the robot.
7. Continuous dragging or pushing of opponent robot for more than 10 seconds will not be allowed.
8. The organizers are in no way responsible for any damage to your robot, and shall not be blamed for any such cases.
9. No practice runs will be provided.
10. No physical or verbal abuse will be tolerated.
11. Constantly harming the arena will lead to disqualification.
12. Members of different institutions can form a team and must carry their respective college ID cards.
13. Only 2 members of a team are allowed to stay around the arena (for controlling and assisting).
14. Any kind of damage to the arena will not be entertained, and if done, the robot will be immediately disqualified.
15. No practice runs will be provided.
16. Use of an IC engine in any form is not allowed.
17. Human interference (e.g. touching the robot, stepping into the arena) during the game is not allowed.
18. No external power supply will be provided at the time of event.
19. A robot with the base of a toy car and its gearbox as a machine part will be disqualified. Also, LEGO kits are strictly prohibited.

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20. Member participated from a team cannot participate in another team for the same event.
21. A robot is allowed to participate only once in that particular event.
22. The organizers are not responsible for any kind of damage to your robot.
23. In case of any discrepancies, the decision of the coordinator and the event head shall be final, and no further arguments shall be entertained.
24. The teams should bring their own toolkits.
25. Organizers are not responsible for frequency interface.
26. Additional rules might be stated prior to the event.

### **CERTIFICATE POLICY:**

1. A certificate of participation will be awarded to all participating teams except for the disqualified team.
2. A certificate of merit would be awarded to the winners, along with prize:
  - \*1<sup>st</sup> Prize: Rs 20,000**
  - \*2<sup>nd</sup> Prize: Rs 15,000**

### **CONTACT:**

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