



## AMPHIBIAN BOT

### Task

*Make a remote controlled boat, powered only by batteries, which has to navigate through an obstacle course float on water and run on land in the shortest time possible.*

### Arena

- *Arena is consisting of both water and land part.*
- *Arena on water in a circular pool.*
- *Floating balls will form the boundary of the track on water.*
- *The width of the track will be of 40 cm.*
- *The race track will be consisting of sharp left-right turns, bumps, slopes, gravels and sand, grease laden surfaces, etc.*
- *Following are some of the main obstacles to be faced in the track:*
- *Elevated tracks of not more than 30 degree.*
- *Rough uneven terrains and Long bridges.*
- *Pit holes and death wells.*

### Machine Specifications

- *The boat must fit into a box of 50 cm x 25 cm x 25 cm at all times.*
- *All boats must be radio controlled or controlled with a wired remote and strictly battery powered only.*
- *The participants are advised not to use RF technology for the wireless robot as it can be interfered by other participants using the RF technology.*
- *Use of dual frequency remote is compulsory.*

### Power Supply and Propulsion

*The machines have to use an on-board electric power supply. No external power supply will be allowed. Teams shall bring their own power supply for all its machines. The potential difference between any two points of the machines must not exceed 12V DC.*

### Event Rules

- *Each participant will be given only one chance to finish the course, the boat with shortest time will stand as winner.*
- *Participants will not be allowed to touch the boat directly or indirectly at anytime during the run; doing so will lead in disqualification.*
- *Sinking or Disintegration of the boat will lead in immediate disqualification.*
- *If the boat stops on the land track then it will have to restart again from start point, but the time passed will be counted.*



- *If the boat starts off before the whistle is blown, the counter would be restarted and the machines would get a second chance. However, if the boat starts off without the flag being waived for a second time, it will be disqualified.*
- *Any cost incurred due to damage or disintegration of the boat will be borne solely by the participant and is not the responsibility of the host organisers.*
- *No normalization of the result will take place due to any advantage or disadvantage to a participant due to ripples in the pool or wind.*
- *Only one member of the team is allowed to handle the boat.*
- *Participants are not allowed to keep anything inside the arena other than their bot.*
- *Any team that is not ready at the time specified will be disqualified from the competition automatically.*
- *The machines will be checked for their safety before the run and will be discarded if found unsafe for other participants, spectators and arena.*
- *The boat is not allowed to leave anything behind, all components should be rigidly fit to the machine, and there should be no falling off of parts of the robot.*
- *Organiser decision shall be treated as final and binding on all.*
- *The organisers 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 participants.*
- *Organisers reserve the right to disqualify any team indulging in misbehaviour or violating any rules.*
- *In case of any disputes/discrepancies, the organizer's decision will be final and binding.*
- *Note that at any point of time, the latest information will be that which is on the website. However, registered participants will be informed through mail about any such change*

## **Rounds**

### **ROUND 1**

- *This is an elimination round where the boat must complete the circuit in minimum amount of time. The boat will be placed in the Start Zone.*
- *When the whistle is blown, it will have to first cross the land path and then the water path and then reach the patch which will be the final stop as shown in Figure 1, again whistle will be blown and time will be noted down.*
- *Participants will be given 1 extra attempt if their boat malfunctions on the land itself with the condition that time will be continuously counted, you will be just given a chance to place the boat at starting position again, then and there itself.*
- *The best time will be taken into consideration.*
- *Top 32 teams will advance to the next round.*

### **ROUND 2**

- *The 32 shortlisted teams will face off against one another in an elimination round.*
- *Boats will be placed at positions 1 and 2 marked respectively as shown in Figure 2 and must complete the course staying in between the boundaries.*



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- *The path consists of some Zig zag movement.*
- *When the whistle is blown, both boats must start simultaneously and the boat which first crosses the finishing line will win.*
- *The challenge of this round is to avoid collision with the other boat at the intersection of the two paths.*
- *If the boat disintegrates, sinks or is knocked out of the circuit upon collision it will be disqualified and the other boat will be declared winner of the round.*

### **Judging Criteria**

*The 2 boats to reach the final will be given 1st and 2nd prize and the boats which lose in the semi finals will have an eliminator, where 3rd/4th place will be decided and the team coming 3rd will be given 3rd prize.*

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