

RoboGames 2010

COMPETITION DESCRIPTION - OPEN CATEGORY (Version 1)

1) ROBOT SPECIFICATIONS

The competing robots, should be self-navigating, and should perform the given track. Competitors may build their robots using any architecture. However, they should adhere to the following guidelines.

- All robot devices should conform to maximum dimensions of 250mm (Length) X 180 mm (Width) X 200 mm (Height), including all accessories.
- Robot should be provided with a start switch for the handler to commence the contest. The robots should perform the task fully-autonomously. Once the robot is switched on, any human interaction with the robot is not allowed.
- The use of external power is also not allowed.

2) ENVIRONMENT SPECIFICATIONS

The work space is a 3mx3m flat area covered by 10cm height fence. Inside the work space there are arrows in black towards a treasure (the goal) which is a black circle in a smooth white background surface. Irregular obstacles will be there to avoid by the robot in the path to the treasure.

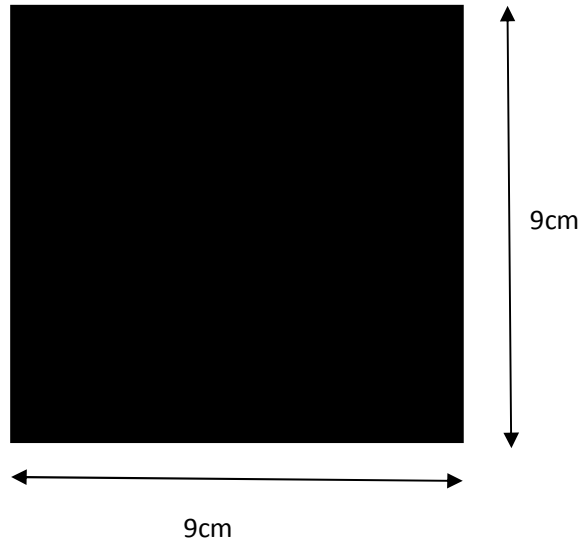
3) TASK

General

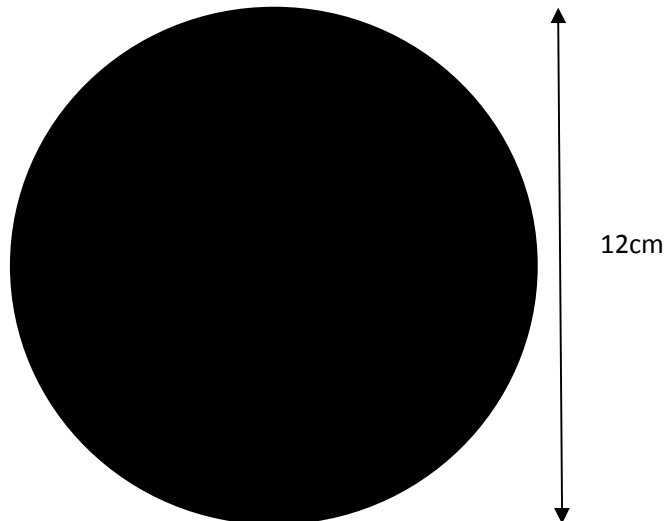
There will be randomly placed black arrows in three paths biasing towards a treasure which is a black circle. Set of irregular obstacles will also place in between the different arrow paths to the treasure. The task of the robot is to navigate on the area detecting the arrows and moving towards the treasure avoiding obstacles from the starting point to end point and come back to the starting point within the minimum possible time. Robot has to navigate through all the possible paths to the treasure and come back to the starting point. After navigating through all the paths it should choose the shortest path and take another journey to the treasure and come back to the starting point to finish the task. Robot should detect the area boundary also. Sample top view of the track is given in figure 1.

Robot should avoid the obstacles and the fence of the boundary without touching them. Placement of the arrows and the obstacles is not predefined. Competitors will get the final arrangement at the competition only.

Starting point



Goal (Treasure Location)



Last updated on 16/05/2010

Maximum Obstacle height: 40 cm

Maximum Obstacle height: 20cm

Task completion and finishing

Robot should navigate through the arena as described in the Task - General. Robot should blink an indicator light to show detection of starting point and end point separately in each turn after successfully detecting them.