

QUADCOPTER CHALLENGE

Problem statement:

Quadcopter Specifications:

1. The quadcopter should fit within the dimensions, 60cm x 60 cm x 30cm.
2. The dimensions of quadcopter must not be less than 15cm x 15cm x 5cm.
3. The vehicle needs to be controlled by a wireless remote control system at all times during the competition.
4. Organizers won't be responsible if the frequencies of two drones match and there is a frequency interference.
5. Participants must have a secondary remote in such a case.
6. Propellers cannot be made of metal.
7. Usage of Ready-to-fly kits is strictly prohibited.
8. Usage of autopilot is strictly prohibited.
9. For the onspot level, you need to attach a small hook(or robotic arm if you wish) which should be able to carry about 200-300g of weight as payload.
10. Have these changes ready when you come for the contest as we will not be providing any in the challenge.

Levels:

Level '0' (30 points)

Upload a video of your quadcopter with given instructions on Facebook with two hashtags

#teamName

#Quadcopter#elan_Nvision2k19

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www.elan.org.in

2. Submit the video through email to techy@elan.org.in with the subject of the mail as “ Video submission for Quadcopter challenge , ELAN and Nvision 2019” on or before February 18, 2019 with your team members details(ELAN ID's and names). Only one video per team is accepted.
3. The length of the video should be between 1 and 2 minutes showing the quadcopter taking off and taking a left and a right turn and landing.
4. The video must also cover the pilot.

Level '1' (During ELAN&nvision 2019)

Round 1:

- > There will be hoops (at different angles), and different kinds of obstacles, along the path.
- > Your drone needs to pass through all the obstacles along the given path at the best time. There is no time limit.
- > The points are awarded depending on the position.

Round 2:

- > This is a test for position and altitude holding accuracy. The quadcopter needs to hover mid-air in between four rods without getting out of the closure.
- > The points will be dependent at what height you are able to hold it in between the rods. There is a minimum height limit of 1m and a maximum height limit of 5m.

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>Total time is 1 minute per team.

Points Scheme

+5 * height (rounded in meters) points for every ten seconds of hovering without touching the walls.

Points (5 * no. of times) will be deducted if it touches the walls and no points will be awarded in that interval of 10 seconds.

Round 3:

This round is similar to the main round , in this round , the track that is specified in the previous round need not be followed, the team need to design their own optimal path such that they should cover all the obstacles in minimum time possible.

Points Scheme

Will be announced on the spot

Level '2'

This is a surprise spot round wherein the problem statement will be disclosed at the venue. The finalists of the Level '1' are eligible to compete in this. Have a detachable hook(or robotic arm if you wish) and your drone should be able to handle a payload of 200-300gms.

Bonus round

- 1.This round is not compulsory. Any team may volunteer to enter this round
- 2.In this round, one need to perform any kind of flips or rolls among these <http://www.quadrocoptertricks.com/>
- 3.Maximum of 5 trials will be given to a team.

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4.+25 points for each successful flip or roll performed.

Bonus Points: **Level 1**

Round 1

Passing through obstacles continuously without the drone touching the obstacle will result in additional 20 pts

Round 2

+20 points for not breaching the boundary at all, throughout the round.

Round 3

Will be announced on the spot

Level 2

It will be announced at the venue itself.

Fouls and penalties:

- 1.Destruction of arena of each round of any type will result in huge penalty.
- 2.Obstruction of other participant's drone in any manner whatsoever may cause huge penalty in their points or immediate disqualification.
- 3.In any case of dispute, the decision of organizers will be final.
- 4.The drone should not go beyond 20m (except bonus round) of altitude.
In such cases minor penalty will be given.
- 5.Organizer decision is final and binding in all matters.

Note:

- >Make sure you make use of failsafe option in case it may go out of control.
- >The Organizers will not be responsible for any damage that occur to your quadcopter throughout the competition.

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