EXODIA '19

DRONE CHAMPIONSHIP

A QUADCOPTER DRONE

EVENT COORDINATORS

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AIM:

The Objective of this whole competition is to judge the knowledge and skills of the all the participants, on the basis of which the winners of the Quad copter Championship will be declared. Build your Quadcopter to travel from source to destination crossing various interruptions, hurdles etc along the path of journey.

INTRODUCTION:

The Quadcopter event is open to the students of all the Departments and no restrictions over the branch and year of studying.

TASK SPECIFICATION:

- Build your Quadcopter to travel from specified source to destination crossing various interruptions, hurdles (details will be provided at the time of venue) etc., along the path of journey.
- Factors to be tested
  - Efficiency
  - Designing
  - Time
  - Innovation
  - Stabilization
  - Team work

PARTS ALLOWED:

- Complete Quadcopter
  - Quad frame
  - Stabilization Unit
  - Receiver and Transmitter
  - BLDC Motors
  - Batteries
  - ESCs
  - Propellers
- Additional Accessories
  - Hooking Arrangement for carrying the secret materials.
  - Altitude Locking Mechanism such as IR Sensors, Ultra- Sound Sensors, etc.

QUADCOPTER SPECIFICATION:

- **The complete quadcopter should fix inside the box of dimension 1000x1000x200 (lxbxh). All dimensions are in mm.**
- **There is no restriction in making use of the Quad frame material or the Ratings of the BLDC Motors, Electronic Speed Controllers, Propellers, Batteries and Weight of the Quadcopter.**
- **Free to use flight controller or Microcontroller.**

RULES AND REGULATIONS:

1. Readymade Quadcopters are strictly prohibited.

2. Quadcopters must be built according to the dimensions mentioned.

3. A team must have only one Quadcopter for competition.

4. Replacing of Quadcopters in between the competition is prohibited.

5. Timeouts will be provided in case any problem arises.

6. Replacement of parts of Quadcopters will be allowed only if accidents occur during the competition.

7. In case of ties, the Quad-copter that completes the task faster will be considered.

8. if the Quadcopter is found damaging the arena, Judges have the right to deduct the points.

9. No Quadcopters will be provided by the organizers.

10. Each team must have their own Quadcopters and all the required accessories.

11. The Organizers reserve the right to change any of the above rules as per the circumstances.

General Rules:

1. A team should consists of at least 2 members and maximum of 5 members.

2. Each team is expected to come prepared with all the accessories.

3. No test practice is allowed at competition arena.

4. Participants shall not be allowed to be part of more than one team.

5. More than one team can can register from the same college but the drones should not be identical.

6. A team once registered cannot register again, even with a different name.

Warning:

1. Make sure that proper connections are made before entering the competition.

2. The teams are solely responsible for all the materials they bring for the competition.

3. The Organizers are not responsible for the accidents or damages that occur to the Quad-copters.

Judging:

1. Judges decision shall be treated as final and binding on all and sundry.

2. Arguments with the Organizers will not be entertained.

3. Judges reserve all the rights to eliminate the participants of any team who indulge in any informal activities.

Arena:

1. Each tasks consists of various hurdles including multiple takeoffs and landings.

2. There are specific check points where the team will be given relaxation and the teams can make use of the checkpoints for charging the batteries, adjusting gains and calibration of sensors.

3. There will be enough time provided for the teams to charge the batteries at the competition of every stage.

4. If drone fails to complete the task , It has to start from previous checkpoint.

5. The teams can skip the stages in which they think it is not possible for them to compete.

FORMAT OF THE COMPETITION:`

STAGE 1:

EVALUATION

- **The quadcopters will be evaluated on the basis of design, innovation, construction and smoothness of flying.**

STAGE 2:

INDIVIDUAL TAKE OFF AND LANDING

- **During this stage the teams will be given multiple take off and landing only.**
- **The performance will be evaluated like smoothness of taking off and landing, distortions in quad, vibrations, etc.**
- **Multiple take off and landing will be given in the plain and uneven ground level.**

STAGE 3:

LADDER CROSSING:

- **This stage meets the perfection in the stability of the quadcopter.**
- **During this stage the quadcopter has to travel through the gaps in the huge sized ladder.**

STAGE 4:

ANGLED LADDER:

- **This stage is quite similar to Stage 4.**
- **Even more complexity to the piloting with the proper stability of the quadcopter is evaluated in this stage.**

STAGE 5:

HURDLES:

- **This stage consists of various hurdles and the quadcopters should try to clear them as soon as possible.**

CHAMPIONSHIP:

The team with highest aggregated score will be declared as winner.

NOTE:

- **Registration fees per team is Rs 1000/-**
- **Late registration will not be entertained.**
- **Any further changes in any of the above will be updated on the site www.exodia.in**

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