1. ROBOWAR

For all those who have passion in Robotics or Sports, RENAISSANCE'17 presents Robo-war. This competition is to show how long robot of yours can withstand in the arena fighting the other robot. Teams must build a manually controlled machine which can withstand the other robot in the arena.
The bot can be wired or wireless. In case the participants use wireless mechanism, they must use dual frequency remote.

RULES:

Dimensions and Fabrications:

1. The machine should fit in a box of dimensions 750mm x 750mm x 1000 mm (l x b x h) at any given point during the match. The external device used to control the machine or any External tank is not included in the size constraint.
2. The machine should not exceed 60 kg in weight including the weight of pneumatic source/tank (weight of power source and wires will not be considered).

Power Sources

1. The machine can be powered electrically only. Use of an IC engine in any form is not allowed.
2. Each team must have its own power sources. Only 220V volt AC sources will be provided at the arena, but can only be used in the form of DC voltage. The teams have to bring their own battery eliminators.
3. The voltage difference between any two points in the machine should not be more than 36V DC at any point of time.
4. All connections should be made safe to prevent short circuits and battery fires. Any unsafe circuitry may be asked to be replaced; failure to do so will result in disqualification.
5. Use of damaged, non-leak proof batteries may lead to disqualification.
6. Change of battery will not be allowed during the match.
7. It is suggested to have extra batteries ready and charged up during competition so that on advancing to next level, you don't have to wait or suffer due to uncharged battery. If teams don't show up on allotted slot, they will be disqualified.

Mobility

1. All robots must have clearly visible and controlled mobility mechanism in order to compete.
2. Methods of mobility may include:
    - Rolling (wheels, tracks or the whole robot).
    - Walking (linear actuated legs with no rolling or cam operated motion).
    - Shuffling (rotational cam operated legs).
3. Jumping and hopping is not allowed.
4. Flying (using aerofoil, helium balloons, ornithopters, etc.) is not allowed.
5. Any other method of mobility which leads the robot to lose contact with the ground is not allowed.

Robot control requirements

1. Both wired and wireless remote controls are allowed in the event.
2. All wires coming out of the robot should be bundled as a single unit.
3. The wires should be properly protected and insulated.
4. The wire should be sufficiently long so as to remain slack at all time during the competition.
5. In case of wireless remote controls, the remote should have at least two frequency operations to prevent interference with other team.
6. Teams are recommended to attach a pipe to bot in vertical direction through which wires come out. The length of pipe will not be considered in bot dimension

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Pnumatics and hydraulics

1. The robot must use non-inflammable and non-corrosive fluids to power pneumatic and hydraulic devices.
2. Maximum pressure in the tank containing pneumatic fluid should not exceed the limit of 8 bars and there should be a provision to check the pressure in the tank.
3. All hydraulic liquids are required to be non-corrosive and your device should be leak proof. The maximum pressure in cylinder should not exceed the rated pressure at any point of time.
4. Participants must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge.
5. You must have a safe way of refilling the system
6. All pneumatic components on board a robot must be securely mounted. Care must be taken while mounting the pressure vessel and armour, to ensure that if ruptured it will not escape the robot.

Victory Criteria

1. A robot is declared victorious if its opponent is immobilized.
2. A robot will be declared immobile if it cannot display satisfactory motion of at least 6 inch in a timed period of 30 seconds.
3. In case both the robots remain mobile after the end of the round then the winner will be decided subjectively.
4. A robot that is deemed unsafe by the judges after the match has begun will be disqualified and therefore declared the loser. The match will be immediately halted and the opponent will be awarded a win.
5. If two or more robots become entangled or a crushing or gripping weapon is employed and becomes trapped within another robot, then the competitors should make the timekeeper aware, the fight should be stopped and the robots separated by the safest means.
6. Therefore declared the loser. The match will be immediately halted and the opponent will be awarded a win.
7. Robots cannot win by pinning or lifting their opponents. Organizers will allow pinning or lifting for a maximum of 20 seconds per pin/lift then the robots will be instructed by the organisers to release. If, after being instructed to do so, the attacker wants to release but does not, their robot may be disqualified. If two or more robots become entangled or a crushing or gripping weapon is employed and becomes trapped within another robot, then the competitors should make the timekeeper aware, the fight should be stopped and the robots separated by the safest means.

Team Size

1. Students from different colleges can form a team. A team may consist of at least 2 members and should not exceed more than 5 members.
2. The students must carry their valid student ID cards of their college which they will be required at the time of registration.
3. Teams should participate with wired or wireless robots. Only one team member can control the robot. Participants shall not be allowed to be a part of more than one team.

General rules

1. There will be three rounds of three minutes each.
2. Any team that is not ready at the time specified will be disqualified.
3. In no case should the arena be damaged by any bot. The competition will be played on a knock-out basis.
4. A BOT will be declared 'KNOCKED-OUT' if it is unable to travel a distance of 6 inches in 30 seconds.
5. If no bot is immobilized then winner will be declared on the basis of the points scored.
6. The organizers reserve the rights 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 teams.

7. Violation of any of the above rules will lead to disqualification.
8. Decision of organizers will be final and binding on all.

Safety Rules

Compliance with all event rules is mandatory. It is expected that competitors stay within the rules and procedures of their own accord and do not require constant policing.

1. Special care should be taken to protect the on-board batteries and pneumatics, robot without proper protection will not be allowed to compete.
2. If you have a robot or weapon design that does not fit within the categories set forth in these rules or is in some way ambiguous or borderline, please contact the event organizers. Safe innovation is always encouraged, but surprising the organizers with your brilliant exploitation of a loophole may cause your robot to be disqualified before it even competes.
3. Each event has safety inspections. It is at their sole discretion that your robot is allowed to compete. As a builder you are obligated to disclose all operating principles and potential dangers to the inspection staff.
4. Proper activation and deactivation of robots is critical. Robots must only be activated in the arena, testing areas, or with expressed consent of the event coordinators.
5. All weapons must have a safety cover on any sharp edges.
6. All participants build and operate robots at their own risk. Combat robotics is inherently dangerous. There is no amount of regulation that can encompass all the dangers involved. Please take care to not hurt yourself or others when building, testing and competing. Any kind of activity (repairing, battery handling, pneumatics systems etc.) which may cause damage to the surroundings during the stay of the teams in the competition area should not be carried out without the consent of organizers. Not following this rule may result in disqualification.
7. All the resources provided at the time of competition from the organizers should be strictly used only after the consent of the organizers.
8. Once the robots should enter into the arena, no team member can enter into the arena at any point of time. In case if a fight has to be halted in between and some changes have to be done in the arena or condition on the robot(s), it will be done by organizers only

NOTE: Qualification of a robot to next level be subjective and totally on the decision of the judges. A robot winning in a round against its opponent doesn't guarantee its entrance into the next round. If the judges found the winner robot incompetent to enter into the next round, it may get disqualified. Judges can disqualify both the robots of a match from advancing to the next round.

Specifications

1. The dimensions of the bot should be less than or equal to 750mm x 750mm x 1000 mm (l x b x h) failing which the team will be disqualified from the competition.
2. The bot should be controlled manually.
3. Teams can use both wired as well as wireless control mechanisms. In case of wired bots, the length of wire should be minimum 2 meters so that the wire remains slack at any instant of time. If the participants use wireless mechanism then it is mandatory to use a dual frequency remote.
4. The dimensions of the remote are not included in the size constraint of the bot.
5. Bot can have an on-board or off-board power supply.
6. Irrespective of the mechanism used, only one person will be allowed to control the bot.
7. Top two teams will be rewarded and given prizes.
8. Certificate of participation will be given to all the teams.

FEES: Rs.800 (Per team)
1st Prize: Rs.10,000/-
2nd Prize: Rs. 5,000/-

VENUE:

Date: 27-02-2018
Time: 10:00 AM – 3:30 PM
Venue: HAWAMAHAL

Faculty Coordinators:

1. Vikas Sharma
2. Devesh Gupta

Student Coordinators:
1. Harish Sharma
2..Chirag maheshwari
3. .Gourav goyal
4. .Chaitanya
5. Rishabh jain
6. Raghuveer