ROBORALLY

Theme:

- **Different landmarks of the world:** the mechanical bot is to cover various hurdles which represent several landmarks in the world map like Himalayas, Saudi Arabia etc.
- **robo vs wild:** the bot has to cover several hurdles which prototype a forest. The mechanical bot has to survive a world of the wild

Problem Statement :

Design a robot which is capable of passing various obstacles in its path.

General Rules :

1. Each team is required to construct 1 robot.

2. The maximum number of participants in a team is 4.

3. Each member must produce a valid ID card of his/her respective institution.

4.However students from different institutions can form a team.

Competition Rules :

1. Speed and efficiency are tested in this event.

2. Arena contains of different kinds of paths like sand, stones, bricks, grease etc.

3. Your robot should overcome all the obstacles placed in your path.

4. The one which reaches the final point in less time will be the winner.

5. The Robo Race competition is open to all legit students of Bachelor of engineering.

6. Teams of upto four members are permitted.

7. Toy chassis and toy hacks are not allowed.

8. The team will loose points upon:

- Breaking out of the track. The wire must remain slack all the time. Failing to do so will cause penalty.
- Touching the bot for realigning or adjust the bot.
- Skipping an obstacle

9.The points will be rewarded according to the time elapsed in reaching the finish line.

10.Only one team will race at a time.

11.At all times, the Robot must not: Emit smoke or fire Leak, stain, or soil Disperse powder, grit, or grime Scratch, gouge, or scrape In any case the robot must not cause damage to the track. Doing so will cause disqualification of the team .

Arena Specifications :

1. The race track will be 40 cm wide.

2. The track surface and course line may have unevenness.

3. There might be abrupt angles.

4. There will be certain obstacles in the race track which will try to slow down the bot.

5. The design and size of the obstacles may vary from that shown in the pictures.

Robot Specifications :

1. Robots can be Human-operated, and the onboard power supply is allowed.

2. For wireless control, the team must use a dual frequency controller.

3. The maximum robot base dimension is 300mm(L) x 300mm(B) x 300mm(H)

4. There are no constraints on robot's weight.

5. The robot may start the race in either orientation.

6. The power supply to the bot must not exceed 12V .

7. In case of wire operated bot, the minimum length of the wire must be 2meters minimum.

8. The wire must remain slack all the time. Failing to do so will cause penalty.

Power Supply and Voltage Regulation

1.The team will be provided with extended A.C. power supply 220 V.

2.The team must bring their own power regulators for power consumption, which must not exceed 12V at any point of the race.

3.stepping down the voltage during the race is allowed.

4.The teams can also bring DC Batteries as power supply to the bot.

Rally Obstacles: they will be somewhat like**(Actual may vary)**

- Pebbles
- Rigged plain (Valley/trough)
- Mounted soil
- Circular turns

- Oily surface
- Tunnel
- See saw
- Elevated jump
- Stair bridge
- Pyramids (plaster cones)
- Wheel bridge
- Slabted track
- Jump with rocks in ending
- Pendulum
- Zig zag turn
- Cloth/net bridge
- Rotating bridge
- Net gate
- Wooden planks
- 50 degree lifts
- Speed breakers
- Conveyer belt
- Tarpaulin bridge
- Border with fire
- Slope with boulder on top through dominos
- Sand box
- Magnetization border
- Railway track prototype
- Bridge with rolling cylinder
- Tyre arc
- Marbles
- 90 degrees turns
- Bridge with water underneath
- Plastic straw fences

- Acute angle turns

Scoring :

1. Hurdles of varying difficulty levels will have required points.

2. The team, on crossing the hurdles, will be awarded with respective points. No points will be awarded if the team is unable to win over the hurdle.

3. Both- the hurdles crossed by the bot and the time taken to complete the race- carry equal weightage in ranking the teams.

4. In case of any tie-

a. The maximum no. of hurdles crossed by the bots will be considered for breaking the tie; or

b. The min. time taken by any of the bots will be declared by the winner if no. of hurdles crossed by the bots are same;

c. The bots in tie will have to race again and the present scorings will be considered for breaking the tie.

Important Note:

1. The organizers retain the right to change the statement.

2. All changes/clarifications regarding the problem statement shall be conveyed to the event organisers.

3. The decision taken by the judges will be full and final.