



Yantrotsav (Technical Fest)



General Rules & Regulations

Convenors:

- i) Mr. Brijesh Kumar Umar : 7607003738
ii) Dr. Sushma Chaudhary : 8896093499

Coordinators:

- i) Mr. Ramesh Kumar : 8115656722
ii) Mr. Himanshu Singh : 9696034242
iii) Ms. Sonia Chaurasiya : 9760478682

S. No.	Event List	Coordinator & Contact Details
1	Bridge Kriti	Mr. Rahul Shukla (9919264907) Mr. Avinash Mishra (8564919083)
2	Sudoku	Ms. Supriya Singh (7905148567) Mr. Ashish Kumar (7376928249)
3	Poster Presentation	Mr. Himanshu Singh (9696034242) Mr. Manoj Kumar Singh (9452157240) Mr. Shubham Upadhyay (9793366677)
4	Algo-Challenge	Ms. Sonia Chaurasiya (9760478682) Mr. M. B. Singh (9794489194)
5	Open Book Hunt	Ms. Uma (6396132349) Mr. Aditya Mishra (8543901343)
6	Circuit Making	Mr. Ramesh Kumar (8115656722)
7	Code – Storm	Ms. Sonia Chaurasiya (9760478682) Mr. M. B. Singh (9794489194)
8	Paper Presentation	Dr. Sachin Neekhra (8319338197) Mr. Manoj Kumar Singh (9452157240) Ms. Nazima Ansari (7991987687)
9	Junkyard War	Mr. Amit Kumar Yadav (8299623918) Mr. Himanshu Singh (9696034242) Ms. Akriti Shukla (6391999613) Ms. Vijay Laxmi (9559404066) Ms. Neetu (8188054065) Ms. Soni Singh (7054900969)
10	Drone Flying Challenge	Mr. Brijesh Kumar Umar (7607003738) Mr. Ramesh Kumar (8115656722)
11	Check Your Knowledge	Dr. Pawan Verma (9415647443) Mr. Manoj Kumar Singh (9452157240) Mr. Shubhankit Soni (7272884992)
12	Robo Race	Mr. Brijesh Kumar Umar (7607003738) Mr. Ramesh Kumar (8115656722)
13	Project Competition	Dr. Sushma Chaudhary (8896093499) Dr. Anand Singh (7007522502) Dr. Pawan Verma (9415647443) Mr. Prashant Pandey (9450660696) Mr. Vishwajeet Singh Yadav (8090567795) Mr. Sanjeev Mishra (9305356515)
14	Model Competition	Mr. Hira Singh Yadav (9616476482) Mr. Amit Yadav (8299623918) Mr. M. B. Singh (9794489194) Mr. Sanjay Kumar Srivastava (9839826158)
15	Idea Competition	Ms. Uma (6396132349) Mr. B.N. Tiwari (9455897379)

16	Tech Charades	Dr. Sachin Neekhara (8319338197) Mr. M. B. Singh (9794489194)
17	Tech Debate	Dr. Sachin Neekhara (8319338197) Ms. Nazima Ansari (7991987687)
18	Logo Competition	Ms. Dharna Singh (9838661222) Mr. Prateek Sachan (6388463617)
19	Crack the CAD	Dr. Vinay Mishra (9450458656) Ms. Geeta Yadav (6388277286) Ms. Nazima Ansari (7991987687)
20	Circuit-a-thon	Mr. Ramesh Kumar (8115656722) Ms. Geeta Yadav (6388277286)
21	Startup Expo	Ms. Uma (6396132349) Mr. B.N. Tiwari (9455897379)
22	E-Sports	Mr. Amit Verma (8787011212) Mr. Aditya Pratap Singh (8188054540)

1. BRIDGE KRITI

- Each team can have 2 members. Design a bridge of given specifications satisfying the stated constraints using popsicles (ice-cream sticks).
- Span length : 60-65 cm and width: 10cm at both ends
- Height of the horizontal span : 11 cm (max.) from the ground
- Stick overlapping should not exceed 3 cm.
- Crown of arch (if arch shaped bridge) must be above horizontal span and its height should not exceed 25 cm.

Round 1: The bridge will be checked by the organizers regarding span, width, height and material constraints. The bridge satisfying all the conditions of round 1 will be allowed for next round.

Round 2: The upper deck will be subjected to concentrated loads. The loads applied will be gradually increased on the weighing support hung at Centre of the upper deck of bridge till failure.

Note: Failure is defined as, if structure breaks at any joint or if there is a sound of breakage& is or the deflection at Centre of bridge reaches 2.5 cm.

2. SUDOKU

- Individual participation is allowed.
- There will be single round.
- Max. Of 5min. Will be provided to each participant.
- The one who solve it in the least time will be declared as winner.

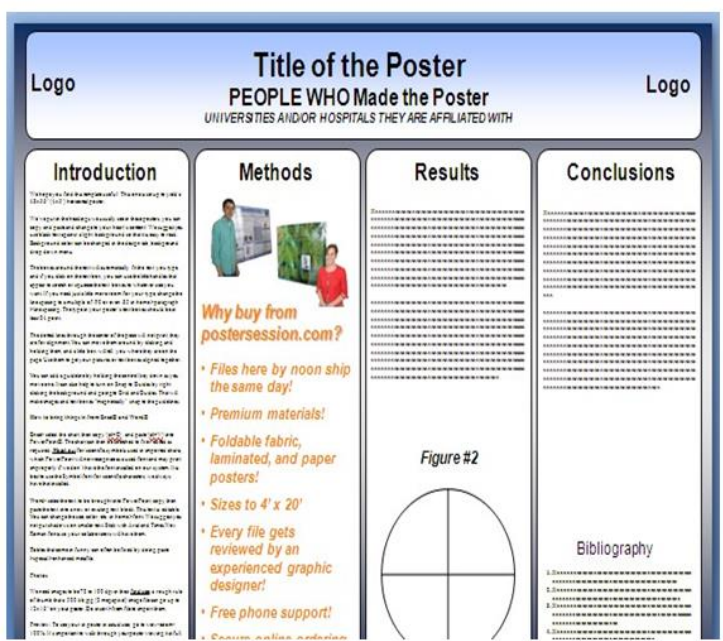
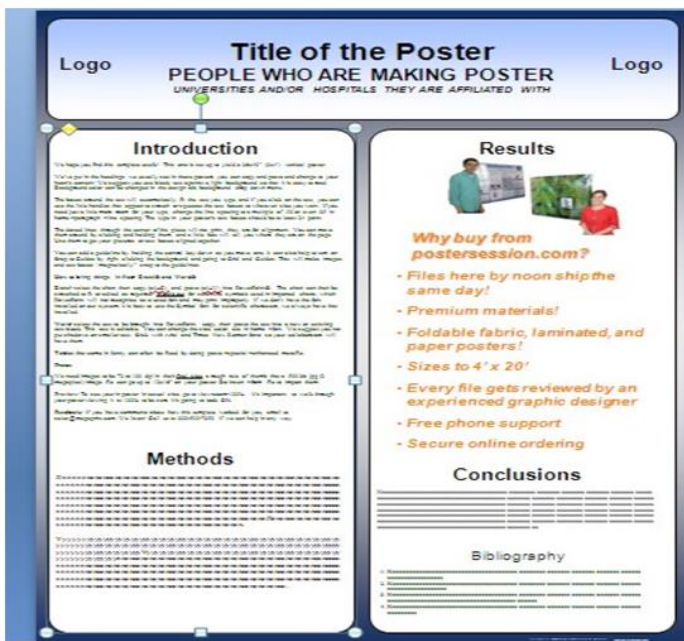
3. POSTER PRESENTATION

You all, like all professionals, must possess a well-developed ability to communicate. This poster competition is designed to emphasize the ability to deliver a visual presentation. Subject matter is to be related to your core stream.

RULES - Failure to abide by the following rules will disqualify the poster.

- The subject matter of the poster must address a technical, economic or environmental aspect of your core stream, provided it pertains to some sphere in which a professional is or should be involved.
- Each poster may be no larger than 48 inches (122 cm) by 36 inches (91.4 cm) unfolded. Posters may be assembled using A4, A5 or 8½" by 11" paper panels.
- Except for fasteners (such as thumbtacks) all poster material must be flush with the board, not protruding more than 1/8 inch (3.2 mm).
- There may be some mechanical or electrical devices attached to the poster.
- There may be some materials placed in front of, above, below, or to the side of the poster.
- All material must be accessible without having to lift or turn a page.
- Each entry may have maximum 2 team members.
- The poster title, name of student, College and university logo must be at proper place on the Poster.
- A sample template is attached for reference.

Templates:



4. ALGO-CHALLENGE

Algorithm Challenge Competitions provides opportunities for participants to sharpen their problem-solving skills, learn new algorithms and data structures, and showcase their abilities in a competitive environment. This event focuses on evaluating participant's problem-solving skills. By incorporating a variety of challenges for both puzzle-solving and algorithmic thinking, it can create an engaging and rewarding competition for participants with different interests and skill levels.

- Individual Participation is allowed.
- No. of Round : 2 of 30 minutes each
- **Round 1** : Puzzle Challenges
- **Round 2** : Algorithms Challenges
- Judges rules will be final and binding to all.

5. OPEN BOOK HUNT

Open-Book Hunt tests your ability to quickly find relevant information and then to understand, analyse, apply knowledge and think critically.

- Students will provide a set of question which attend in certain time limit (Time will announced before starting the open-book hunt)
- Best answer replied by the student will be the winner.
- Individual Participation will be allowed.
- Materials might be Your notes, Reading, Reference materials or textbooks, Equipments like calculators.

6. CIRCUIT MAKING

- Max. 2 participants allowed in a team.
- Mobile phones or any kind of communication will not be allowed.
- Circuits may be related to electrical or electronics engineering.
- Topic will be given on the spot.
- There will be 2 round.
- **Round 1** : Basic circuits
- **Round 2** : Advance circuits
- In case of tie, additional rounds may be taken.

7. CODE-STORM

- Duration: 45 minutes per round
- No. of Rounds: 2
- **Round 1**: 5 Problems on C/C++/Java
- **Round 2**: 5 Problems on Python/.NET
- Participation: Team of 2
- Judgment will be made on following criteria:
 - ❖ Maximum no. of programs Problems solved in least time
 - ❖ Program Efficiency
- One may bring their Laptop else computer (without internet) will be provided.
- Participants will be responsible for their own IT equipment, such as laptops or mobile devices.
- Judges Decision will be Final and binding to all.

8. PAPER PRESENTATION

- Individual member will participate in the event.
- Participants have to submit Technical paper on current/ Future Technology.
- Make the PPT on that topic.(Max:-15 slides and Max Time Presentation 10 min)
- Writing Rules:- One and a half spacing should be used for typing the general text. The general text shall be typed in the Font style 'Times New Roman' and Font size 12

Suggested Font Sizes:

Details	Font Type	Font size	Spacing
Chapter headings with chapter number on top	Times New Roman	14pt bold capitals	Centered
Section headings	Times New Roman	12pt bold capitals	Left adjusted
Subsection headings	Times New Roman	12pt. sentence case	Left adjusted
Paragraph headings	Times New Roman	12pt.bold sentence case	Left adjusted
Body of seminar report	Times New Roman	12 pt	Adjusted on both left and right(Justified) and with 1.5 spacing for text and double spacing for equations
Margins	Left Margin	1.5 inch	To accommodate binding area
	Right Margin	1.25 inch	
	Top	2.0inch	On pages on which chapter begins
	Bottom	1.25 inch	Other pages

(A typical Specimen of Cover Page & Title Page)

9. FRUGAL ENGINEERING / JUGAD/ JUNKYARD WAR

- Participation will be as team of maximum 2 members.
- Item to be made can be of any nature, may be civil, mechanical, electrical or your core stream etc.
- Participants have to bring their stuff (scrap) by their own.
- Participants may use of colors or any other decoration material.
- Decoration and customization has to be done with scrap material only, if required.
- Participants have to bring adhesives, scissors or any other cutting tool with themselves.
- Item to be made can be of any nature i.e. any engineering or general use.
- The duration of event is one hour.
- Participants will be intimated about the time 15 minutes before the end of time.
- Participants have to explain the concept what they made.
- The judges decision will be the final and binding to all.

10. DRONE FLYING CHALLENGE

- Participation can be as an individual or in a group of 2.

1. Purpose

This document outlines safety and operational regulations that govern drone racing to ensure participants enjoy fair competition in a safe environment.

2. General Specifications for Nano/Micro Drone

- Maximum Frame size: 350mm
- Weight of the drone: 1200 gm (approx.) with battery
- FPV Cam & Goggles are Optional (Recommended for Drone race not necessary)
- Height of flight: Free style within obstacles/arena

3. Pre-Competition Safety Requirements

Each participant attests to the fact that he/she has the appropriate experience to participate in the event, or will be assisted by an experienced participant during any And all flights in which he/she may participate. All drones must be successfully test-flown and are therefore qualified to be flown in the presence of fellow participants, event officials, and all others who may be in the arena during the event period.

Venue Safety Guidelines

- Safety must be the number one priority when holding a drone racing event.

Flight Envelope

a) Maximum Height

Free style within obstacles/arena (not above 10ft)

b) Set Course Back Distance

- Courses must be setup using the approved set-back distances to ensure the safety of participants unless the race course is netted.
- The minimum distance from the flight line to any human occupied areas must be 6 ft.
- The recommended distance is 7 ft. or more.

4. Participant Guidelines

- Listen and follow ALL instructions from the Event Convener or Organizing Head.
- NEVER walk onto the course while drones are flying.
- The course's flight line defines where the pilot or spectator area ends and the course begins.
- This flight line is not to be crossed as it will be well marked and highly visible.
- When you retrieve a drone after a completed race, ensure you cut-off its power immediately.
- Location of the first aid kit will be shared with the participants on the event spot.

5. Pilot Guidelines

- Fly only in designated areas.
- Fly only at appropriate times (recommend slot).
- Only power up your drone while in the Start/Finish area on the course.
- When flying on the course, you must be positioned within the designated Pilot Area. DO NOT fly from any other area.
- When finishing a race, land in the designated landing area on the course.
- DO NOT power up in the pits or while walking from the pits to the course.
- Spotters/Team mates can stand in the allocated area with Pilot during the flight for communication purpose.
- Proper sportsmanship and conduct is to be exemplified. Examples of poor conduct would include, but are not limited to: affecting another Pilot's Race or Equipment by speech or any sort of tampering or aggressive behavior.
- Any Competitor attempting to win a competition by irregular means, fails to follow an Official's order, fails to observe the safety rules, who conducts in a manner unprofessional sport during the competition may be disqualified.

Spectator Etiquette

The event is fun to watch and discuss. However, please stay away from the pilots within the Pilot Area while they are flying (unless you are acting as a spotter). Clear communication is essential with the pilots for accurate lap scoring, penalties and hazard warnings.

Number of Models

- Each competitor may use a maximum of 2 models for the entire event with same specification after verifying it with the Inspection Committee.
- A model can be used by only one TEAM competitor per event.
- In case of an infringement to that rule, all concerned competitors will be disqualified from the event by the event Co-ordinator.
- The competitor can change the model:
 - ❖ Before the start of the race as long as the competitor hasn't left the preparation area.
 - ❖ Between two rounds of the qualification stage and elimination stage.

6. Race Course Obstacles

The course will consist of many obstacles including but not limited to gates and hurdles. Some obstacles have a defined requirement for considering them completed and enabling the pilot to move on to the next obstacle in the course. If a pilot misses or does not complete an obstacle successfully, they must go back and fly through the missed gate, hurdle or obstacle otherwise negative points/timing will be allocated according to obstacle difficulty level.

11. CHECK YOUR KNOWLEDGE

TEAM COMPOSITION: 2 members

REGISTRATION RULES

- In case of tie, the decision will be made by a tie breaker round between the teams.
- There will be four rounds and decision of the QUIZ CO-ORDINATORS will be final and binding to all.
- Questions will be of general awareness type.

Quiz-1st round:

- It would consist of 20 questions of 2 marks each. Top 8 Teams will be selected for the 2nd round.
- 2nd round will consist of 2 sub rounds.

Leader- 2nd A round:

- Each team will face 4 questions carrying 10 points each and no deduction from earned points on a wrong answer.
- For no answer attempted, question will be passed to next team it will be given chance to answer the question in 5 seconds and 5 point for right answer will be awarded.
- The team which answers all questions correctly will get an extra bonus question of 30 points.

Audio/Visual- 2nd B round:

- Each team will face 1 audio/video clip carrying 20 points and no deduction from earned points on a wrong answer.
- This round will be eliminator round also only top 6 teams will lead to 3rd round.

Play- 3rd round:

- Each team will be given 3 minutes in which they can face at max 10 number of questions within the given time frame.
- One team will be eliminated at the end of this round.
- Each Correct answer will be awarded 10 points and each wrong answer will take away 5 points
- If in case number of continuous skipped questions exceed 3 then a penalty of 50% on earned points will be imposed.

Ring - Final round:

- This will be a buzzer round for 3 questions, each correct answer will add 50 points to the score card and each negative answer will take away 30 points out of their score.
- In case of Tie 3 additional questions of 40 marks will be asked to all the 5 teams.

12. ROBO RACE

You think it is as easy as it sounds? Think again. This is the grand prix of all Robot races. Make sure your bot has the same grit and brawn as you to handle the heat of our tracks here.

- Build a manually controlled robot which is capable of racing on a rough circuit full of twist & turns.
- In the shortest period of time, it must be able to complete the track specified.

GENERAL RULES:

- Team can have a maximum number of 4 members.
- The robot should follow the robot specifications provided. Any deviation from the mentioned specifications will lead to disqualification.
- A team is allowed to play with only one robot.
- No test practice will be allowed on the main arena.
- The arena may subject to change before the commencement of any round.
- Touching the robot during the game will lead to negative points.
- Unfair game may lead to disqualification of the team.
- The robot should not damage the field. Damaging/harming the arena may lead to disqualification.
- The decision of the judges will be final and abiding. Argument with judges in any form will lead to the disqualification of the team.

EVENT RULES:

- Three times hand touches are allowed with penalty of 15 seconds for each hand touch, penalty time will be added further to overall time required by robot for completion of specified round.
- If any of the robots starts off before start up call, the counter would be restarted and the machines will get a second chance. If repeated again then team will be disqualified.
- Your robot must be ready when call is made for your team.
- Decision about your robot will be taken by the organizers.
- The structure of the robot should not be changed during the competition.
- During the game play, if any part of a robot is destructed/ dismantled/ damaged the participant will be given a timeout to repair at an expense of a penalty, while the next participant for will be called the play.
- Only 1 timeout will be given for any participant and the participant will repair it without the help from the mentor.
- No readjustment is allowed during the run.
- If the Robot crosses a checkpoint, and moves off track, then the Robot would be placed back on the previous checkpoint crossed.
- The game play consists of two rounds (a qualifying round and a final round)
- The participating teams will drive their robot individually in a track.

Qualifying Round

- A total of 5 minutes run time (arena time) will be given to every participant.

- A trial round will be given to each team then team has to perform on track with maximum time of 5 minutes.
- The better of 2 scores will be considered as final.
- If the total time taken by the robots exceeds 5 min's the participation would be disqualified.
- The time taken to complete the circuit including penalty and bonus points will be taken as your qualifying time.
- Each time the robot touches either one of the boundary, there will be a penalty of +2 seconds.
- The other penalties, bonus and scoring points will be informed on the spot.

Final Round

- Based on the qualifying time of each team, top 5 teams will make to the final round.
- Only 1 attempt will be allowed in final round.
- If the total time taken by the robots exceeds 5 min's the participation would be disqualified.
- The time taken to complete the circuit including penalty and bonus will be taken as your qualifying time.
- The two teams with minimum qualifying time will be declared as winners.

BOT SPECIFICATIONS:

- Lego kits/ Readymade Toy cars are strictly not allowed in any form.
- Use of IC Engines, and compressors aren't allowed.
- The ROBOT can have a maximum dimension of 350 x 350 (l x b) (all in mm) with a tolerance of 5%.
- The maximum potential difference between any two points should be 24 volts DC.
- Robot must have power supply on board. There will be no provision of external power supply.
- The maximum weight of robot can be 5kg. (Battery-weight included)
- The robot can be controlled by wired/wireless mechanisms.
- It should be controlled by a single person at a time.
- If the robot is controlled by wireless mechanisms, the robot must have a frequency remote control circuit which can avoid frequency interference with other teams.
- The length of the wire (for wired bots) should be long enough to cover the whole track (around 17m or more) and the wire should remain slack during the complete run.
- Robot must have only a single transmitting device.
- Robot must not leave any parts during run; else it will result in disqualification.

ARENA

- The track length and the number of laps will be revealed on the spot.
- The track surface and course line may have unevenness.
- There might be abrupt angles.
- The design and size of the obstacles in the race track will try to slow down the robot.
- Arena will consist of switch gate, down, seesaw, stone, pit, rollers, rotating disc, tunnel and other hindrances.

PHASE IN THE EVENT

- Competition is based on time trail system. There will be qualifying round for each team.
- The top team from qualifying round makes it to the final round on the basis of time trails.
- The Judge's decision will be final and binding to all.

13. PROJECT COMPETITION

- The students working on any innovative projects or the final year projects can participate.
- Projects from the following domain can participate:
 - ❖ Social Impact
 - ❖ Pharmaceuticals
 - ❖ H.A.P.
 - ❖ Chemistry
 - ❖ Agri/Rural Development
 - ❖ Energy Sector
 - ❖ Cutting-Edge Technologies (AI/ML/Robotics/Drone etc.)
 - ❖ Waste Management
 - ❖ Clean/Green technology
 - ❖ Water Resource Management

RULES

- Individual participation or student can participate in team (Max. 4) with one project.
- Participants will have to explain their concept to the jury.
- The Judge's decision will be final and binding to all.

14. MODEL COMPETITION

- The students working on any innovative models or the final year models or prototype can participate.

- Projects from the following domain can participate:
 - ❖ Social Impact
 - ❖ Pharmaceuticals
 - ❖ H.A.P.
 - ❖ Chemistry
 - ❖ Agri/Rural Development
 - ❖ Energy Sector
 - ❖ Cutting-Edge Technologies (AI/ML/Robotics/Drone etc.)
 - ❖ Waste Management
 - ❖ Clean/Green technology
 - ❖ Water Resource Management

RULES

- Individual participation or student can participate in team (Max. 4) with one project.
- Participants will have to explain their concept to the jury.
- The Judge's decision will be final and binding to all.

15. IDEA COMPETITION

- Individual member will participate in the event.
- Participants have to explore ideas for Business/ Startup/ Solution of Industrial problem Statement.
- The means of communication shall be Hindi or English only (English will be preferable).
- Each team will get max. 15 min. to present the idea and 5 minutes for question answer by judges.
- The judge's decision will be final and binding to all.

16. TECH CHARADES

Tech charades is a game where participants act out or pantomime words or phrases related to technology for others to guess. It's similar to traditional charades but with a focus on tech-related terms, such as computer hardware, software, internet terms, or technological engineering concepts.

- Players divide into teams.
- Each team takes turns selecting a word or phrase related to technology.
- One member of the team acts out the word or phrase without speaking, while the rest of the team tries to guess what it is within a time limit.
- The acting team cannot make any sounds or gestures other than those allowed in traditional charades.
- If the team guesses correctly within the time limit, they earn a point.
- Play continues with teams taking turns until a predetermined point total or time limit is reached.
- The team with the most points at the end wins.

17. TECH DEBATE

Tech debate is a structured discussion or argumentative exchange focused on topics related to technology. Participants present arguments, evidence, and counterarguments on various aspects of technology, such as its impact on society, ethical implications, innovation, regulation, and future trends. Tech debates often involve exploring diverse perspectives and fostering critical thinking about technological issues.

- Participants will be divided into 2 to 3 teams, typically with an equal number of members on each side of the debate.
- One team argues in favor of the topic (pro), while the other argues against it (con).
- Each team must present an opening statement.
- After the opening statements, each team has the opportunity to rebut the arguments presented by the opposing team. This phase allows for direct responses to counterarguments.
- members of each team can ask questions of the opposing team to clarify their arguments or challenge their positions.
- Following the rebuttal phase, each team presents a closing statement summarizing their main points and reinforcing their position on the topic.
- Judges decision will be final and binding to all.

18. LOGO COMPETITION

- Each team can have max. 2 members.
- Each team can submit only 1 logo.
- Logo may be in either soft copy in .pdf or .jpg or hard copy by drawing on a sheet.
- Participants will have to explain the concept used in their logo.
- Logo must be related to the theme provided.
- Logo must have originality.
- Judges decision will be final and binding to all.

19. CRACK THE CAD

It is an event where participants compete to solve programming challenges related to Computer-Aided Design (CAD) software. These competitions often focus on developing scripts, plugins, or applications that enhance or automate tasks within CAD software.

- Each team can have two members.
- Each team will have to complete task in the prescribed time limit.
- There will be 2 rounds.
Round 1 : 5 basic task will be provided with a time limit of 45 minutes.
Round 2 : 2 standard task will be provided with a time limit if 30 minutes.
- Judges Decision will be Final and binding to all.

20. CIRCUIT-A-THON

A Circuit-a-thon is an event where participants compete to solve a series of circuit design challenges within a set time frame. It's a great way for electronics enthusiasts and engineering students to showcase their skills and creativity in designing circuits to solve specific problems. These events often include various categories, such as analog, digital, or mixed-signal circuits. It's an exciting opportunity to test one's knowledge, problem-solving abilities, and teamwork skills in a competitive environment.

- Participation may be individual or in a team of two.
- Topic will be given on the spot.
- There will be 2 round.
Round 1 : Basic circuits
Round 2 : Advance circuits
- In case of tie, additional rounds may be taken.

21. STARTUP EXPO

A startup expo is an event typically organized to bring together startups, investors, mentors, industry experts, and potential customers. It serves as a platform for startups to showcase their products or services, network with potential investors and partners, gain exposure, and gather feedback. These expos often feature booths or stalls where startups can set up displays, demos, and presentations to attract attention and engage with attendees. Startup expos are valuable opportunities for entrepreneurs to connect with the broader startup ecosystem, explore collaborations, and seek opportunities for growth and funding.

- Startup must have uniqueness, originality and impactful.

22. E-SPORTS

Esports, short for electronic sports, refers to competitive video gaming where professional players or teams compete against each other in multiplayer video game competitions. Just like traditional sports, esports has professional players and teams who compete at the highest levels. These players often dedicate countless hours to practice, refine their skills, and develop strategies to excel in their chosen games.