About Tetsurofest

"Some say the cup is half empty, while others say it's half full. However, both the views are wrong. The real problem is the cup being too big! Sometimes all that we need is a new perspective on an old problem to rule the world! Mechatronics Engineering is the latest perspective to solve all integrated Engineering problems! "Sri Krishna College of Engineering and Technology (SKCET) is one of the most reputed institutes in Tamil Nadu. Over the years, SKCET has maintained the reputation of providing the best quality services in education and sports. TetsuroFest is the annual Techfest of the Department of Mechatronics Engineering, SKCET. The event sees it's oncoming this year and aims to kick-off with a head start. Although the word Mechatronics has been around since 1969 – the term was coined by Mr. Tetsuro Mori, a senior engineer of the Japanese company Yaskawa – it was only in the early 1990s that it began to be used to any great extent in the UK. So, we decided to commemorate this event with due respect to him.

The event wishes to be more than just a technical festival to an attracting and concrete platform displaying a tremendous interest for science & technology. It effectively builds up into an energetic and healthy competition amongst the best talents. The integration formed by the blend of multi-disciplinary fields and modern technology leads to an active exchange of facts that agitate your engineering curiosity. With some of the best minds of the state descending under one roof, one can be sure to go back motivated. It's time to unleash that passion, explore the Archimedes in you, find the Inventor in you, delve into rigorous coding, operate bots and swerve RC cars! Tetsuro Fest 2015 is willing to Integrate the Varied! Are you?

ABOUT College

The college was started in 1998, with 180 students, 18 staff and 4 branches of B,E.. In a short time span it has grown in size and stature and has present more than 2515 students are studying in 6 branches of B.E., B.Tech., M.E., MCA, MBA, M.Sc., B.Sc.,. To meet the rise in the student's strength, the faculty strength has also risen to 175. There is a good team of supporting staff to assist the departmental work. The college has already carved a niche amongst the public, AICTE, DOTE and the university.

LOCATION

Situated at Sugunapuram in Kuniamuthur. The campus is 1 km off the NH 47 connecting Coimbatore and Palakkad and 3 km's off the NH 209 connecting Coimbatore and Pollachi. 8 Km's from the Coimbatore Railway Station 12 Kms from the Central Bus Station, Gandhipuram 18 Km's from the Airport And well connected by city buses and mini-buses.

Highlights

* 30.2 acre campus

* Has already more than 4.65 lakhs square feet of building built up for instructional purpose

* There are 45 laboratories catering to various departments.

* 14 computer laboratories with about 900 computers connected in the network with 3 powerful Intel Dual Xeon processor based servers

* Unlimited Internet access to students and staff

* Fully automated and centrally air-conditioned library with nearly 24,000 volumes and 775 periodicals including 401 foreign periodicals, 150 online journals in 55,000 sq.ft. Separate block.

* Very spacious and comfortable class rooms with all facilities

* Separate halls of residence for men and women with all amenities within the campus

* Residential tutors in the halls of residence for counseling and guidance

* A fleet of 14 buses

* Excellent sports field and facilities for all indoor and outdoor games.

* Fully developed Placement Division to take care of Project Placement, Summer Placement and Final Placement

Speciality

* Effective teaching-learning process and is fine tune by proper feedback

* Regular courses on personality development

* Seminars to improve communication skills

* Ample scope for co-curricular and extra-curricular activities

* Need based and Value added special computer training Programmes in the campus

* We teach the students to be life long learners.

Our Mission

Our mission is to impart the highest quality of technical education, provide impetus to research and development, foster innovation in the technological growth, encourage entrepreneurship and strive to solve problems of mankind. We also endeavor to embed the greatest values of human life and inculcate the will to attain progress and prosperity in life in socially accepted norms, to remain an asset to our nation and be a part of its pride and heritage.

Quality Policy

We at Sri Krishna College of Engineering and Technology are dedicated to provide quality technical education to the satisfaction of all our Customers through,

- ❖ Motivating our students towards success
- ❖ Involvement at all levels
- ❖ Continual update of all facilities
- ❖ Creating opportunities for placement
- ❖ Providing education in a discipline atmosphere

Quality improvement of faculty

EVENTS

With some of the best minds of the state descending under one roof, one can be sure to go back motivated. It's time to unleash that passion, explore the Archimedes in you, find the Inventor in you, delve into rigorous coding, operate bots and swerve RC cars! TetsuroFest 2014 is willing to integrate the Varied! Are you?

PAPER PRESENTATION

Paper Presentation event provides you a strong platform to present your innovative ideas thereby enhancing your presentation, communication and technical skills. Here, you not only get the chance of making the world appreciate your work but also gain real recognition of your work, helpful feedback on ideas, valuable connections with eminent industrialists and lead researchers. So give way to the hidden researcher inside you, here is your chance to show the world what you got!

RC RACING

Ready, Steady, Get Set, Go.... Be there with your wheels to Pace up to Race in the dirty sands. Get ready to face the obstacles set to have a taste of victory. Make a wireless remote controlled machine, powered only by an IC engine, which can race against other opponents on an off-road dirt track with few obstacles. Are you game to witness the thrill, the euphoria and the celebration of an amazing race! Then this is the place you should be.

PATH FINDER

Have you got a Loyal R'bot that will obey your commands like a pro? Then you are at the right place. A line following robot is a self operating robot that detects and follows a line drawn on the floor. The path to be taken is indicated by a black line on a white surface. The control system used must sense the line and maneuver the robot to stay on course while constantly correcting the wrong moves using feedback mechanism, thus forming a simple yet effective closed loop system. Your line follower robot is to follow a black line over a white background and complete the given track. The fastest and the finest of the robots will be declared as the winner. The game rule is simple, just Command your friend to follow a simple line.

CAD MODELING

CAD Modelling event allows you to think out of box and design the displayed product by implementing your ideas which will showcase your imaginative skills, creativity, that will help your design the given model. A challenging event wherein the participant competes against time and fellow CADD maniacs to create 3D models and assemblies. Contestants, who are experts or otherwise, are welcome to participate in this event to showcase their designing skills. Participants will be given 2D designs of components of a machine part. They will have to work in their respective teams to make solid (3D) models of the parts and assemble them within the stipulated amount of time.

AEROMODELLING

This event will provide wings for those who desire to aviate beyond the sky and propel their thoughts beyond the unreachable. It's now time to conquer the sky and shadow the earth with your flying dragon. Aeromodelling is the design, construction and flying of model airplanes, helicopters and rockets. It is both a Hobby and an International Sport Model aviation's power to excite the imagination and generate enthusiasm has made it a truly international activity with many thousands of participants and hundreds of ongoing activities worldwide. Today, you can build model airplanes of incredible realism and fly them as expertly as a real pilot sitting at the controls. Aeromodelling helps to under Physics, improve hand and eye coordination, understand the importance of team work, learn to cope with success and failure, create 3D objects, learn to work with plans, use hand tools etc. Aeromodelling is a wonderful form of self expression that gradually leads you to a successful career as a Pilot, Aircraft Designer, Aircraft Maintenance Technician, Aero-Space Engineer etc.

WATER ROCKETRY

It all looked so easy when you did it on paper— where valves never froze, gyros never drifted, and rocket motors did not blow up in your face. Launch your rockets and let us see whose goes the farthest. Water rocketry is a type model rocket using water as its reaction mass. The pressure vessel, the engine of the rocket is usually a plastic soft drink bottle. Here, we evaluate the team's construction of rocket, fins usage and the distance covered by the water-rocket. The competition involves team's distance flying of water rocketry under an agreed pressure and angle of flight. The greater distance of rocket is recorded. Ready, set and go!

CIRCUITRX

Finding faults is a bit of a talent we say! Don't you accept? Of course, for doing that you have to know what perfection means. We present you with two streams of circuit building. What's more... .. You can choose your stream! Make the right connection and win the game with your circuit building skills. Electrical stream students. Explore the nodes and junctions. Find out the magic where and when electron flows and the bulb glows! For the Mechanical stream students out there, build a fascinating hydraulic and Pneumatic circuit and make the cylinder move or the motor rotate.

Colors - Online Contest

Is that your best shot? We know that Pictures mean a lot. What does your snap portray? Come on! Expose your Photography Skills to the World! It's quite simple ;) All that you have to do is, Take your Camera and click the best snap! Exciting Prizes for the best Snaps!

Street Soccer

There are dozens of different street football games- Cubbies, Three and In, Asses, Ten Shots, Four Nets, Boston Cage and many more... And there are dozens of different terrains suitable for street ball- From Basketball Courts and Tennis courts, to Pavements (make sure there are no cars!), Sidewalks, Town Squares and more... The challenges are similar, and playing with a proper Street Football can give you the best preparation for a real grass pitch. Amazon offer some Footballs which are great for the street. If you find yourself playing Street Football (Street Soccer) a lot, or on any rugged asphalt, concrete or cement surfaces, you might find that a standard football might not be durable enough. That's why some footballs are designed to be street footballs. Not only might playing football in the street wear your ball more quickly, but it also will be much harder to control: a hard surface such as the asphalt doesn't slow the ball down like your standard grass pitch, it might even cause your ball to roll faster! So the Best Street Football Balls actually try to replicate the roll and feel of playing on a grass pitch. Cash prizes of upto Rs.10, 000/- are waiting to be grabbed. So why wait? Join the League. Be the Champion.

Treasure Hunt

Got bored in technical terms? Then come on..... Let's hunt for the fun, we have the treasure hunt. Group yourself, race for the treasure, hit the jackpot. Ahoy Guys! Prepare to be boarded! The event is divided into two rounds. A preliminary written test containing riddles and puzzles will be conducted for all the registered teams. Based on the results of the preliminary round, teams will be selected for the final round. In the final round the teams will be provided with the first clue by the co-coordinators from where the actual hunt will begin. The first clue when solved will lead the team to successive destinations where the other clues can be found. The teams must understand and solve all the successive clues to reach the final destination.

ROBO RACING

Come up with a manually controlled ROBOT which should travel the given path with minimum time. The path is stuffed with various obstacles (meant for reducing the robot's speed). If u think your BOT can do this, "YOU ARE MOST WELCOME".

CAD MODELLING

Competition Format:

1. **Online** - Registered Participants should send an abstract of the concept or initial design on their preferred problem definition(s) in the form of text or pictures (hand drawn or digital form) to the co-ordinators.

2. **Round 1** - During the day of event, participants should submit a softcopy of the following for the team to review before the specified time

-IGES/IGS or STEP Files of your model

-Native CAD Files (Original Files in the format of your desired Software)

-Drafting of your model with major dimensions (part and assembly drawing)

-Rendered Images of your model

-Animation of your model if applicable

-A description of at least 500 words explaining your model

* Pack all these files and save it in a folder named after your team name and participant's name.

* Multiple Entries for the same problem definition are welcomed but only one work can get selected for the next round

* Multiple Entries for different problem statements are also encouraged but only one work per problem definition can get selected for the next round

3. **Round 2**-Succesful Participants from first round will be called via phone for the next round on the same day, where participants can showcase their model in front of a panel of judges.

The Contents to be presented in this round can be in the form of ppt, video, pictures or any other mode of presentation.

The following should be presented to the judges

-Explanation and justification of your Concept

-Translation of your Concept to CAD

-Detailed Working of your model (Animation if possible)

-Proposed Methods of Manufacturing

-Your score for your model (out of 100)

The Presentation would be followed by a query session

*Participants are requested to prove their originality of work if asked (A video capture proving the same is encouraged)

Rules and Regulations:

- Team can have a maximum of 3 members.
- Participants can use any 3D Modelling software for their designs.
- No drawings will be given on site. The participants are required to choose their own concepts for design as per the problem statements.
- Multiple Entries for the same problem definition are welcomed but only one work can get selected for the next round
- Multiple Entries for different problem statements are also encouraged but only one work per problem definition can get selected for the next round

  (I.e. A team selected for one Problem statement 1 can get selected for problem statement 2 also, but not two times for the same problem statement).

Judging Criteria:

1. Concept.
2. Originality.
3. Aesthetics & Ergonomics.
4. Level of Detail in CAD Model.
5. Presentation of your Model (Quality Of rendering and Animation).
6. Manufacturability & Level of Engineering.
7. Description of Design.

Problem Definitions:

Problem Definition 1:

Mr. Karthi is an IT Professional. He was met with an accident in which he lost his one of his legs. He went for a wheel chair, but he suffers a huge trouble locomotion and back pain with the ordinary wheel chair. He is in need of a system that guides him easy movement between the cabins in office and in home that eliminates the above trouble. So design a system for Mr. Karthi.

Problem Definition 2:

Mr Karuppusamy is an agriculturist for the past 25 years. Due to increased wages for workers he was unable to run his farm. So he decides to reduce the no of workers in his farm, but he is in need of an alternative method for seed sowing in his farm that would reduce wage of atleast 20 workers per day. So help Karuppusamy with a system for seed sowing.

*The coordinators of the event reserve the right to change any or all the above rules according to the necessity.

For further details contact Event coordinator:

S.GOWTHAM - 9487869798

NAVEEN.N - 9629660946

VINEETH.A - 9842769731

CIRCUIT BUILDING

This event comprises of 2 modes:

- ✓ Hydraulics and Pneumatics Circuits (H & P)
- ✓ Electronics Circuits (EC)

The contestants can choose any one of the two modes based on their interest.

The contestants can participate a maximum of 2 per team for both modes of events.

Both events have 2 rounds:

1. Prelims (Written)
2. Experimentation of the circuit

RULES FOR CIRCUIT BUILDING EVENT:

Round 1: Prelims (Written)

- ✓ The participants will have to answer 20 one word questions, within a time frame of 30 minutes.
- ✓ This is an elimination round and only 10 teams from each mode will be selected for the finals.
- ✓ Tie ups in the marks will be judged on the basis of the time taken to submit back the paper. So the faster you submit it, the better.

Round 2: Experimentation of the circuit

- ✓ Teams that will qualify after the first round will build an Application. The theme of which will be disclosed on the spot.

- ✓ The circuit diagram for the given theme has to be drawn initially.

- ✓ Each team will be allotted one computer having preinstalled software.

- ✓ The teams can design and test their circuits by simulating the given theme using the software.

- ✓ Teams will have to save their design on desktop with their team number as the filename.

- ✓ After showing the simulation the teams have to implement the same using the H & P components provided by us.

- ✓ The contestants who are not familiar of the software used for H & P can also participate.

- ✓ For EC event, the procedure similar to H & P is carried out except that there is no simulation of circuit.

- ✓ The allotted time for 2nd round will be 45 minutes only.

For further details contact Event coordinator:

T.PADHAMANTHAN - 8015737469

LEANDER JONES.C - 9486116746

MOHAN RAJ.G - 8056810901

CODING

"Codificar el undo" (CODE THE WORLD)

General Instructions:

- This is a team event.
- Participation for this event is open for Engineering and MCA students.
- Students from any engineering discipline/ branch can participate.
- Students with valid ID cards are eligible to participate.
- Each team will comprise a maximum of three members. Students from different institutions can also form a team.
- Team composition cannot change once the team has been registered.
- Top 3 teams will be awarded with cash prize.
- Participation Certificates will be issued to all the teams.
- Organizers decision will be final and binding.

Game Plan:

Round 1 (Mr. Perfect): (Duration - 1 hour)

Scratch your Brain and Correct the Error

- Teams will be provided a set of 25 questions.
- Each question carries 5 points.
- Star-marked questions will carry 10 points and will be preferred in case of a tie.
- Aim of this round is to eliminate the error and make the code fully functional in case of implementation.
- Top 50% teams will qualify for the final round.
- Programming Languages used – C , C++.

Round 2 (Code Master): (Duration - 2 hours)

<u>Code the World and Begin your Reign</u>

- Qualified teams will be provided 5 problem statements.
- Teams must write the code to crack the problem statement.
- Aim of this round is to estimate the Problem Solving approach of the teams along with Effective use of codes to solve the problem.
- Programming Languages allowed – C, C++, and Java.

<u>For further details contact Event coordinator:</u>

SIDESHWARAN.M - 9688044581

AGHIL SANTHOSE.N.D - 9976193047

TAMILARASU.E - 8122995479

Poster Presentation

Rules & Regulations:

The poster must include the following:

1. Title
2. Names of author(s) and affiliated organization(s)
3. Abstract (brief summary of objectives, methods, results, and conclusions)
4. Background Information
5. Project Objectives
6. Materials and Methods
7. Results (tables, graphs, charts)
8. Conclusions

The title and presenter(s) name(s) and affiliation(s) must be at the top of the display. The recommended size for the title is approximately 1-2 inches (2.5-5 cm) high. Material must be presented from left to right, starting at the top left of the panel, under the title. Presenters should use a minimal amount of text consistent with providing enough information to emphasize essential data and/or stimulate discussion.

All illustrations, drawings, charts, pictures, graphs, figures, other visual aids, and written text should be sufficiently large to allow them to be read or seen easily from a distance of 60 inches (1.5 m)

Photographs, if used, preferably should be matted and finished to enhance visibility.

Presenters are responsible for setting up and removing their poster displays during the designated times.

For further details contact Event coordinator:

RAVI SHANKAR - 9043891989

JOHNSON .P - 9894944017

SIVAKARTHIK.P - 9715881458

PROJECT PRESENTATION

RULES:

- ✓ A Project must be of a **Mechatronics** System only.
- ✓ It must Comprise of Mechanical System design and selection of electronic components along with its circuit design.
- ✓ Project members must present their work through ppt slides for 15 minutes duration.
- ✓ The ppt slides must compulsorily include the followings:
    1. Title pace
    2. Objective
    3. Methodology
    4. Design calculation of overall system and components design
    5. Brief description of any algorithm used, if any
    6. Conclusion
- ✓ Submit Project report not exceeding 20 pages
- ✓ Display of the Prototype/Model of the project is **compulsory.**

For further details contact Event coordinator:

ARVIND PRABHU	9994747404
GILBERT GERARD M	8754674447
SASTIVEL M	9159417919

QUADCOPTER

RULES:

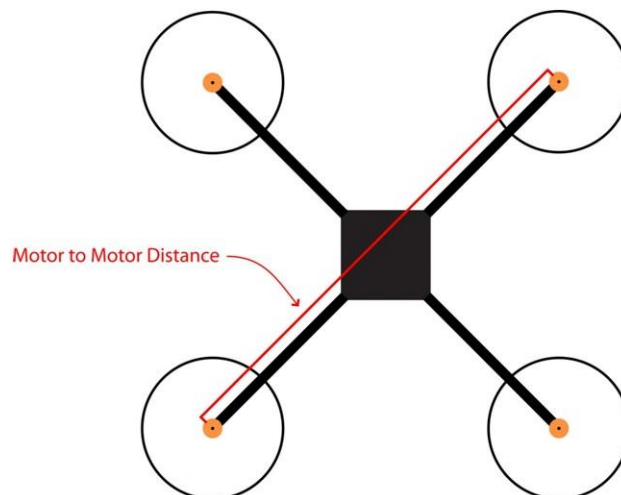|	
Max. Team Size	– 4 members
Multicopter type	– Tricopter / Quad Copter
Max. Motor – motor distance	– 500 mm (see picture below)
Max. Flying weight	– 1.2 kg (with battery)
Wireless controller	– 2.4 GHz operating frequency
Flight control board	– DJI NAZA, APM 2.5, Boards with GPS are **NOT ALLOWED**
Max. Propeller diameter	– 10 inches

Motor to Motor Distance

The whole Multicopter with propellers must fit into a *circle of diameter 754 mm ~ 30 inches.*

ROUND – 1

- ✔ The pilot should fly the Multicopter from a small circle marked on the floor and hover the Multicopter steadily for 30 seconds and then land within the same circle.

- ✔ The steadiness of the Multicopter during hover and the accuracy of landing the Multicopter within the circle are taken into account for providing points.

ROUND – 11

- ✔ This round is used to estimate the payload capacity of the Multicopter. A load of 250gm is fixed to the Multicopter and the longest time of hovering with the load is measured.

- ✔ The total weight of the Multicopter and the time of hover are taken into account for providing points.

ROUND – 111

- ✔ This is a surprise round. Come over here to know about this round, this round will be fun and at the same time a bit difficult for the pilot to manoeuvre.

For further details contact Event coordinator:

SANTHOSH.R - 9043190738

BARATHKUMAR.A.P - 9943261000

MURALIKRISHNAN.R - 9443252062

R C   R a c i n g

Rules:

- There will be a qualifying session with each team getting 2 laps out of which the faster lap will be considered. Note that these laps will have to be taken successively

- The top teams from the qualifying rounds will make it to the second round.

- After the qualifying round, there will be races between multiple cars at a time. So the participants must use a remote with frequency of band spectrum 2.4 GHz.

- The track will have check points at regular intervals. If a machine tumbles, halts or goes off the arena at any point on the track, one of the team members is allowed to lift it up and place it at the nearest checkpoint behind that point. The time shall still be running in the meantime.

- Team members are not permitted to touch either their machines or those of their oppo-nents once the race begins (unless there is need to lift the machine as stated in fourth point). The penalty for doing so is disqualification.

- In the qualification round, a maximum of two team members are allowed from a team in the racing arena while in the final round only one of the team member will be in the racing arena except the controller on the stand.

- The machines are not allowed to leave any loose parts on any part of the arena. Any machine disintegrating during the race will be disqualified.

- If any of the machines starts off before the flag is waved, the counter would be restarted and the machines will get a second chance. However, if any machine starts off before the waving of flag (or countdown) for a second time, it will be disqualified. No rematch will be held for the second time.

- Teams are not allowed to purposefully damage the machine of the opponent's team. If found doing so on track (while racing), the concerned team will be disqualified. Execution of last three rules will be subjective and relies completely on judges' and organizer's discretion.

- The decision of the judges will be final in all cases.Two calls will be made for the teams to report at the driver's stand before the start of the race and teams who fail to report in the 2nd call will be disqualified.

For further details contact Event coordinator:

AJAY KUMAR – 9047350494   **HARISHBABU.R** – 8807221440

THIRUNAVUKKARASU.B - 8438527564

Street Soccer

<u>Rules:</u>

1. Each team shall register a maximum of 8 players.

2. Only 5 players per team are allowed in the playing pitch at any one time. Each team should consist of 1 goalkeeper and 4 players. The minimum number of players permitted to start or finish a match is 5 players of which 1 must be a goalkeeper.

3. Each match shall consist of two 7 minute halves. Teams to change sides after the first half with play resuming immediately thereafter. Players can be substituted at any time during play only after obtaining permission from the referee, but the substituted player must leave the pitch before the replacement enters.

4. A goal scored direct from a goal kick situation is not considered unless the ball is deflected off another player on the pitch.

5. After each goal, play resumes from the half line.

6. All free kicks are indirect free kicks.

7. Only the goalkeeper is allowed to handle the ball within his own penalty area. The goalkeeper cannot make contact with the ball outside the penalty area when the game is in play, otherwise a penalty will be awarded to the opposing team.

8. During play, the goalkeeper is only allowed to use under the arm throw to send the ball to another player, with the ball not rising above the level of his shoulder.

9. When the ball goes out-of-play along the sidelines, a "kick-in" will be awarded against the team that last played the ball. The player conducting the "kick-in" must kick the ball into play ensuring that the ball does not rise above his shoulder level. For breach of this rule, a "kick-in" will be awarded to the opposing team.

10. When a ball goes out-of-play along the goal line, a "goal-kick" is awarded to the team whose goal line the ball crosses, irrespective who last played the ball. The goalkeeper takes a "goal-kick" only, with the ball in a stationary position anywhere within his/her penalty area. A goal can only be scored after another player makes contact with the ball. For any breach of this rule, the "goal-kick" will be re-taken.

11. In an intentional back pass situation, the goalkeeper is not allowed to handle the ball. A free kick will be awarded to the opponent for breach of this rule.

12. A "penalty" is conducted with the goalkeeper positioned within his penalty area. All other players must remain out of the way but within the pitch. Once the referee is satisfied that the player and the goalkeeper are in position and ready, the player will take a shot at goal from outside the goalkeeper's penalty area without undue delay. If the shot is deflected into play the ball is considered 'in play' and the game resumes automatically.

13. Any forms of rough play e.g. tackling a player's feet, body-checks, pushing, tripping, etc. is strictly forbidden. Ungentle manly and violent conduct, e.g. using verbal obscenities, obscene gestures, arguing with the referees, fighting etc. is also forbidden. A first caution or "Yellow Card" is shown to a player for infringement. For any subsequent caution, the player is shown a "Red Card" the player is disqualified from further play and barred from participation for the rest of the tournament. The match then resumes without any replacement for the disqualified player.

14. In the event of a "draw" at the end of regulation play the match goes into "sudden-death" penalty kicks. Maximum of 5 kicks per team will be taken. If after the penalty kicks the team scores are still tied then the referee shall decide the winner of the match by a "toss of Coin".

For further details contact Event coordinator:

I.PRAVEEN - 9698194000

DHYANESH.G - 9790141633

SREENATH.P - 9042573964

Treasure Hunt

Rules:

- A team can have 2 to 4 person
- No external help like calculator, Mobile, electronic gadgets should be used.
- Participants can register online or just turn up at the venue for the prelims.
- Violating any of the rules will result in the elimination of the concerned team.

Round 1:

- Duration – 15 minutes.
- 15 questions.
- Top 10 teams reach finals.

Round 2:

Duration – 1 hour and 15 minutes

- 10 clues to reach destination.
- Teams should travel by foot only.
- Teams should not split up.
- Top two teams win and winners should complete the hunt, handing over the 10 clues to organizer.

For further details contact Event coordinator:

SAKTHI.B - 8973344115

KAVINRAJ.T - 8526949602

DEEPAK KUMAR.Y - 8144067775