



# Raj Kumar Goel Institute Of Technology

## VOUGHAN

### THE VOICE OF EEE DEPARTMENT

## AUGUST-SEPTEMBER 2019

VOLUME-5  
ISSUE-5





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# INDUSTRIAL VISIT CENTRAL ELECTRONICS LIMITED GHAZIABAD

An Industrial visit to "CENTRAL ELECTRONICS LIMITED Industrial area Sahibabad Uttarpradesh" was organized by the Electronics and Communication Department of Raj Kumar Goel Institute Of Technology on Friday, 2<sup>nd</sup> of August 2019.

32 students of second year accompanied by Mr. Vaibhav Sharma and Mr. Manish Kumar Srivastava visited Central Electronics Limited. In the morning at 10:30 am the team reached Central Electronics Ltd. The Technical Head of Central Electronics Ltd. conducted a very informative session for the students. Initially there was a presentation on the domestic and global opportunities for the ECE students & various other aspects of the electronics industry in India & abroad. Also he motivated the students to select their domain and area of interest in areas like SOLAR PHOTOVOLTAIC (SPV) AND SOLAR MODULES which have tremendous growth rate in upcoming time.







Finally he gave a brief introduction of Central Electronics Limited which is a Govt. of India Enterprise under Department of Scientific & Industrial Research (DSIR), Ministry of Science & Technology. It was established in 1974 with an objective to commercially exploit the indigenous technologies developed by National Laboratories and R&D Institutions in the country.

There after the Team visited the production line area where they saw how solar modules are prepared starting from raw wafer to a completely developed solar cell . The team also got an opportunity to see the sun stimulation process used to check the solar modules , the team visited in campus solar park that was fully solar operated the garden had solar tree , solar traffic signal pole, portable solar bullock cart etc.

It was an informative, interesting and a successful visit. We express our thanks to the Technical Head and all team members of Central Electronics Ltd. who spent their valuable time for us. We also thank our respected Director sir and HOD who arranged such an informative program.

# INDUSTRIAL VISIT YAKULT DANONE INDIA PVT. LTD

The students of 2<sup>nd</sup> year visited the Yakult Danone India Pvt. Limited, Sonapat on 12<sup>th</sup> September 2019. The students were accompanied by 3 faculty members Mr. Manish Kumar Srivastava, Mr. Rakesh Kumar and Mr. Jassu Kumar. Firstly, the team was introduced to Mr. Adesh, the employee of Yakult. He gave presentation about the overview of Yakult industry. This presentation was about the Yakult and their history. He also told about the first use of fermented food to make our life healthier. He introduced the team about the emergency layout of industry in any accidental cases.

The tagline of Yakult is "Love your Intestine."

He introduced the team to his colleague Mrs. Swati. She briefed about the science behind Yakult. She told about the number of studies or researches done on Yakult unique probiotics. There are more than 100 human studies done on Yakult unique probiotics. There are two research institutes of Yakult: Japan and Europe where more than 200 scientists are researching for improvement in Yakult product.





### Studies about YAKULT:

- Yakult- prevent from diarrhoea
- UK study prevents from infection in athletes (cold and cough)
- Increases ink- cell activity
- Prevents from breast cancer

### Advantages of YAKULT:

- + Digestion of food and Absorption of nutrients.
- + Removal of waste material in form of stools.
- + Contains 70% Immune cell which protect us from harmful bacteria.



# INDUSTRIAL VISIT NTPI, FARIDABAD

An industrial visit was organized for the students of 3<sup>rd</sup> year, on 13<sup>th</sup> September, 2019. The trip comprised of forty students and faculty members Mr. Kunal Lala and Mr. Deepak Kumar.

NTPI( known as National Thermal Power Institute) Faridabad, is a public sector undertaking. NTPI's core business is generation of electricity and sale of electricity to state owned power distribution companies and State Electricity Boards in India. Firstly there was an interactive session with the student about one and half hour. In this session the trainer told us about the company, their work , their cooperation with the government. Besides these, they also told about the history of power plant generation and the three steps that involve in power plant : Generation, Transmission and Distribution.





They further explained the different types of power plant generation and told us about Hydropower plant project. The team was apprised that India is rich in power plant (In East Region) and we have 7 nuclear power plants in India.

After the lunch break the team visited the simulation room and got to know about the whole process of power generation.

Therefore , the Industrial visit was very informative and helped the students get up-to-date with the latest technologies and trends in the industry . It inspired the students to work hard and pursue research as an option.



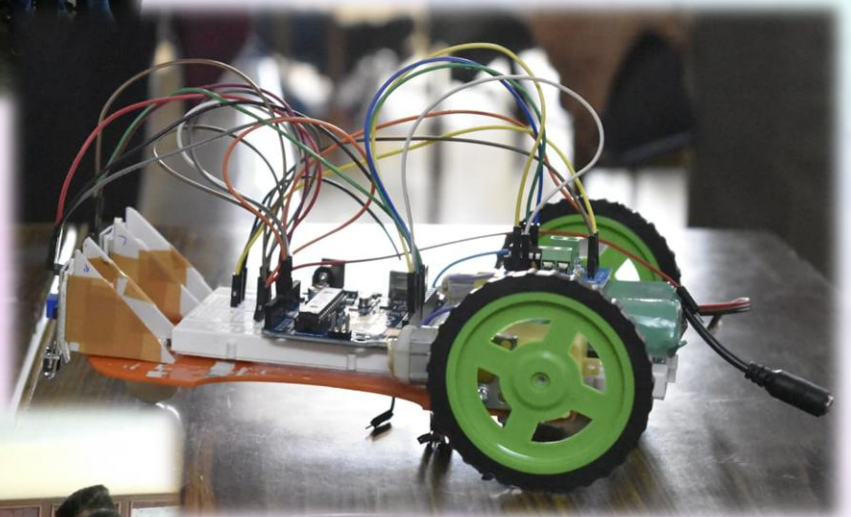
# THE MENTAL FLOSS 1.0

The MENTAL FLOSS 1.0 competition based on live projects was organized under the Embedded Systems and Robotics Lab of the ECE Department on Thursday, October 3 under the guidance of Mr. Abhinav Bansal. In this competition participants had to create live projects using micro-controller.

A 2-day workshop was organized by students of ESR LAB on 21 and 22 September before the competition, in which the participants were taught about micro-controller, sensors and the projects created in the competition were based on this workshop. The classes were conducted by few of our ECE dept. final year students Kinjal Sinha, Shirsh Gupta, Aditya Chawla, Utkarsh Gangwar, Vivek Tiwari. In this competition, students of all branches of first and second year participated, 48 students participated in the competition of which 28 students were from CSE, IT branch and 14 students from ECE branch. The event was conducted to spread awareness about the technologies surrounding us that is Embedded System.

On 3<sup>rd</sup> of October the final round was organised in which they were given a task to make a line follower. The track was full of obstacles that they had to go through and various parameters were set for judging the competition. It was judged by Mr. Anuj Kumar and Mr. Vaibhav Sharma, faculty of ECE dept. The competition was won by second year students. All the participants participated with great enthusiasm, which shows that this initiative of Embedded Systems and Robotics Lab proved to be right. Overall the event was productive and fruitful for the participants as well as the mentors.





# TATVA-2K19

TATVA'19 the annual tech fest of RKGIT held during 3<sup>rd</sup>-5<sup>th</sup> October, 2019 was a great success and a bigger milestone for our college. A total of 45 events were organized out of which for 6 events. the very first time RKGIT opened its doors for other colleges. Under the cultural council, Group dance and Street Play, under the literary council, Parliamentary Debate and Business Plan, under hobby council, Lan Gaming and Robo-war were the events that saw a participation of 10+ colleges of Delhi-NCR Circuit.

The theme was horror that symbolized conquering fears. The theme showed that things could be frightening but when you stand firm you emerge as winner.

The event witnessed many famous personalities as judge for various inter and intra college events. The students not just participated but even mentored their juniors, the event was mix of emotions where people cried and laughed at the same time. The event proved to be a chance for many students to come forward and share their unique talents with the college.

On the third day, famous singer and lyricist Gajendra Verma stole away the evening with his amazing songs and after that DJ Zydec mesmerized the crowd with his EDM tracks







## पुरस्कार वितरण के साथ वार्षिकोत्सव का समापन



एनबीटी न्यूज, मेरठ रोड : विशिष्ट अतिथि डॉ. ममता जाफा और आरकेजीआईटी का 3 दिवसीय एस.के. वर्मा थे। इंटर कॉलेज ग्रुप डॉस में आरकेजीआईटी और लैन गेमिंग में आईएमएस विजेता रहा। मोहक, कुणाल, रवि कुमार, सूर्य प्रताप, आरिफ अली,

**आरकेजीआईटी में तत्व -2019 का शानदार समापन**  
बॉलीवुड सिंगर गजेन्द्र वर्मा ने एमएलसी (स्नातक) चुनावों में जीत के लिए दिनेश गोयल की दी शुभकामनाएं



आरकेजीआईटी में तत्व-2019 का शानदार समापन। गजेन्द्र वर्मा ने एमएलसी (स्नातक) चुनावों में जीत के लिए दिनेश गोयल की दी शुभकामनाएं।



## आरकेजीआईटी में तीन दिवसीय वार्षिकोत्सव तत्व 2019 का आयोजन



तीन दिवसीय वार्षिकोत्सव तत्व 2019 का आयोजन किया जा रहा है। आज के इस प्रोग्राम के मुख्य अतिथि श्री अनुराग पुनेज (न्यू एंकर लोक सभा टीवी), मिस प्रिया सिंह (मिस इंडिया एशिया स्टार 2018), श्री देवेन्द्र सुक्ल (रिजर्व हेड लोक सभा टीवी), श्री अश्वतथ गोयल रहे। संस्थान के



## DEPARTMENTAL ACHIEVEMENTS

1. Dr. Himani Mittal published a paper titled, "Multidirectional Reconfigurable Router for Network on Chip (NoC)", in Journal of the Gujarat Research Society, Volume-21 Issue-01.UGC-CARE List Group: Group D,ISSN: 0374-8588 | Impact Factor 4.3.Web Link:<http://gujaratresearchsociety.in/index.php/JGRS/article/view/34>.
2. Dr. Himani Mittal attended one week workshop on " Understanding the Human Being Comprehensively- Human Aspiration and Its Fulfillment" by TEQIP-III , AKTU Lucknow at Ajay Kumar Garg Engineering College, Ghaziabad, 24th-27th August 2019.
3. Dr. Puneet Chandra Srivastava attended a three day workshop on "Design Thinking For Strategy And Innovation For The Faculty Members Of AKTU Affiliated Colleges" from 6<sup>th</sup> to 8<sup>th</sup> September 2019 at IIM Lucknow.



4. Mr. Abhinav Bansal attended a three day workshop on "Design Thinking For Strategy And Innovation For The Faculty Members Of AKTU Affiliated Colleges" from 6<sup>th</sup> to 8<sup>th</sup> September 2019 at IIM Lucknow.



# FACULTY TECHNICAL CORNER

## NOVEL, HIGH-PERFORMANCE DIODES AND TRANSISTORS

Today's computer processors are increasingly pushed to their limits due to their physical properties. Novel materials could be the solution. Physicists from Martin Luther University Halle-Wittenberg (MLU) have investigated if and how these materials might be developed. They have created, tested and filed a patent for a concept that utilises the latest findings from the field of spintronics. The team reported on their research in the journal ACS Applied Electronic Materials.



With their new concept, the researchers at MLU want to improve the properties of diodes and transistors. Common processors use thousands of diodes and transistors to process data. "The energy efficiency of these individual components determines how much energy is consumed by the processor overall," says Professor Ingrid Mertig, a theoretical physicist at MLU. Energy loss, which occurs when electrical energy is converted into heat, remains the biggest challenge, she explains. When developing these components, scientists also have to decide whether to create very powerful and energy-efficient components that can only be used for a specific purpose, or to create parts that can be used in a variety of ways, but which have a lower performance and require more energy.

For its latest innovation, the team of researchers investigated whether spintronics can be used to solve these problems. It is based on a special property of electrons: the spin. This is a kind of

intrinsic angular momentum of electrons that generates a magnetic moment which is the origin of magnetism. The researchers have investigated if and how a diode or transistor can be developed that uses this spin in addition to the charge of the electron. The concept is based on newly discovered magnetic materials that contain spin information in a particular way. These could replace traditional semiconductor materials in the novel components.

"Our proposals for the new transistors combine data processing and storage. There is no loss of energy and they can easily be reconfigured," explains Dr Ersoy Sasioglu, a physicist at MLU and first author of the paper. A patent has already been filed for the design of these spintronic components. The research group from Halle focusses on using theoretical simulations in designing novel materials. In cooperation with experimental physicists from the University of Bielefeld, the scientists now want to test which materials are best suited for the new components.

The research work was financed by the European Regional Development Fund (ERDF) and the State of Saxony-Anhalt.

Mr. Kunal Lala

(Asst. Professor, ECE)



# STUDENT TECHNICAL CORNER

## HUMANOID ROBOTICS

### What is a Humanoid robots Anyway

- ✚ Because we live in a world built for humans, so a humanoid robot is a natural shape for things replace human functionality.
- ✚ We naturally build systems to imitate our own capabilities .its easy to imagine how we would do something , and this makes it easy to teach a humanoid robot to do them for us .
- ✚ Humanoid design would also produce the most versatile design for human jobs .If some parts are not needed ( eg; legs) ,they are removed.
- ✚ Structure resembles that of a human: head, torso, legs, arms, hands.
- ✚ But it is also a robot made to resemble a human both in appearance and behavior.
- ✚ The difference between a robot and android is only skin-deep, looks exactly like humans on the outside, but with internal mechanics of humanoid robot.



### Why to Develop Humanoid robots?

- ✚ Because we live in a world built for humans ,so a humanoid robot is a natural shape for things replace human functionality.
- ✚ We naturally build systems to imitate our own capabilities .it's easy to imagine how we would do something , and this makes it easy to teach a humanoid robot to do them for us.
- ✚ Humanoid design would also produce the most versatile design for human jobs .If some parts are not needed ( eg; legs) ,they are removed.
- ✚ FUTURE OF HUMANOID ROBOTS - Nowadays, various research approaches have been presented for humanoid localization; the most popular research approaches were usually carried in 2D spaces.
- ✚ In one such research, the 2D representation information was stored in quantized cells but they were not reliable in navigation of obstacles.

- ✚ To navigate the humanoid to make its way through obstacles and to determine the heights of different objects, the 2.5D representation is utilized.
- ✚ Various other approaches such as 3D representation is used for arbitrary environments having several levels, a 6D representation is used for multi-levelled and non-planar movements.
- ✚ LEGGED LOCOMOTION- Legged locomotion is one of the hardest control problems in humanoid robotics and none of the current approaches completely solves it to date.
- ✚ As it is obvious from studies of humans and animals, learning plays a significant role in both the balance stabilization and gait generation of biological legged creatures.
- ✚ It is therefore both an important application as well as an essential problem for learning control.
- ✚ Computational Brain CB and the quadruped robot Little Dog. The humanoid robot CB is one of the most advanced humanoid robots and is driven using hydraulic actuators.

#### ADVANTAGES OF HUMANOID ROBOT

- ✚ Humanoid robots can perform any task a human being can, so long as they have the proper software, Although they look realistic, they have no cognition or physical autonomy.
- ✚ They can be used for future dangerous & distant space exploration missions, they can be used as ultimate helpers in man-made & natural disasters.
- ✚ Humanoid robot can be used to help the military, They can move, gather the information (using sensors) on the real world and interact with it.
- ✚ A great development in science & technology leads to the advanced humanoid mechatronic systems that are rich in complex sensorimotor capabilities

PUSHPENDRA SRIVASTAVA

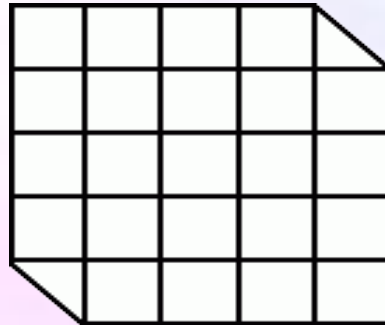
1803331073

ECE 2<sup>ND</sup> Year



# BRAIN TEASERS

1. Your task is to dissect the following picture into 2 sections from which you could make a rectangle 6x4 squares.

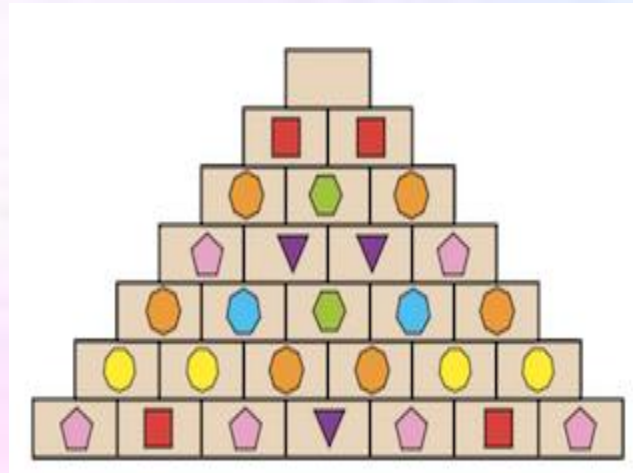


2. Enter the letters A, B, C and D once in each row and column. The clues outside the grid indicate which letter appears first from that direction.

	A	B	C	D			
C							
							C
							C
							C
C							
C							
	C		A	C	A		

3. A man is trapped in a room with only two possible exits. Through the first door is a room with an enormous magnifying glass causing the blazing hot sun to instantly burn anything that enters. Through the second door there is a fire-breathing dragon. How does the man escape?

4. What shape should be in the top brick?



5. Solve :

$$\begin{aligned}
 & \text{Glass with green liquid and straw} + \text{Glass with green liquid and straw} + \text{Glass with green liquid and straw} + \text{Glass with green liquid and straw} = 28 \\
 & \text{White cup with steam} + \text{White cup with steam} + \text{Glass with green liquid and straw} = 17 \\
 & \text{White cup with steam} + \text{Blue cup with steam} = 9 \\
 & \text{Glass with green liquid and straw} + \text{White cup with steam} + \text{Blue cup with steam} - \text{Glass with green liquid and straw} = ?
 \end{aligned}$$



# ALUMNI SPEAK

College life is the best part in every person's life. College life is a time full of experiences and learning many new things. It becomes a place where a person has many things that define a person, there is no doubt that the time spent in our college becomes the best time for our lives. It actually becomes a second house, where we meet various unique people, come to some amazing friends, make some mistakes, and finally, we get a degree in ourselves.



It would be difficult to sum up 4 years of RKGIT in just few lines. I must say that the learning and exposure which RKGIT gives is just commendable. I developed an array of qualities that are imperative to be a successful Engineering professional. The time spent here had an amazing influence on my personality.

Supportive seniors, faculty members, beautiful campus and amazing friends. Apart from the academics, there are a number of student societies and clubs which help students to boost their confidence and provide them exposure.

Mayank Jaiswal

Batch: (2014-2018)

HCL, Technologies