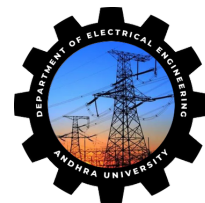




THE ELECTRIC TIMES



A Publication of The Department of Electrical Engineering, AUCE(A) Andhra University

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"It is a great privilege and honor to be a part of the mission to make "Andhra University" a name to reckon within the academic fraternity by giving a strong impetus to creating an environment of knowledge, application, and holistically inspiring youth to become leaders of tomorrow. I believe that the rigors of the contemporary world will require knowledgeable professionals who could withstand the dynamics of the fast-changing world. Hence "Making a Difference in the Life of Every Student" is the Priority of my administration. We look forward to a deep engagement with Students, Industry, Faculty, and Community to position Andhra university as the national leader in delivering value to its students and offering a transformative educational and life experience."

Prof. P.V.G.D. Prasad Reddy

Vice-Chancellor

"Andhra University College of Engineering (A) has emerged as the Technological destination for the student community of the rising State of Andhra Pradesh."

Me, after taking charge as Principal, has belief in the "Learn-Create-Compete" Philosophy leading to the escalation of the plane of all its stakeholders. In the dimensions of learning mission of the students, the best of the infrastructure such as class room modernization, upkeep of the laboratories with state of the art equipment/machinery, the institution is forwarding. The curriculum of all the programs has been designed on par with any other National level Technical Institutions. The directives of the AICTE are being considered in the curriculum design. Road map has been laid to secure the accreditation of the programs by NBA with the highest rank. The institutional culture is being driven towards student centric learning. The avenues for the students are enhanced by providing extensive Campus Recruitment Training and special classes for GATE as well. It is made encouraging that Under Graduate/Post Graduate students are utilizing the Skill Development Courses of the Centre of Excellence."



Prof. P.Srinivasa Rao

Principal

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering has been started in 1955 as one of the three constituents of the Department of Engineering in Andhra University. The status of a Department was given in 1969. The department has grown significantly and currently offers a UG program in Electrical and Electronics Engineering and PG programs in Power Systems & Automation and Control Systems Engineering.

The department initiated developmental activities in the emerging areas of power systems, control systems, electrical machine design and control, power electronics. The department has well-established Machines, Networks, Measurements, Power Electronics, microprocessors, control systems, and Digital Electronics Laboratories. The department is periodically organizing refresher courses for practicing engineers. The department has undertaken consultancy projects in collaboration with DRDO, DST, BARC, APSEEDCO. The teaching faculty of the department are involved in research activities in the areas of fault detection, power system stability, load flows, optimal power flows, modal reduction, decentralized fault detection, and flexible AC transmission systems. The current focus of research is on complementary electrical technologies leading to make in India and Indigenous for the betterment of society



WHAT IS LIGHTNING?

When the positive and negative charges grow large enough, a giant spark - lightning - occurs between the two charges within the cloud. This is like a static electricity sparks you see, but much bigger.

THE SCIENCE BEHIND LIGHTNING?

When cold air and warm air meet the warm air goes up, and it makes thunderstorm clouds! The cold air has ice crystals. The warm air has water droplets. During the storm, the droplets and crystals bump together and move apart in the air. This rubbing makes static electrical charges in the clouds.

Just like a battery, these clouds have a "plus" end and a "minus" end. The plus, or positive, charges in the cloud are at the top. The minus, or negative, charges are at the bottom. When the charge at the bottom gets strong enough, the cloud lets out energy.

The energy goes through the air. It goes to a place that has the opposite charge. This lightning bolt of energy that is let out is called a leader stroke. It can go from the cloud to the ground. Or, a leader stroke can go from the cloud to another cloud. No one is sure why lightning bolts follow a zigzag path as they move. The main bolt or stroke will go back up to the cloud. It will make a flash of lightning. It will also heat the air. The air will spread quickly. It will make the sound we hear as thunder.



WHAT IF:

If we catch lightning bolt energy

From articles in Wind power Engineering & Development, lightning bolts carry 5 kA to 200 kA and voltages vary from 40kV to 120 kV. Let us take average values say, 100kV and 100kA.

$$P = 100 \times 10^3 \text{ A} \times 100 \times 10^3 \text{ V}$$

$$= 10,000 \times 10^6 \text{ VA or Watts}$$

$$= 1 \times 10^{10} \text{ Watts}$$

$$= 10 \text{ hundred crore watts or 10 billion Watts.}$$

Now assume this energy is released in 1 sec. So the power is: 10^{10} W-sec . On your electric bill your payment is based on Watt-hours or Wh. So let's convert to Wh:

$$P = 10^{10} \text{ Ws} \times 1 \text{ hr} / 3600 \text{ s}$$

$$= 1/36 \times 10^8 \text{ Wh}$$

$$= 2.77 \times 10^6 \text{ Wh}$$

Let us assume a house needs 90kWh for a month.

So, with lightning bolt energy we can supply power on an average 30 houses for a month.

In the world, every year 1.3 billion lightning bolts occur. How much energy we are getting from nature and how many cities we can run with that energy. I'm leaving it to your imagination wait for next month what if.

CONTRIBUTOR: RAKESH PEDIREDDI, DEPT EEE

TEST YOURSELF



PROBLEM OF THE MONTH

How do we improve Regenerative Braking System

Regenerative braking :Regenerative braking is a way of taking the wasted energy from the process of slowing down a car and using it to recharge the car's batteries. On a normal car, braking simply wastes energy - but with regenerative braking, some of the energy is able to be reused

Regenerative braking allows the range of the EV to be extended; however, the efficiency of capturing this energy is reported to vary from 16% to 70% (Boretti, 2013). The reason for this significant difference in efficiency will depend on the driver's style of driving whether they brake gradually or severely.

GENERAL KNOWLEDGE QUESTIONS

CONTRIBUTOR: RAGHAVAPURAPU BHAVANI PRASAD, DEPT EEE

1. The largest land locked country in the world?
2. When did India space program start and what it's name?
3. Where is Asia's largest solar energy park situated?

CONTRIBUTOR: SAI TEJA PADHI, DEPT EEE



INTERVIEW



SCADA (Supervisory Control At Data Acquisition)

• Why did SCADA Centre take pa pilot project in Visakhapatnam?

The importance of SCADA (Supervisory Control At Data Acquisition) in Visakhapatnam, approved by the UNION MINISTRY of POWER will come up in Visakhapatnam under the Re-structured Accelerated Power Development & Reforms Programme (R-APDRP) Scheme. Under this plan, SCADA would facilitate centralized data collection which enables improved system stability, easy accessibility to every consumer instances collection of parameters like voltage current and power

• What is the difference between data handling in IoT and SCADA ?

SCADA and IoT employ different technologies to transfer data from the plant floor to the computer of the central computer control system. IOT provides more open standards, more inter-operability, and more ease in adding and modifying install access to cloud-based resources.

However, since IoT is vulnerable to the same issues as its deployment, SCADA is closed, localized as comparatively difficult to update

• What are the advantages of SCADA over other protocols?

SCADA enables users to generate object-oriented graphs, offering trending graphs for real-time information analysis. SCADA also handles big data, allowing you to create a database system that shows trends over several years. This allows users to access important data that can be used for future growth

• At present how many substation s are in connection with working scada center?

SCADA enables users to generate object-oriented graphs, offering trending graphs for real-time information analysis.



SATYA NARAYANA GARU, A.E, EPDCL. POLAMAMVA SUB STATION , VIZAG

SCADA also handles big data, allowing you to create a database system that shows trends over several years. This allows users to access important data that can be used for future growth

• what is the investment for that scada center?

A total of Rs 10 lakh is required to connect SCADA with each substation. Thus, Rs 5 crores is required for 50 substations.

• what are the problems encountered with scada center?

SCADA can be expensive in scenarios where PLC is enough to handle the job. Most of the leading SCADA platforms are windows-based. Thus, it is prone to be easily affected by errors in case of a Virus attack) regular corruption. SCADA system needs high maintenance

• Explain Security Management in SCADA?

Security Management is a facility in the SCADA system that provides functionality to decide specific function can operate by the specific user only.

Security is provided by the login, User name and Password is given to the specific persons. Users can create a specific group like



AU ROUNDUP



EDUCATION:

* Our revered Professor G.V.Siva Krishna Rao has conducted 187 webinars since 2020 December. These webinars have enabled students to get exposure in various fields and have fetched a good number of internships and placements

* Andhra University to collaborate with UNO International Studies in India for more quality education.

* An agreement made for the next five years to continue with the Indian Institute of Management, Vishakhapatnam

* A milestone reached by AU through association with American corner- AU Students get wings to fly to America and security extended by AU

JOB MELA HELD IN AU EVOKES GOOD RESPONSE

The mela was held on 23rd and 24th of April to provide employment opportunities to the youth of AP

A total of 77,000 candidates have registered for the mega job mela, with the total number of vacancies available being 24,000. 208 companies participated.

13,663 candidates received offer letters from the participating companies on the first day of joining itself.

The highest recorded package was 12lpa offered by a Mumbai based company, Happiest minds followed by 10lpa offered by HCL.

EXTRA CURRICULAR ACTIVITIES

* Various cultural events conducted in the university for increasing exposure to students

* Number of placements shows a great increment since last year. More talented students get into top companies and organizations.

TRIUMPH OF EEE STUDENTS

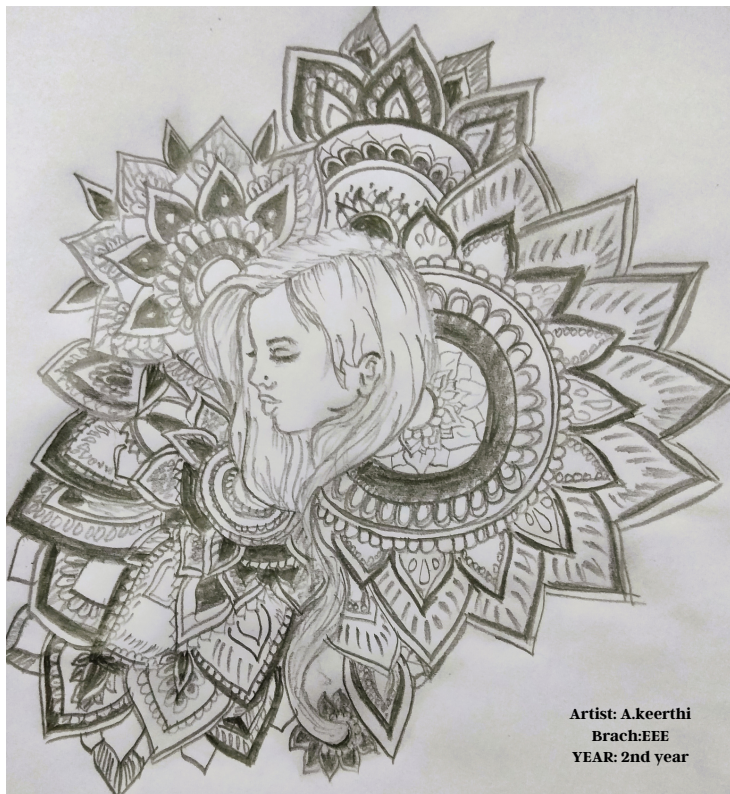
- Mr. Aditya Singamsetti belonging to the 2018-22 batch has secured a GATE rank of 119 in the year 2021
- Mr. Chintada Uday Kiran belonging to the 2017-21 batch has secured a GATE rank of 105 in the year 2021
- Ms. Balaga Keerthana Bhairavi belonging to the 2017-21 batch has secured a good score in CAT, pursuing MBA at IIM Bangalore
- Mr. Shaik vasim Basha belonging to the 2017-21 batch has been placed at BARC through GATE
- Besides core and competitive exams, many students were also placed in other sectors



CREATIVE CORNER



ART ZONE



Artist: A.keerthi
Branch:EEE
YEAR: 2nd year

STORY



As a man passing through a forest approached a group of elephants, he suddenly stopped, confused by the fact that these huge creatures were being held by only a small rope tied to their front leg. No chains, no cages. It was obvious that the elephants could, at any time, break away from their bonds but for some reason, they did not.

He saw a trainer nearby and asked why these animals just stood there and made no attempt to getaway. "Well," the trainer said, "when they are very young and much smaller we use the same size rope to tie them, and, at that age, it's enough to hold them. As they grew up, they were conditioned to believe that they can't break away from them. They believed that the rope can still hold them, so they never tried to break free."

The man was amazed. These animals could at any time break free from their bonds but because they believed they couldn't, they were stuck right where they were.

The man was amazed. These animals could at any time break free from their bonds but because they believed they couldn't, they were stuck right where they were.

Just like the elephants, many of us go through life hanging onto a belief that we cannot do something, simply because we failed at it once before. However, we need to learn that failure is an integral part of learning; we should never give up on the struggle in life.

contributor: Aparna Sindhuri Duppala

POETRY



The hands read five
The clock says wakeup;
The brutal thoughts arrive
The mind says makeup;

Put on the running shoes
one hour of hell;
Let the body go loose
Don't let the pain make you dwell;

on the day before
on the warm and cozy bed;
Want to sleep some more
Need the eyes turn red?

Got to make a choice
The couch or the sweat;
The former is nice
The Latter a tough bet;

But think no more
The pain is brief;
Your Splendor galore
Before long you will see relief.

CONTRIBUTOR: ANIRUDH PATNAIK, DEPT EEE

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