

Government Engineering College, Modasa



ELECTROZINE

Year 2017 issue

*-A Magazine by
Department of Electrical engineering*

TEAM ELECTROZINE

DRAFTING/EDITING



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DATA ENTRY

प्रार्थना



हे शारदे माँ, हे शारदे माँ
अज्ञानता से हमें तार दे माँ,
तू स्वर की देवी है संगीत तुझसे,
हर शब्द तेरा है हर गीत तुझसे ।
हम हैं अकेले हम है अधुरे,
तेरी शरण में हमें प्यार दे माँ ॥
हे शारदे माँ, हे शारदे माँ.....
मुननयों ने समझी मुननयों ने जानी,
बेदों की भाषा पुराणों की बानी ।
हम भी तो समझें हम भी तो जाने,
नवद्या का हमको अनधकार दे माँ ॥
हे शारदे माँ, हे शारदे माँ.....
तू श्वेतवणी कमल पे नवराजे,
हाथों मे बीणा मुकुट सर पे साजे ।
अज्ञानता के मटा दे अंधेरे,
उजालों का हमको संसार दे माँ ॥
हे शारदे माँ, हे शारदे माँ.....

ACKNOWLEDGEMENT

It's matter of contribution that was being gained to make this magazine more than wonderful. We are thankful to Prof. Gajendrasinh P. Rathod who took the initial efforts towards the magazine development. We also owe to Prof. Hemang S. Pandya for going through the manuscript and making valuable suggestions.

The magazine could take its final shape because of ideas, suggestion and experienced shared by our senior students and former Electrozine team who were the helping hand in developing the magazine. Their trial in making the magazine even better is still on its way and we welcome their continuous support. Effort provided by them is always appreciated. The team also acknowledges the moral and technical support provided by Professors for the magazine.

We are also grateful to the students of the department for their hearty cooperation & suggestions and the faculties of department for their collective effort & moral support. We acknowledge their contribution.

The experience gained in making this magazine was more than wonderful.

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VISION

To thrive for excellence in the field of Electrical engineering by imparting quality education that produces skilled , innovative and ethical engineers to meet the needs of academia , industry and society.

MISSION

To provide an effective Teaching - Learning environment to acquire skills and knowledge in the field of Electrical engineering .

Strengthen industry institute interaction to enable the students to work on innovative and real time problems . .

To foster a culture of entrepreneurship amongst the students .

To instill values in students for lifelong learning and service to the society.

स्पंदन



ABOUT THE MAGAZINE

This magazine aims to focus on the Department of Electrical engineering of GEC Modasa, where various activities are being conducted among students and faculties. It also dives into the Extra-ordinary talent among the students who do their level best in their academics as well as broadcast their inner talents and hobbies to enhance the glory of the Department.



ELECTROZINE SYMBOL

The standard color coding of Electrical engineering comprises of the following three colors:



R- Red

Y- Yellow

B - Blue



This represents the students of Department of Electrical engineering of GEC, Modasa.

Caring ring:

The Black color indicates Neutral Link. It indicates the neutrality of faculties among students. All students are treated equally. And also that, Life is just like a floating river (in a sense of an A.C wave form); which helps in creating awareness in the students about the harsh realities of life. Even though there are Ups & Downs in life, we should remain stable, no matter what.





PRINCIPAL'S DESK

A . M . PRABHAKAR

Greetings !

I welcome you all to travel through a beautiful technological journey in Government engineering College, Modasa.

Technology has significantly changed the way we think, communicate and live. Consequently, it has opened the doors for immense opportunities for the creative, rational, and diligent person. Therefore, pragmatically prioritizing the things around helps a lot in achieving expectations; thus, as a student, conscientiously focusing on study and meticulously utilizing time should be the precedence. The campus possesses well equipped laboratories and qualified faculty members who are enthusiastically working and continuously adding to build better character of the students .

As holistic development of the students being our concern, we organize expert lectures, seminars, workshops along with sport and cultural programs to provide an environment where students can develop his or her interest . Thus, the campus provides abundant opportunities to learn and grow. We insist students to take bent of resources for all-round growth.

I personally want my students to become confident and elegant enough to enjoy challenges that come across, by developing an attitude of ending proper solution to it. Again I take opportunity to welcome you all to make your beautiful technological journey!



HEAD OF THE DEPARTMENT'S DESK

PROF. JYOTI R. IYER

Greetings!

I take the privilege to welcome you all to this new edition of Electrozine. Electrozine is a barometer of the activities taking place in the department and the achievements of students/faculty of the department.

The strength of Electrical engineering Dept, is well qualified and dedicated faculty with good infrastructure facility. The faculty in the department is of the opinion that the individual diligence, quest for knowledge and excellence and hard work by the students in the right direction play a crucial role in his/her success. The students are motivated to take maximum advantage of the knowledge in the department. A number of co-curricular and extra-curricular activities take place in the department to harness the potential and talents of students.

The department provides an environment where teaching and learning process is supplemented with critical thinking and problem solving skills that would help the students mould themselves to become competent in the engineering field and thus serve the society.

I appreciate and acknowledge the zeal and enthusiasm of the students who have worked towards the making of this magazine. My heartfelt gratitude to them. All the best to my students!

INTERVIEW

Tell us about yourself.

I have been associated with the education department on & off around 6 years and with the institution (GECM) around 3 years. Still I'm considering myself as a learner, so I'm also a learner like you, who a knowledge seeker.

During your time here as an assistant professor, how much did you see this department evolve?

Yeah, definitely evolvement has been the continuous process here over the period. I have experienced the progressive and positive changes in the students as well as staff members. I have also experienced the development as well as college in terms of equipment and other learning environment.

How was your experience in serving here?

With respect to the previous work environments GECM has the benefits of large and independent campus as well as healthy environment. Even the colleagues are supportive and enthusiastic.

What are your thoughts on failure?

Failure is the last try before success. So don't stop after failure.

If you were given a choice to change something about this department then what would it be?

Nothing as such in changing anything about this place but If I were given a chance then, I would like to utilize the campus area effectively for the benefits of students.

How's the working environment here?

Actually it's very much positive and supportive.

One good memory about this place?

Every day over here has been the identical memory itself.

Any message for your students?

As I'm also considering myself as a learner, I would like to say to all learners, "Never stop, keep doing or seeking for the things what you like".



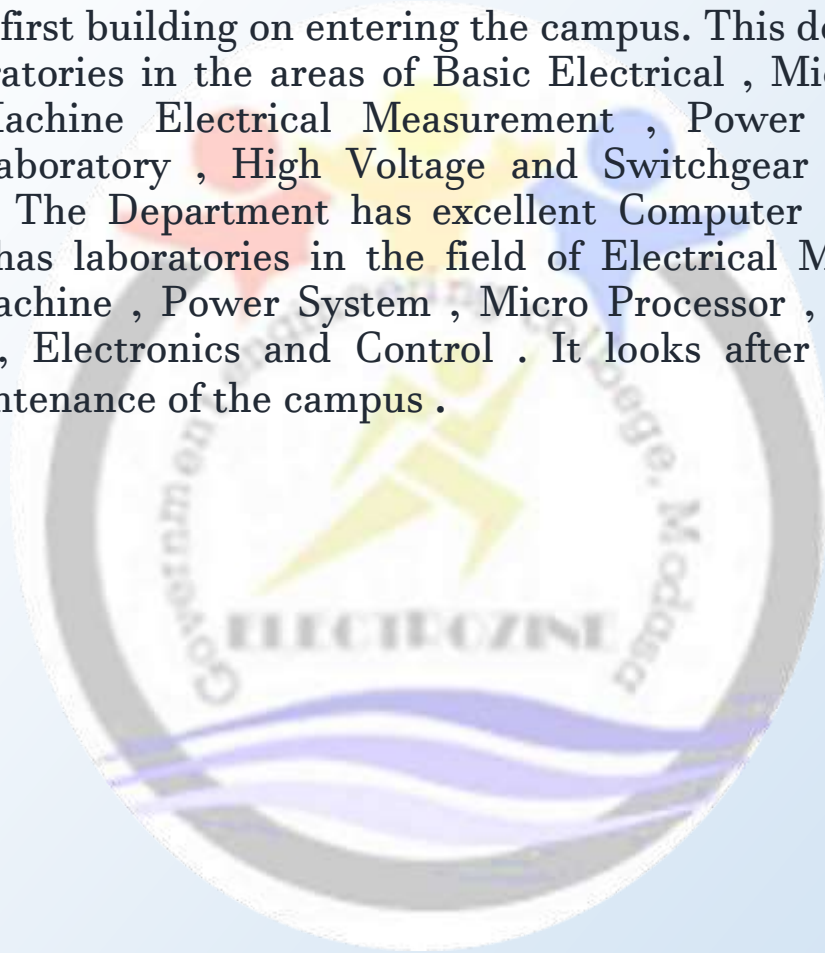
Prof. S. v. Bankar

Assistant Professor

**Government engineering College
Modasa**

ABOUT THE DEPARTMENT

It is the very first building on entering the campus. This department has various laboratories in the areas of Basic Electrical , Microprocessor , Electrical Machine Electrical Measurement , Power Electronics , Computer Laboratory , High Voltage and Switchgear & Protection Laboratory . The Department has excellent Computer Centre . This department has laboratories in the field of Electrical Measurement , Electrical Machine , Power System , Micro Processor , High Voltage engineering , Electronics and Control . It looks after the electrical service / maintenance of the campus .



ABOUT THE COURSE

Electrical engineering, one of the core courses of engineering discipline deals with the study of design, development, and maintenance of electrical systems and their components, ensuring quality, safety, reliability, and sustainability. The course focuses on the manufacturing of electrical equipment used in a number of sectors including construction and building and the production and distribution of power. Students pursuing electrical engineering study about semiconductors and microprocessors. The undergraduate course will award a B. Tech / B. E. degree and the postgraduate course, an M. Tech. An electrical engineer is someone who designs and develops new electrical systems, solves problems and tests equipment. They study and apply the physics and mathematics of electricity, electromagnetism and electronics to both large and small scale systems to process information and transmit energy. They work with all kinds of electronic devices, from the smallest pocket devices to large supercomputers. An electrical engineer is someone who designs and develops new electrical systems, solves problems and tests equipment. They study and apply the physics and mathematics of electricity, electromagnetism and electronics to both large and small, scale systems to process information and transmit energy. They work with all kinds of electronic devices, from the smallest pocket devices to large supercomputers.

FACULTY & STAFF

Prof. J. R. Iyer	Associate Professor and Head of the Department	Prof. S. V. Banker	Assistant Professor
Prof. M. J. Patel	Associate Professor	Prof. P.J.Thakor	Assistant Professor
Dr. H. D. Mehta	Associate Professor	Prof. H.N.Raval	Assistant Professor
Prof. N. V. Upadhyay	Assistant Professor	Prof. G. P. Rathod	Assistant Professor
Prof. K. K. Bhatt	Assistant Professor	Prof. K.G. Kharadi	Assistant Professor
Prof. M. N. Priyadarshi	Assistant Professor	Prof. H. P. Vyas	Assistant Professor
Prof. T. A. Chowdhury	Assistant Professor	Prof. P. K. Patel	Assistant Professor
Prof. C. K. Bariya	Assistant Professor	Shri S. K. Panchal	Electrician
Prof. R. K. Kapadia	Assistant Professor	Shri. S. J. Patel	Electrician
Prof. N. B. Panchal	Assistant Professor	Shri A. K.Bhangi	Hamal



Faculty Corner

Trainings Attended by Faculty

1. Prof.V.M.Patel, attended two week STTP on “ Applications of optimization techniques in Engineering for Research” form 2nd Jan. 2017 to 13th Jan. 2017 organised ny Electrical Engg. Dept., GEC, Modasa.
2. Prof. M.J.Patel, Associate Professors in Electrical Engg attended two week STTP on " Hands on: Mathematical Modelling and software simulation for power system engineering" from 30th Nov. , 2016 to 10th Dec., 2016 at SVNIT, Surat.
3. Prof. N.V. Upadhyay, Assistant Professor in Electrical Engg., attended one week STTP on “Future trends in renewable energy sources” from 12th Dec., 2016 to 17th Dec., 2016 at VGEC, Chandkheda.
4. Prof. K.K.Bhatt, Assistant Professor in Electrical Engg., attended one week STTP on "Mathemetical tools and techniques for engineering research" from 30th May, 2016 to 3rd June, 2016 at GEC,Gandhinagar.
5. Prof. K.K.Bhatt, Assistant Professor in Electrical Engg., attended two week STTP on " Hands on: mathemetical Modeling and software simulation for power system engineering" from 30th Nov., 2016 to 10th Dec., 2016 at SVNIT Surat.
6. Prof. N.V.Upadhyay, Prof. M. N.Priyadarshi, Prof. T.A.Chaudhari, Prof. R.K.Kapadia and Prof. N.B.Panchal, all Assistant Professors in Electrical Engg., attended two week STTP on “ Applications of optimization techniques in Engineering for Research” form 2nd Jan. 2017 to 13th Jan. 2017 organised ny Electrical Engg. Dept., GEC, Modasa.
7. Prof. N.V. Upadhyay and Prof. M.N.Priyadarshi , Assistant Professors in Electrical Engg., have attended Induction Phase II training at NITTTR Ahmedabad from 2nd May to 13th May, 2016.
8. Prof. T.A.Chaudhari , Assistant Professor in Electrical Engg., attended Induction Phase I training at NITTTR Bhopal from 8th Aug., 2016 to 19th Aug. 2016.

Conferences Attended & Chaired By Faculty

1. Prof. B.N.Suthar, Associate Professor in Electrical engineering., was session chair in Electrical engineering. In the International conference on Research, Innovation, Science and Technology, ICRASET at Vallabh Vidyanagar, Gujarat 17-19 Feb., 2017.
2. Prof..B.N.Suthar, Associate Professor in Electrical engineering.,attended two days workshop on “Introduction to robotics and embedded system” held at IITRAM, Ahmedabad on Nov. 18-19,2016.

Faculty Achievement

Prof. B. N. Suthar, Associate Professor in Electrical engineering., was selected as Professor (Electrical) through direct GPSC selection.

Faculty Pursuing PhD.

Prof. J.R. Iyer ,from Gujarat Technological University



PAPERS PRESENTED/PUBLISHED

1. Prof. J.R.Iyer, Associate Professor in Electrical engineering. and Prof. B. N. Suthar, Associate Professor in Electrical engineering. published paper on “Evaluation of Power flow solution space boundary” at the International conference on Next Generation Intelligent Systems held at Rajiv Gandhi Institute of Technology, Kottayam, Kerala from 1-3 Sept., 2016.
2. Prof. J.R.Iyer, Associate Professor in Electrical engineering and Prof. B. N. Suthar, Associate Professor in Electrical engineering. published paper on “Plotting of contours in P-Q plane using contour evaluation program” at the International conference on Research, Innovation, Science and Technology, ICRASET at Vallabh Vidyanagar, Gujarat 17-19 Feb., 2017.
3. Prof. B. N. Suthar, Associate Professor in Electrical engineering. and Mr. N. K. Patel published paper on ”Dynamic Economic Environmental Dispatch of Electric Power Generation using TVAC-PSO” in Journal of Energy Environment and Carbon Credits at Noida - 201 301 (U.P.), INDIA Vol.6, Issue 2, August-2016.
4. Prof. B. N. Suthar, Associate Professor in Electrical engineering. and Mr. Vinod S. Tejwani published paper on “Control Strategy for Utility Interactive Hybrid PV Hydrogen System” in 2016, IEEE Power & Energy Society General Meeting during July 17-21, 2016 at Boston, MA, USA, 978-1-5090-4168-8/16, 2016 IEEE.

Expert lectures delivered by faculty

1. Prof..B.N.Suthar, Associate Professor in Electrical engineering., delivered expert lecture at the TEQIP-II Sponsored and ISTE Approved Two days National Workshop on “Research Trends in engineering and Technology” held at Electrical engineering Dept., BVM during August 22-23, 2016.
2. Prof..B.N.Suthar, Associate Professor in Electrical engineering., delivered expert lecturer on “Recent Inclination in HVDC & FACTS" at Parul University on Nov. 22, 2016.
3. Prof. B.N. Suthar, Associate Professor in Electrical engineering., delivered lecture on ‘Use of Artificial Neural Network’ in the STTP on “Application of Optimization Techniques in engineering for Research” held at Electrical engineering Department, GEC, Modasa.
4. Prof. J.R.Iyer, Associate Professor in Electrical engineering., delivered lecture on ‘Basics of ATLAB’ in the STTP on “Application of Optimization Techniques in engineering for Research” held at Electrical engineering Department, GEC, Modasa.

Student activity

1. 181 students of Sem-8, Civil and Electrical, along with 12 faculty visited the Narmada Canal Head regulator, River bed power house, Narmada dam and Statue of unity on 28th March, 2017.



2. Himanshu Dubey, student of Sem. 7th Electrical published paper on “Solar PV panels” at the SWITCH global exhibition, Vadodara on 10th Oct., 2016.

3. 70 students of Electrical, EC, CE,I T, Mechanical branches along with 9 faculty visited Vibrant Gujarat global trade show, 2017 at Gandhinagar on 13th Jan., 2017

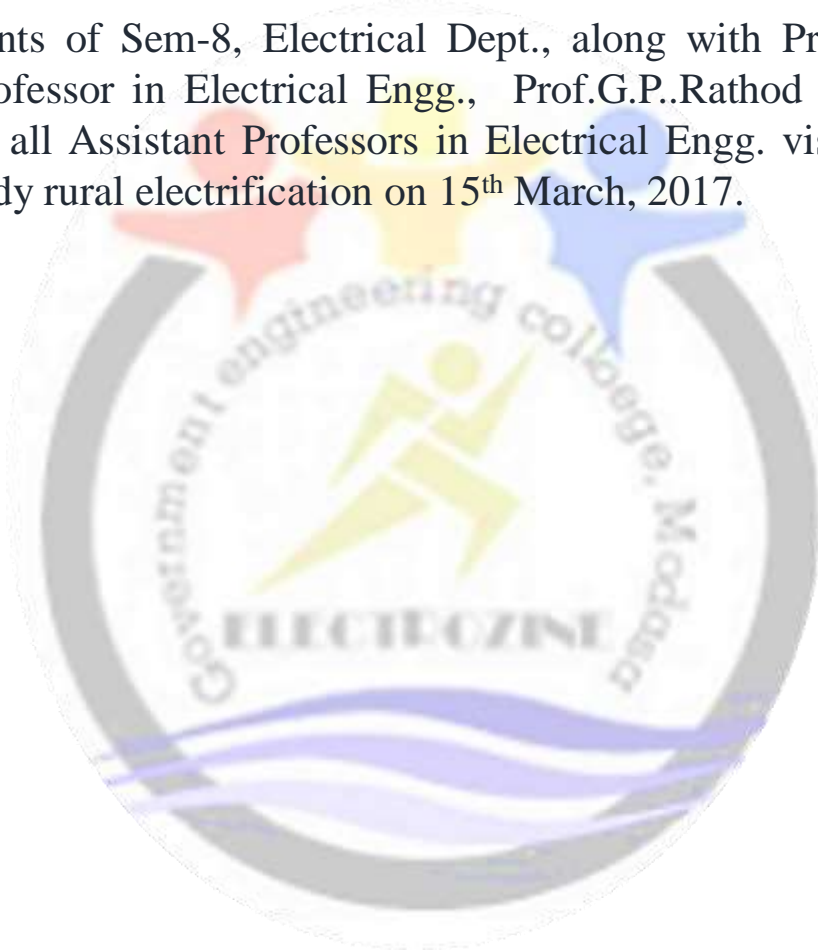
4. 337 students of 5th and 7th Semester of Electrical ,EC & IT branch visited SWITCH Global Expo, organized as part of the Vibrant Gujarat Summit, on 7th Oct. 2016 at Vadodara along with 12 faculties. The visit was sponsored by Gujarat Energy Transmission Corporation Limited (GETCO).

5. 120 students of Sem-8, Electrical Dept., along with Prof. H.P.Vyas, Prof. V.J.Rathod and Prof. P.J. Thakor, Assistant Professors in Electrical Engg.visited the 220 kV substation at Dhansura on 18th March, 2017.

Student activity

6. 136 students of Sem-8, Electrical Dept., along with Prof. H.P.Vyas, Prof. C.K.Baria and Prof. P.K.Patel, Assistant Professors in Electrical Engg. visited the GIDC, Modasa to study industrial electrification on 16th March, 2017.

7. 136 students of Sem-8, Electrical Dept., along with Prof. M.J.Patel, Associate Professor in Electrical Engg., Prof.G.P.Rathod and Prof. P.J. Thakor, both all Assistant Professors in Electrical Engg. visited Limbhoi village to study rural electrification on 15th March, 2017.



Department Activity Details

Orientation

Orientation Program for newly admitted first year students was held on 4th August, 2016. The students were made aware of the institute infrastructure, departmental facilities, working system of college, Gujarat Technological University (GTU) exam pattern and other general information regarding discipline, attendance etc. A separate visit of each and every department was arranged for the students of respective branches.

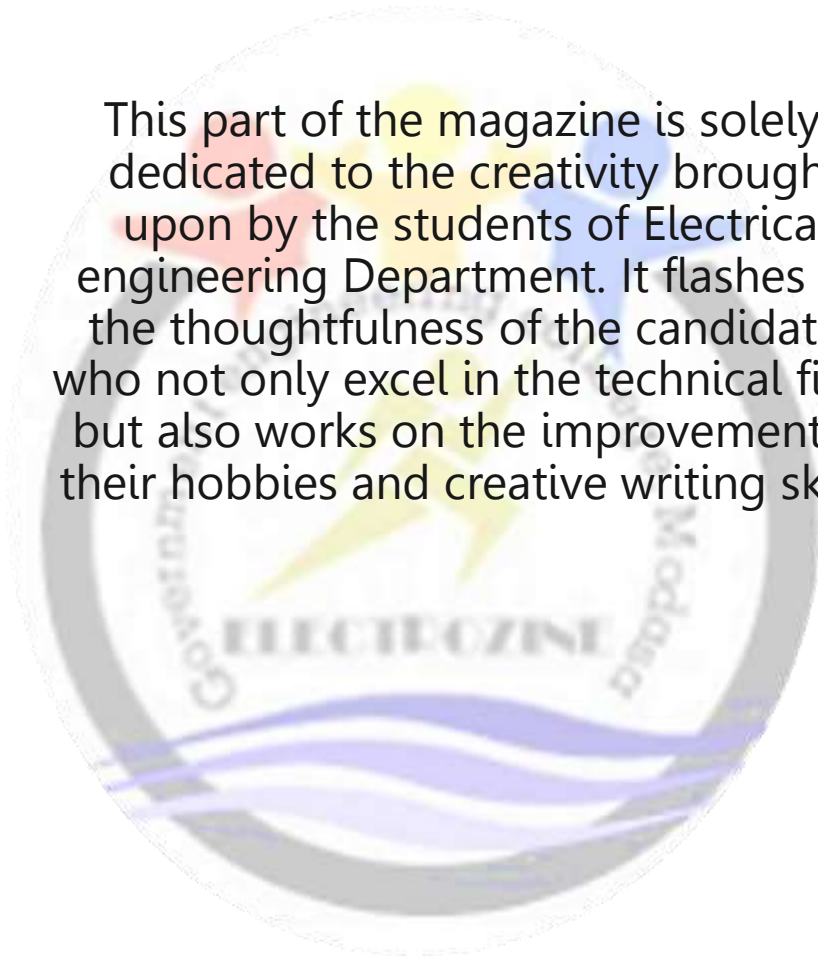
Tech Fest 2016

Techfest-2016 was organized on 3rd March 2016 . More than 10 colleges participated in the event. Various activities related to all branches of engineering like Quizothon, Hydromaniya, Poster Presentation, Auction and Innovation, Metallic Warrior, Design Your Ideas etc, were included in the event. The program was inaugurated by Chief Guest-Mrs. S. Chhak Chhuak(IAS), Collector Aravalli district.



Student corner

This part of the magazine is solely dedicated to the creativity brought upon by the students of Electrical engineering Department. It flashes on the thoughtfulness of the candidates who not only excel in the technical field, but also works on the improvement of their hobbies and creative writing skills.



જીવન માં વિજ્ઞાન

ન્યૂટન કહે છે: આઘાત અને પ્રત્યાઘાત સરખા કિન્તુ વિરુદ્ધ દિશા માં હોય છે ;એટલે જ તો હૃદય પર નો આઘાત - અશ્રુઓ ના પ્રત્યાઘાત રૂપે હોય છે...

જીવનની પ્રણાલી યોગશીલ નહીં કિન્તુ રેડોક્ષ હોવી જોઈએ ;સંઘરવા કરતા આપ-લે ની મઝા લેવી જોઈએ...

એસિડ અને બેઈઝ મુજબ જેમ લિટમસ રંગ બદલે છે ;આ માણસ પણ લિટમસ જેવો જ, ખરાં સમયેજ રંગ બદલે છે...

વિજ્ઞાન કહે છે:ઘાતુ થી ઘાતુ ટકરાય તો રણકો મોટો ઉદભવેછે;ને જીવન કહે છે; આપણા જ આપણને અથડાય તો પીડા મોટી સંભવે છે...

લૈલા મળે તો'ય મિત્રોની મદદ વિના ક્યાં મજનુ થવાય છે;કેમ ભૂલી ગયા-ઉદ્દિપક આનેજ તો કહેવાય છે...

શ્વાસો તૂટતી જાય છે; ઈચ્છાઓ મરતી જાય છે; જીવન પ્રક્રિયા પૂર્ણ થવાની જ્યારે ક્ષણો ગણાય છે, સ્નેહીજનની મીઠી યાદ ઉદ્દિપક બની;બે-યાર શ્વાસો ધરી જાય છે ને જીવન લંબાય છે...

તમયો ખાઈ ને પણ જ્યારે હસવાનું થાય;યાદ કરજો ઉષ્મા શોષક પ્રક્રિયા આનેજ કહેવાય...

હું પોટેશિયમ ને તું સાયનાઈડ, અલગ રહીશું તો અસ્તિત્વનો સવાલ છે ;ભેગા મળીશું તો "ભલા " કોણ નામ લેશે?!

કોની મજાલ છે.. કોની મજાલ છે...

By: Parth Desai

**Even if you go for it
and it doesn't work
out, you still win.**

**You had the
courage to chase
after your dreams
and that's nothing
to be ashamed of.**

**That type of
bravery will take
you places.**

It's in the risk. That's where you grow. It feels good to achieve something no doubt. But that's not where the soul's gold is. It's in who you become. Embrace that. Know it deeply. So if it works out then great! If you try and fail, that's ok too! Keep going because you're growing. Failure is just feedback. That's all. Don't take it so hard it's showing you that you need to go in a different direction. But the journey, that's where the magic is.

Theodore Roosevelt once said, *"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who earns, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause, who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."* Never be amongst those cold and timid souls. Even if you are failing right now, keep your head up. Be proud that you're giving it your best shot.

By: Mitesh Panchal

Course of Electrical: Evolution

Electrical phenomena attracted the attention of European thinkers as early as the 17th century. The most noteworthy pioneers include **Ludwig Wilhelm Gilbert** and **George Simon Ohm** of Germany, **Hans Christian Orsted** of Denmark, **André-Marie Ampère** of France, **Alessandro Volta** of Italy, **Joseph Henry** of the United States, and **Michael Faraday** of England. Electrical engineering may be said to have emerged as a discipline in 1864 when the Scottish physicist **James Clerk Maxwell** summarized the basic laws of electricity in mathematical form showing that radiation of electromagnetic energy travels through space at the speed of light. Thus, light was shown as an electromagnetic wave, predicting that such waves could be artificially produced.

In 1887 the German physicist **Heinrich Hertz** fulfilled Maxwell's prediction by experimentally producing radio waves. The first practical application of electricity was the telegraph, invented by **Samuel F.B. Morse** in 1837. The need for electrical engineers was not felt until some 40 years later, upon the invention of the telephone in 1876 by **Alexander Graham Bell** & of the incandescent lamp in 1878 by **Thomas A. Edison**. These devices and Edison's first central generating plant, in New York City in 1882, created a large demand for people trained to work with electricity.

By:-Tarun Patel

- Electricity was introduced to Ethiopia in 1896 after Emperor Menelik II ordered two newly invented electric chairs as a form of humane capital punishment and realized they were useless in his country without electricity.
- Benjamin Franklin carried out extensive electricity research in the 18th century, inventing the lightning rod amongst his many discoveries. In the event of a lightning strike, the lightning rod conducts the strike through a grounded wire, protecting the building.
- A typical microwave oven consumes more electricity powering its digital clock than it does heating food.
- Lightning is a discharge of electricity in the atmosphere. Lightning bolts can travel at around 130,000 miles per hour and reach nearly 54,000 °F in temperature.
- Electric eels can produce strong electric shocks of around 500 volts for both self-defense and hunting.

The “Did You Know?” corner

Some never heard interesting facts are just round here in this corner which will make your mind seriously go, “Is it what it actually is?”

Did you know that electricity plays a role in the way your heart beats?

Electricity causes muscle cells in the heart to contract.

Electrocardiogram (ECG) machines, used by medical professionals, measure the electricity going through the heart. As the heart beats in a healthy person, the ECG machine displays a line moving across the screen with regular spikes.

Their cells and tissues do not offer electrons an easier route than the copper wire they're already traveling along. As a result, the electricity bypasses the birds and keeps flowing along the wire instead. Another reason why electricity will bypass a bird sitting on a wire is because there's no voltage difference in a single wire. For electrons to move, there must be what scientists call a difference in electrical potential.

Electricity flows by the movement of electrons through conductors. The copper wire in electrical wires is a great conductor of electricity. Copper allows electricity to flow easily along its surface. Electricity flows along the path of least resistance.

Birds don't get shocked when they sit on electrical wires because they are not good conductors of electricity.

PHOTO GALLERY









***THE REAL POTENTIAL OF ELECTRICITY LIES
NOT IN PROVIDING SOCIAL AMENITIES BUT
IN STIMULATING LONG-TERM ECONOMIC
DEVELOPMENT.***

Team Electrozone
Department Of Electrical engineering
Government engineering College
Modasa

