



National Engineering College
(An Autonomous Institution)
K.R. Nagar , Kovilpatti-628503



EEE NEWSLETTER

June 2014

Vol 2 Issue 1



VISION & MISSION OF THE COLLEGE

VISION:

Transforming lives through quality Education and research with human values

MISSION:

1. To maintain excellent infrastructure and highly qualified and dedicated faculty.
2. To provide a conducive learning environment with an ambience of humanity, wisdom, creativity and team spirit.
3. To promote the values of ethical behaviour and commitment to the society.
4. To partner with academic, industrial and government entities to attain collaborative research.

VISION & MISSION OF THE DEPARTMENT

VISION:

Promoting active learning, critical thinking coupled with ethical values to meet the global challenges.

MISSION:

1. To instill state-of-the-art technical knowledge and research capability that will prepare our graduates for professionalism and life-long learning.
2. To update knowledge to meet industrial and real world challenges.
3. To inculcate social and ethical values.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO):

The main objective of the B.E., Programme in Electrical and Electronics Engineering is to prepare students for either one or more of the following:

1. Excel in industrial or graduate work in Electrical Engineering and allied fields.
2. Practice their profession conforming to ethical values and active participation in the affairs of the profession.
3. Adapt to evolving technologies and stay current with their profession.

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STAFF ACHIEVEMENTS/ACTIVITIES**PAPER PUBLICATIONS**

R.V. Maheswari, Dr. P. Subburaj, B. Vigneshwaran, Dr. M. Willjuice Iruthayarajan, paper titled on “Support Vector Machine Based Denoising Technique for Removal of White Noise in Partial Discharge Signal”, Electric Power System and Components – Taylor and Francis. (Accepted for Publication)

R.V. Maheswari, Dr. P. Subburaj, B. Vigneshwaran, Dr. L. Kalaivani, paper titled on “Non Linear Support Vector Machine Based Partial Discharge Patterns Recognition Using Fractal Features”, Journal of Intelligent and Fuzzy System, IOS Press. (Accepted for Publication)

S.No.	Date	Name of the Staff	Guest Lecture/ Judge	Topic/ Event	College
1	23 rd – 29 th June 2014	Mr.R.Madavan, Assitant Professor	7 Days FDP Programme	Protection and Switchegear	PSG College Tech, Coimbatore
2	16 th – 22 nd June 2014	Mr.S.Senthil Kumar Assistant Professor	7 Days FDP Programme	Electromagnetic Theory	M.N.M.Jain Engineering College, Chennai
3	12 th – 19 th June 2014	Mr.B.Vigneshwaran, Assitant Professor	7 Days FDP Programme	Electromagnetic Theory	Kamaraj College of Engineering and Technology, Virudhunagar
4	2 nd & 3 rd May 2014	Ms.S.Jayanthi, Assistant Professor	National seminar	Distributed Generation & Microgrid	Kamaraj College of Engineering & Technology, Virudhunagar.
5	21 st to 23 rd May 2014	Mr.P.Samuel Pakianathan & Ms.S.Jayanthi, Assistant Professor	Training Programme	Introduction to Industrial Electrical System	L & T Switchgear Training Centre, Coonor.
6	18 th April 2014	Mr.G.Kannayeram, Mr.J.Sivadasan Mr.Sankara Kumar Ms.S.Jayanthi Ms.J.R.Deepeeha	Seminar	Seminar on ‘SCADA and its recent trends’	National Engineering College, Kovilpatti
7	22 nd May 2014	Ms.J.R.Deepeeha & Ms.S.Divya, Assistant Professor	National seminar	Research Issues and Challenges in cloud computing & Big Data Analysis	National Engineering College, Kovilpatti.

Technical Articles by Staff Member

Role of Antioxidants In Transformers

P. Samuel Pakianathan
Assistant Professor/EEE
National Engineering College

INTRODUCTION:

Transformer life management is an essential part of a modern power operation system. Oil filled transformer technology has been used for more than 100 years. The principle of operation has not changed over many decades. Many transformers that were built and installed in post World War still remain in service. A properly maintained power transformer can function for 50 to 75 years. However, the maintenance of the insulation system largely determines the extent of a transformer's life. In Future transformers will no doubt have increased capacity and size and their design may require the use of new materials. Transformers may operate at higher temperatures and in turn demand transformer oils of greater stability

Power transformers and distribution transformers are used in numerous public and private sector set-ups involved in electricity consumption, distribution and generation. An ideal transformer should have a negligible winding resistance, perfect coupling between windings and an ideal core. The transformers used in India range from 10 KVA capacities to 150 MVA. Reliable electrical supply has become one of the basic needs for development of society with the ever-increasing gap between demand and supply of electrical power. It is essential to utilize the existing power network to its optimal design capability. Economic factors usually favour continued operation of a power system as long as possible. The power transformer is an important and one of the costliest equipments in electrical power transmission system

Insulating oil in an electrical power transformer is commonly known as Transformer Oil. It is normally obtained by fractional distillation and subsequent treatment of crude petroleum. That is why this oil is also known as Mineral Insulating Oil. Transformer Oil serves mainly two purposes one it is liquid insulation in electrical power transformer and two it dissipates heat of the transformer i.e. acts as coolant. In addition to these, this oil serves other two purposes, it helps to preserve the core and winding as these are fully immersed inside oil and another important purpose of this oil is, it prevents direct contact of atmospheric oxygen with cellulose made.

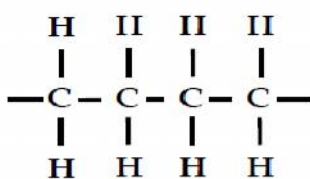
TYPES OF TRANSFORMER OIL:

Generally there are two types of Transformer Oil used in transformer,

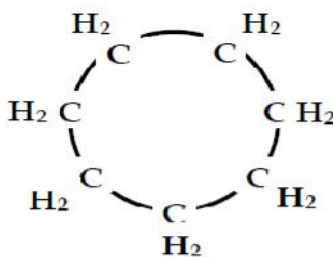
1. Paraffin based Transformer Oil

2. Naphtha based Transformer Oil

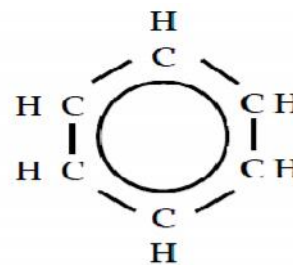
Naphtha oil is more easily oxidized than Paraffin oil. But oxidation product i.e. sludge in the naphtha oil is more soluble than Paraffin oil. Thus sludge of naphtha based oil is not precipitated in bottom of the transformer. Hence it does not obstruct convection circulation of the oil, means it does not disturb the transformer cooling system but in the case of Paraffin oil although oxidation rate is lower than that of Naphtha oil but the oxidation product or sludge is insoluble and precipitated at bottom of the tank and obstruct the Transformer cooling system. Although Paraffin based oil has above mentioned disadvantage but still in our country it is generally used because of its easy availability. Another problem with paraffin based oil is its high pour point due to the wax content, but this does not affect its use due to warm climate condition of India. Paper insulation of windings, which is susceptible to oxidation.



(a) Paraffin



(b) Naphthalene



(c) Aromatic (Benzene)

INTRODUCTION TO ANTI OXIDANTS:

An antioxidant is a molecule capable of inhibiting the oxidation of other molecules. Oxidation is a chemical reaction that transfers electrons from a substance to an oxidizing agent. Oxidation reactions can produce free radicals. In turn, these radicals can start chain reactions that damage cells. Antioxidants terminate these chain reactions by removing free radical intermediates, and inhibit other oxidation reactions. They do this by being oxidized themselves, so antioxidants are often reducing agents such as thiols, ascorbic acid or Polyphenols.

Although oxidation reactions are crucial for life, they can also be damaging; hence, plants and animals maintain complex systems of multiple types of antioxidants, such as glutathione, vitamin C, and vitamin E as well as enzymes such as catalase, superoxide dismutase and various peroxidases. Low levels of antioxidants, or inhibition of the antioxidant enzymes, cause oxidative stress and may damage or kill cells. As oxidative stress might be an important part of many human diseases, the use of antioxidants in pharmacology is intensively studied, particularly as treatments for stroke and neurodegenerative diseases. However, it is unknown whether oxidative stress is the cause or the consequence of disease. Antioxidants are widely used as ingredients in dietary supplements in the hope of maintaining health and preventing diseases such as cancer and coronary heart disease. Although initial studies suggested that antioxidant supplements might promote health, later large clinical trials did not detect any benefit and suggested instead that excess supplementation may be harmful.[2] In addition to these uses of natural antioxidants in medicine, these compounds have many Industrial uses, such as preservatives in food and cosmetics and preventing the degradation of rubber and gasoline.

POPULAR ANTIOXIDANTS

Some antioxidants found in topical anti-aging treatments and moisturizers include: Alpha Lipoic Acid, Coenzymes Q-10, Kinetin, Vitamin C (Ester) and Vitamin E.

Alpha Lipoic Acid is a natural antioxidant that neutralizes free radicals and protects the body from cellular damages from environmental factors.

Coenzyme Q10 is a co-factor of an enzyme naturally produced by the body, which is essential for tissue and cellular repair and building.

Kinetin is a Cytokinin, a naturally occurring compound of plant growth factors found in plants, animals and human DNA.

Vitamin C is also known as ascorbic acid, which is a water soluble white powder. Vitamin C is essential in the production of collagen. Vitamin C Ester is Vitamin C with fatty acids attached to it.

Vitamin E is known as tocopherol and is known for slowing the natural aging process.

TYPES OF ANTI OXIDANTS

1. Natural anti oxidants

E.g. Tocopheroles, Ascorbic acid, carotene.

2. Artificial anti oxidants

E.g. BHA, BHT, PG, TBHQ

NATURAL ANTIOXIDANTS

Natural and synthetic antioxidants can inhibit or delay the process of lipid oxidation. Antioxidants refer to any substances present at low concentration in foodstuffs and able to significantly prevent oxidation mediated by prooxidants. Prooxidants, considered as synonymous with reactive oxygen species, refer to any substances that when being with low concentration in foods can cause or promote an oxidative reaction. An antioxidant may play a role in ant oxidation as a free radical scavenger, reducing agent, chelator, and/or singlet oxygen scavenger. So far one of the understandings on this issue is that natural antioxidants are primarily plant phenol compounds occurring in all parts of plant bodies. Common phenol antioxidants from plant sources include flavonoid compounds, cinnamic acid derivatives, coumarins, tocopherols, carotenoids, and polyfunctional organic acids.

a. Tocopherols

Tocopherols as mono-phenolic compounds have been used in the food industry for several decades due to the functionality of preventing oxidation of polyunsaturated fatty acids of foods containing fats or oils. They are thus added to edible oils in storage, processing, and shipment. Tocopherols are found with high quantity in many plant sources typically including vegetable oils, the fresh leaves of vegetables, cereals, nuts, and oilseeds such as sesame, rice, corn, and soybean.

b. Ascorbic Acids

An important antioxidant is ascorbic acid acting as a reducing agent and free radical scavenger. Based on its redox properties, ascorbic acid and its etherified derivatives act as antioxidants by donating a hydrogen atom to free-radical chain reactions and thus protect double bonds of substrate molecules. Ascorbic acid can also perform as a synergist for tocopherol by

converting the oxidized tocopherols back to its reduced status. Furthermore, the dehydroascorbic acid is regenerated with a hydrogen atom stemming from reduced glutathione or NADH, where oxygen is reduced into water.

c.Carotenoids

Carotenoids are a category of natural, fat-soluble compounds ubiquitously existing in all parts of plants. They are mainly located in membrane systems of cells where one of the major functions of the compounds is to involve in photosynthesis, and are responsible for the red, orange, and yellow colours of plant leaves, fruits, and flowers. They are also found in algae, photosynthetic bacteria, non-photosynthetic bacteria, yeasts, and molds. Carotenoids are isoprenoid compounds. The majority of molecules of carotenoids have a 40-carbon polyene

LIMITING FACTORS OF NATURAL ANTI OXIDANTS:

- If not purified properly the natural antioxidants are less efficient.
- They are more expensive if purified.
- May impart color, aftertaste, or off-flavors to the product.
- They are less stable-Extremes of temperature and pH affects their stability.
- They themselves are susceptible for oxidation – Some of the natural antioxidant Like tocopherols is susceptible for oxidation because of their nature

ARTIFICIAL ANTIOXIDANTS:

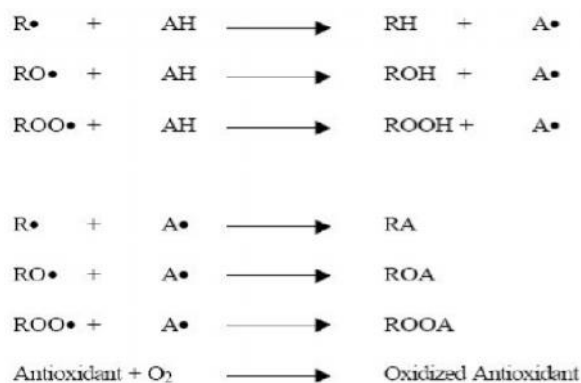
Numerous synthetic antioxidants have been registered, but only a few species are permitted as food additives by the law because of toxicity effects and other side-effects. Typical antioxidants permitted as the food additives are butylated hydroxy anisole (BHA), butylated hydroxy toluene (BHT), pueraria glycoside (PG), and tertiary-butylatedhydroquinone (TBHQ).

ANTIOXIDANT OPERATION AND MECHANISMS

The word anti-oxidant is used in a general sense to refer to any type of chemical agent which inhibits attack by oxygen or ozone (Scott, 1965). As applied to vegetable oils, antioxidants are compounds which interrupt the oxidation process by preferentially reacting with the fat radical to form a stable radical which does not quickly react with oxygen (Eastman Chemical Company, 2007). When the reference is to food uses, they are grouped as a food additive which has the effect of increasing the shelf life of foods by protecting them against deterioration caused by oxidation which leads to rancidity and color changes (FSANZ, 2006). Antioxidants function either by inhibiting the formation of free alkyl radicals in the initiation step or by interrupting the

propagation of the free radical chain (Ohio State University, 2008). In truncating the propagation step, the antioxidants function as hydrogen donors. Generally, the most popular antioxidants are hydroxyl phenol compounds with various ring substitutions. They are characterized by possessing low activation energies for the hydrogen donation process. The antioxidant radical which results is stabilized with its local electrons delocalized; hence antioxidant free radicals do not readily initiate other free radicals. They rather even react with lipid free radicals to form stable and complex compounds (Ohio State University, 2008). In investigating phenolic antioxidants, it is found that their antioxidant capabilities bear a relationship to the number of phenol groups occupying 1,2 or 1,4 positions in an aromatic ring as well as to the volume and electronic characteristics of the ring substituent's present (Fennema, 1985). In elucidating the mechanism of oxidative inhibition, it is generally established that anti-oxidants function as oxygen interceptors in the oxidative process thereby breaking the chain reaction that perpetuates the process (Bennion, 1995).

The general scheme is presented below:



ANTIOXIDANTS AND STABILITY OF VEGETABLE OILS

Numerous experimental works have established the positive effect of anti-oxidants on the oxidative stability of vegetable oils for both edible uses and industrial uses. An important class of anti-oxidants consists of the phenolic compounds Butylhydroxyanisole (BHA), Butylhydroxytoluene (BHT), Propyl Gallate, and Tert-butyl Hydroquinone (TBHQ). Their use in vegetable oils meant for domestic and industrial processes is widespread. Vegetable oils in their natural form possess constituents that function as natural antioxidants. Amongst them are ascorbic acids, α Tocopherole, β carotene, chlorogenic acids and flavanols. Tests conducted to investigate the effectiveness of natural anti-oxidants contained in red pepper oil added to soybean and sunflower oils indicate that they provide variable protection against light induced auto-oxidation. Measuring fatty acid formation and the measurement of peroxide values as a

means of monitoring oxidation, results indicate an inhibitive effect on oxidation. In another study which monitored the inhibitive action of tocopherols on rapeseed and palm kernel oils by measuring the presence of the oxidation product, monoaldehyde, indicate some measure of protection provided by these natural anti-oxidants

CONCLUSION

Thus the performance of vegetables oils are improved by adding anti oxidants into it. Some of the parameters will enhance the performance of the transformer. Thus the anti oxidants play a major role in power system.

Technical Articles by Students

New Bladeless Wind Turbine Claimed to be Twice as Efficient as Conventional Designs

Bladeless Windmill: Wind power without spinning blades? Impossible, you might say but you'd be wrong. The Dutch architecture firm Mecanoo installed this powerful, curious-looking contraption at the Delft University of Technology in March. Instead of translating the mechanical energy derived from the movement of large blades rotated by the wind, the bladeless turbine lets wind move electrically charged water droplets against the



direction of an electric field, increasing the potential energy of the particle. A collecting system then harvests that excess energy. The lack of large moving parts means the turbine is quieter and creates much less vibration, making it much better-suited to urban environments.

When it comes to the future of wind power, with cheaper and more efficient to boot. Saphon, out of Tunisia, is interested in finding partners to mass-produce and market their unique wind energy device, based on their own Zero Blade technology.

"The Zero-Blade Technology is largely inspired from the sailboat and is likely to increase the efficiency of the current wind power conversion devices. The blades are replaced by a sail shaped body while both hub and gearbox are removed."



R.Visnu Vidya
Pre Final year 'B'

Method of Recording Brain Activity Could Lead to Mind-Reading Devices

A brain region activated when people are asked to perform mathematical calculations in an experimental setting is similarly activated when they use numbers -- or even imprecise quantitative terms, such as "more than" -- in everyday conversation, according to a study by Stanford University School of Medicine scientists.

Using a novel method, the researchers collected the first solid evidence that the pattern of brain activity seen in someone performing a mathematical exercise under experimentally controlled conditions is very similar to that observed when the person engages in quantitative thought in the course of daily life.

The researchers monitored electrical activity in a region of the brain called the intraparietal sulcus, known to be important in attention and eye and hand motion. Previous studies have hinted that some nerve-cell clusters in this area are also involved in numerosity, the mathematical equivalent of literacy.

However, the techniques that previous studies have used, such as functional magnetic resonance imaging, are limited in their ability to study brain activity in real-life settings and to pinpoint the precise timing of nerve cells' firing patterns. These studies have focused on testing just one specific function in one specific brain region, and have tried to eliminate or otherwise account for every possible confounding factor. In addition, the experimental subjects would have to lie more or less motionless inside a dark, tubular chamber whose silence would be punctuated by constant, loud, mechanical, banging noises while images flashed on a computer screen.

The procedure involves temporarily removing a portion of a patient's skull and positioning packets of electrodes against the exposed brain surface. For up to a week, patients remain hooked up to the monitoring apparatus while the electrodes pick up electrical activity within the brain. This monitoring continues uninterrupted for patients' entire hospital stay, capturing their inevitable repeated seizures and enabling neurologists to determine the exact spot in each patient's brain where the seizures are originating.

The electrodes implanted in patients' heads are like wiretaps, each eavesdropping on a population of several hundred thousand nerve cells and reporting back to a computer.

In the study, participants' actions were also monitored by video cameras throughout their stay. This allowed the researchers later to correlate patients' voluntary activities in a real-life setting with nerve-cell behavior in the monitored brain region.

As part of the study, volunteers answered true/false questions that popped up on a laptop screen, one after another. Some questions required calculation -- for instance, is it true or false that $2+4=5$? -- while others demanded what scientists call episodic memory -- true or false: I had coffee at breakfast this morning. In other instances, patients were simply asked to stare at the crosshairs at the center of an otherwise blank screen to capture the brain's so-called "resting state."

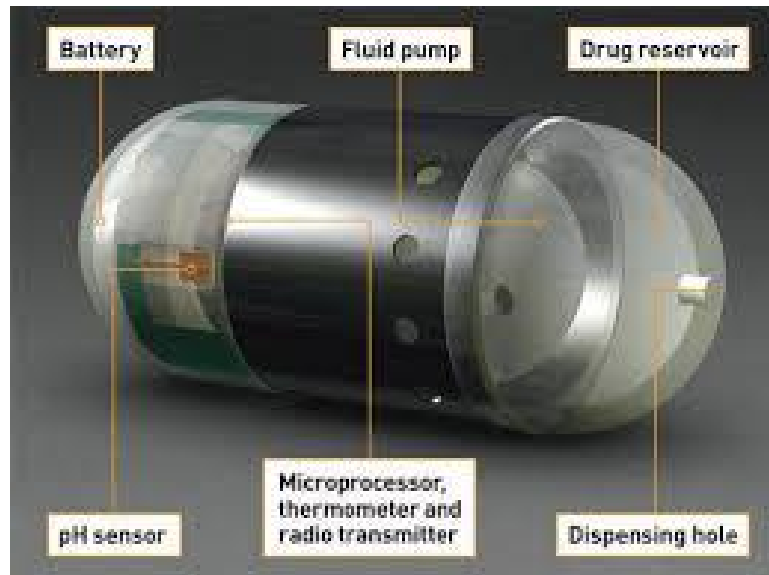
Consistent with other studies, Parvizi's team found that electrical activity in a particular group of nerve cells in the intraparietal sulcus spiked when, and only when, volunteers were performing calculations.

Any fears of impending mind control are, at a minimum, premature, said Greely. "Practically speaking, it's not the simplest thing in the world to go around implanting electrodes in people's brains. It will not be done tomorrow, or easily, or surreptitiously."



S.Porchitra
Pre Final year 'B'

Electronic Pills



As a part of new invention by scientists, Electronic pills have been invented by the electronics based scientists. They are wireless devices contained in swallow able capsules which are consumed by the patient whose stomach, abdominal parts are to be diagnosed.

These pills contain wireless sensors inside it which detects the range of temperature, pH in the stomach and blood. They also contain small cameras which collect information as they pass through the gastro intestinal tract. They also transmit the images of esophagus and the intestine to the computer through the radio transmitter. The drug reservoir part has the ability to store the drugs needed

These cater the needs of doctors and patients for an easier, less intrusive way for diagnosis of abdominal part and replace the endoscopy like methods. The capsules will retail for about \$500, while the computer system and software that evaluate the results will sell for about \$20,000. These pills would reach the market by this October.

R.Uma Maheswaran

Final year 'B'

PERSONALITY TO KNOW

NIKOLA TESLA

Nikola Tesla was born around midnight, between July 9 and July 10, 1856 during a fierce lightning storm. While others declared the lightning a bad omen. This child will be a child of darkness, They said, to which his mother replied: “No. He will be a child of light.” Early in his career, Tesla worked for Edison, designing direct current generators, but famously quit to pursue his own project: the alternating current induction motor. They were on different sides of the so-called “Current Wars,” with Edison pushing for direct current and Tesla for alternating current. But many considered them as Steve Jobs and Bill Gates of their time: one the brilliant marketer and businessman and the other a visionary and “tech guy.”



Tesla demonstrated that AC was perfectly safe by famously shooting current through his own body to produce light. Tesla developed and used florescent bulbs in his lab some 40 years before industry "invented" them. The Tesla Coil is certainly something that big industry would have liked to suppress, the concept that the Earth itself is a magnet that can generate electricity (electromagnetism) utilizing frequencies as a transmitter. All that is needed on the other end is the receiver much like a radio. In the race to develop transatlantic radio, Tesla described to his funder and business partner, J.P. Morgan, a new means of instant communication that involved gathering stock quotes and telegram messages, funneling them to his laboratory, where he would encode them and assign them each a new frequency. That frequency would be broadcast to a device that would fit in our hand. Tesla's invention of the electric motor has finally been popularized by a car brandishing his name. Tesla had envisioned a future filled with intelligent cars, smart phone, wireless internet, robotic human companions, the use of sensors, and autonomous systems.

Tesla had what's known as a photographic memory. He was known to memorize books and images and stockpile visions for inventions in his head. He also had a powerful imagination and the ability to visualize in three dimensions. Nikola Tesla was one of the greatest minds of his times, but his inventions were suppressed for personal benefits of many.

Nikola Tesla:

Let the future tell the truth, and evaluate each one according to his work and accomplishments. The present is theirs; the future, for which I have really worked, is mine.

M. Pranav Karthikeyan, Pre Final year 'B'

PLACEMENT DETAILS

Excellency shown by our passed out final year students in campus recruitment to various companies. Hearty wishes to all the students from Management, Director, Principal, HOD/EEE and Faculty members for their bright futures and wish you all success.

S.No.	Name of the Student	Placements/Exams
1.	Ahamedullah. M.A	Tessolve
2.	Alice Sugunabai. V	Hexaware Solution
3.	Chithra. K	Doyensys
4.	Esther Nancy. J	Face/Hexaware Solution/TANCET Scorer
5.	Jasmine Jeba. G	TCS
6.	Karkuvelraja. T	Doyensys
7.	Karthick Maharajan. N	CAT
8.	Karthik. V	Doyensys
9.	Karthika. M	Hexaware Solution/GATE Scorer
10.	Muthuselvi. A	Coastel Energen
11.	Rini Christy. X	Electronics Corporation India Private Limited
12.	Thangalakshmi. T	CAT Scorer
13.	Venkadesh. M	CAT Scorer
14.	Clinton.T	GATE Scorer

GRADUATE APTITUDE TEST IN ENGINEERING – GATE

M.BAKRUTHEEN,
Assistant Professor/EEE, NEC

Graduate Aptitude Test in Engineering (GATE) is an all India examination that tests the comprehensive ability of the candidate in undergraduate courses in their respective branches. The examinations are conducted jointly by Indian Institute of Sciences (IISc) - Bengaluru and seven Indian Institute of Technology (IIT) institutes. The score can be used for obtaining admissions in various post-graduate programs in IITs, NITs, Government Universities and other Engineering colleges. The score may also be used by Public and Private Sector Undertakings for employment screening purposes. Some of the PSU companies which accepts GATE score for their recruitment includes: BHEL, IOCL, ONGC, Power Grid, GAIL, NTPC and BARC (DAE entrance to BARC training schools).

The number of candidates appearing for GATE exam increasing every year substantially because of decline of job opportunities for fresher in the job market at present and pursuing higher qualification is always a feature in cap and provides better employment opportunities. Other reason for this huge surge of candidates appearing for GATE exam recently attributes to most of the public sector units (PSUs) accepts GATE score and calls candidates for interviews based on the GATE score.

The GATE score of a candidate reflects a relative performance level in a particular subject in the exam. The questions in a paper may be designed to test the following abilities:

Ability	Descriptions
Recall	These are based on facts, principles, formulae or laws of the discipline of the paper. The candidate is expected to be able to obtain the answer either from his/her memory of the subject or at most from a one line computation.
Comprehension	These questions will test the candidate's understanding of the basics of his/her field, by requiring him/her to draw simple conclusions from fundamental ideas.

Application	In these questions, the candidate is expected to apply his/her knowledge either through computation or by logical reasoning.
Analysis and Synthesis	In these questions, the candidate is presented with data, diagrams, images etc. that require analysis before a question can be answered. A Synthesis question might require the candidate to compare two or more pieces of information. Questions in this category could, for example, involve candidates in recognizing unstated assumptions, or separating useful information from irrelevant information.

General Pattern of GATE:

The GATE examination consists of a single paper of 3-hour duration, in which there will be a total of 65 questions carrying 100 marks. The allocations of weightage for different topics are given below.

Topics	Percentage Questions (in total 65)	Remarks
General Aptitude	15% of total questions	Five 1 mark questions Five 2 marks questions
Engineering Mathematics	15% of total questions	25- 1 mark questions 30 - 2 mark questions
Subject Paper	70% of total questions	

For 1 mark multiple choice questions, 1/3 marks will be deducted for a wrong answer. Similarly for 2 mark multiple choice questions, 2/3 marks will be deducted for a wrong answer. There is no negative marking for numerical answer type questions.

GATE for Electrical Engineering:

For the Electrical Engineering (EE), the subjects which are included in the GATE syllabus along with Engineering Mathematics & General Aptitude and their subject wise analysis of previous year GATE questions from 2001-2014 below.

Subjects	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Electric Circuits and Fields	23	17	19	17	26	24	12	9	10	15	15	10
Signal & Systems	-	4	8	7	11	10	3	9	6	10	7	5
Electrical Machines	27	32	24	28	22	25	19	10	9	7	5	15
Power Systems	27	26	20	22	17	18	12	14	11	7	7	7
Control Systems	17	16	15	15	14	14	12	8	9	9	10	12
Electrical and Electronic Measurements	19	17	13	12	4	4	6	5	7	9	4	5
Analog and Digital Electronics	23	22	22	20	19	19	11	12	10	10	13	11
Power Electronics and Drives	14	16	13	17	20	16	10	7	12	8	12	5
Engineering Mathematics	-	-	16	12	17	20	15	11	11	10	12	15
General Aptitude	-	-	-	-	-	-	-	15	15	15	15	15
Total	150	150	150	150	150	150	100	100	100	100	100	100

GATE preparations tips:

Candidates must work hard to obtain a good score in GATE exam. The students should plan in a systematic way by planning their regular academics in the final year of engineering course.

- After collecting the syllabus for the exam, the students must identify the suitable textbooks for preparation. Please remember only good text books with strong basic concepts will be helpful. Collect the previous question papers and prepare a timetable based on the weightage/priority of subjects in the exam.
- Identify the subjects which will have more importance in the exam and prepare such subjects in all means i.e., definitions, theory, problems, etc.

- Make notes short and concise
- Maintain formulas, short-cuts and tips/tricks in notes
- Every field of study has its own vocabulary, so identify words and terms used to represent specific concepts. Maintain them in your notes.
- Sometimes objective questions can be used to test your ability to distinguish concepts, ideas, theories, events, facts from each other. Construct diagrams, charts, tables or lists to summarize relationships.
- After completion of each chapter in the subject, please go through the previous GATE question papers and solve the questions related to that chapter. This will improve the confidence of the student which is one of the essential things for success.

To obtain a good percentile or score in GATE exam, one should have a better knowledge in tough subjects. Few subjects may be easy for most of the students and questions in such subjects may be answered by more number of students. But the score can be improved if we can solve the problems in tough subjects as only few students may concentrate in such subjects.

General Tips for Answering Questions:

Like any exam it contains a mix of easy, difficult, and highly difficult questions. In GATE exam time factor is not a big criteria. Ample amount of time is available to answer the questions. So it will be beneficial to answer the questions in 2 to 3 rounds. In first round entire paper should be scanned and easy and very easy questions (simple theoretical questions and small numerical problems) should be covered and solved. In 2nd and 3rd rounds difficult questions are identified and solved.

In GATE exam it is not important how many questions you answered but how many questions you correctly answered. It should be kept in mind that negative marking plays a key role in scoring. When you do not understand the question it is not advisable to answer such questions as many times it may end up in negative marking. In some questions if you know the answer will be in any of the two options then you can test your luck. In simple selective preparation and selective answering is the key to GATE exam score.

GATE preparation books for Electrical Engineering:

Subject	Title of the Books	Author(s) of the Books
Engineering Mathematics – Linear algebra, Calculus, Differential equations, Complex variables, Probability & Statistics and Numerical Methods	Matrices	A.R. Vasista
	Higher Engineering Mathematics	B.S. Grewal
	Advanced Engineering Mathematics	Kreyszig
	Advanced Engineering Mathematics	R.K. Jain and S.R.K. Iyengar
	Probability	Schaum series
	Numerical methods	Rajaraman
Electric Circuits and Fields	Engineering Circuit Analysis	W.H. Hayt and J. Kemmerly
	Networks and Systems	D. Roy Choudary
	Elements of Engineering Electromagnetics	N. N. Rao
	Engineering Electromagnetics	William Hart Hayt
	Elements of Electromagnetics	Mathew N.O. Sadiku
Signal & Systems	Signals and Systems	Oppenheim and Willsky
	Theory & problems of Signals and Systems	Schum's Outline Series
Electrical Machines	Electrical Machinery	P.S. Bimbhra
	Electrical Machines	Nagrath and Kothari
Power Systems	Electrical Power Systems	C. L. Wadhwa
	Modern Power System Analysis	I.J. Nagrath and D.P. Kothari
	Power System Engineering	I.J. Nagrath and D.P. Kothari
Control Systems	Control Systems Engineering	I.J. Nagrath and Madan Gopal
	Automatic Control System	B.C. Kuo

	Linear Control System	B.S. Manke
Electrical and Electronic Measurements	Electrical and Electronic Measurements & Instrumentation	A.K. Sawhney
	Electrical Measurements & Measuring Instruments	E.W. Golding
Analog and Digital Electronics	Integrated Electronics: Analog and Digital Circuits and Systems	Jacob Millman and Christos C. Halkias
	Solid State Electronic Devices	Ben Streetman and Sanjay Banerjee
	Microelectronic Circuits	Adel S. Sedra, Kenneth C. Smith
	Op-Amps and Linear Integrated Circuits	Ram Gayakward
	Electronic Devices and Circuits	J.B. Gupta
	Semiconductor devices: Physics and Technology	S.M. Sze
	Digital Design	Morris Mano
	Modern Digital Electronics	R.P. Jain
	8085 Architecture, Programming & Applications	Ramesh Gaonkar
Power Electronics and Drives	Power Electronics	P.S. Bimbhra
	Power Electronics	M. Singh and K. Khanchandani

Useful Website for preparation of GATE:

Study Materials	http://www.nptel.iitm.ac.in
	http://ocw.mit.edu/index.htm
	http://www.gatecounsellor.com
	http://csvls.blogspot.com/
	http://learnhub.com/practice-tests/gate
	http://edooni.com
Online Test	http://www.indiabix.com/online-test/electrical-engineering-test
	http://gate.practice-tests.learnhub.com/
	http://gate.jumbotests.com/

Scopes for GATE scorer:

1. A good GATE score is helpful for getting admission in to IITs, IISC, IIITs, NITs and many other renowned institutions.
2. GATE qualification is also a minimum requirement to apply for various fellowships awarded by many Government organizations.
3. GATE qualified candidates are also eligible for the award of Junior Research Fellowship in CSIR Laboratories and CSIR sponsored projects.
4. Focused GATE Preparation also helps in other prestigious PSU recruitment examinations like CIL, AP Genco, AP Transco, NTPC, BSNL etc
5. Many PSUs like HAL, IOCL, PGCIL, BARC etc consider GATE score
6. Students who qualify in GATE are entitled to a stipend of Rs 8,000 per month during their M.Tech course.
7. GATE score definitely gives one an edge when it comes to joining reputed companies as well as off-campus recruitments.
8. Above all, it certainly gives you a huge technical edge over others in all your interviews and career planning.

CRACK GATE

1. Leakage flux in an induction motor is

- (A) flux that leaks through the machine
- (B) flux that links both stator and rotor windings
- (C) flux that links none of the windings
- (D) flux that links the stator winding or the rotor winding but not both

Answer: (D)

2. The angle in the swing equation of a synchronous generator is the

- (A) angle between stator voltage and current
- (B) angular displacement of the rotor with respect to the stator
- (C) angular displacement of the stator mmf with respect to a synchronously rotating axis.
- (D) angular displacement of an axis fixed to the rotor with respect to a synchronously rotating axis.

Answer: (D)

3. A band-limited signal with a maximum frequency of 5 kHz is to be sampled. According to the sampling theorem, the sampling frequency in kHz which is not valid is

- (A) 5 (B) 12 (C) 15 (D) 20

Answer (A)

10. A bulb in a staircase has two switches, one switch being at the ground floor and the other one at the first floor. The bulb can be turned ON and also can be turned OFF by any one of the switches irrespective of the state of the other switch. The logic of switching of the bulb resembles

- (A) an AND gate (B) an OR gate (C) an XOR gate (D) a NAND gate

Answer (C)

4. A single-phase transformer has no-load loss of 64 W, as obtained from an open circuit test. When a short-circuit test is performed on it with 90% of the rated currents flowing in its both LV and HV windings, the measured loss is 81 W. The transformer has maximum efficiency when operated at

- (A) 50.0% of the rated current. (B) 64.0% of the rated current.
- (C) 80.0% of the rated current. (D) 88.8% of the rated current.

Answer: (C)

5. A 4-pole induction motor, supplied by a slightly unbalanced three-phase 50Hz source, is rotating at 1440 rpm. The electrical frequency in Hz of the induced negative sequence current in the rotor is

(A) 100 (B) 98 (C) 52 (D) 48

Answer: (B)

6. The system is

- (A) controllable but not observable
- (B) not controllable but observable
- (C) both controllable and observable
- (D) both not controllable and not observable

Answer: (A)

7. The Peak to Peak source current ripple in amps is

(A) 0.96 (B) 0.144 (C) 0.192 (D) 0.288

Answer: (C)

8. The average source current in Amps in steady-state is

(A) $3/2$ (B) $5/3$ (C) $5/2$ (D) $15/4$

Answer: (B)

9. If the base impedance and the line-to line base voltage are 100 ohms and 100kV respectively, then the real power in MW delivered by the generator connected at the slack bus is

(A) -10 (B) 0 (C) 10 (D) 20

Answer: (C)

10. Appropriate transition i.e., Zero Voltage Switching (ZVS) / Zero Current Switching (ZCS) of the IGBTs during turn-on / turn-off is

- (A) ZVS during turn off (B) ZVS during turn-on
- (C) ZCS during turn off (D) ZCS during turn-on

Answer: (D)

TIME TO KNOW OUR ALUMNI

Mr. Vinoth,
Batch : 2000 – 2004 (last bench student).
Contact :
Ph : 00974 - 33290251 / 7006040
Email : keepintouch_vino@yahoo.co.in



Started his career as Sales Engineer at M/s Ahmed Ramadan Juma Est, a construction and Garage Equipment company (2004 – 2005) in Dubai, one of the massively growing business hub in Gulf countries. He was given responsibility to Consult, Develop Enquiry, Product awareness, Technical discussion & submittals, Demonstration at site & Sale of products like Generator, Compressor, Welding Machines, road Dampers.

He switched to concentrate on one product related to engineering and joined ETA – Zenath Power system (2005 to 2009), a Indian management Co specially focusing on Power Generators ranging from 10 kVA to 1500 kVA. First two years he was given roll to perform both Sale & rental of Gensets. Engineering played huge roll like load calculation, direct site visit with consultants, sizing of gensets, cable calculation, working on site electrical drawings.

Second half he was asked to handle Gensets in projects / tenders, which is more technical & needs Management capability to discuss things at higher level. This will involve complete electrical & electronic knowledge on high rated Generators, Sizing, installation of synchronization & ATS Panels, Genset EMCP Programming etc.,

During course of time he completed his MBA distance in Marketing at Madurai Kamaraj University (2008 – 2009) to help his career path.

He Switched to Qatar, While Dubai was down on due to world recession. Qatar forecasting on world games including Asian Games (2004) which was key turn in its development & was mainly focusing on FIFA – 2022 which was officially awarded. Based on FIFA 2022 forecast, infrastructure and trading activities started picking up & world expecting business boom in that part of country. He joined in Manlift Group (2009-2012), A US Management Company exclusive for Generators & Manlift Genies. He was given roll as Sr. Projects Engineer with a Technical & Application team to work with me on construction & projects in Qatar.

He got an opportunity to work with CATERPILLAR (2012 – till time) – His dream product to deal with. Caterpillar is the world's top brand for Generators & Construction Machinery. A perfect place to explore with all his above experiences. He took up as Sr. Sales Engineer & Market forecasting management position.

He handle major projects and Key accounts & responsible for all technical & commercial activities. One of his mile stonewas Vodafone contract where I had managed to deliver 230 and plus Generators. Hewas appreciated as “sales person of the year – 2013, middle east” & a visit to Caterpillar, china was also arranged as part of appreciation.

INDUSTRY PROFILE



ALTERNATOR VOLTAGE REGULATOR FOR SLIPRING TYPE ALTERNATOR BRUSHLESS ALTERNATOR

Venus Electronics, are a proprietorship firm, working as a reliable **manufacturer and supplier** in this competitive market. We deal in superlative range of products such as **Alternator Voltage Regulators, Governor Controller, Diesel Engine Auto Stopper, Governor Control System Digital Alternator Voltage Regulator, Digital Governor Controller, Electric Governor Controller**, etc.

Our concern for consistent up gradation of Technological expertise & exacting quality standards to churn out Zero - defect products, emanates right from material Sourcing stage to manufacture and delivery to customers at reasonable price.

Needless to state that we have the most modern and sophisticated manufacturing and testing facility with latest computer technology skilled personnel.

Our burning desire for products of zero defect, and consistent quality control measures are enabling us to be in the process of certification by ISO9001-2000 for our manufacturing activities, thus further enhancing our continued commitments to quality standards for achievement of not only customer satisfaction but also dissonance if any.

In short we believe that technological expertise, Exacting quality standards and Reasonable price are our key priorities towards achieving customer satisfaction. We are one of leading and trusted manufactures of Automatic voltage Regulators (AVRs), static Excitation System (VENUS) Panels, AME Penels, Synchronizing panels which are suitable for both LT Generator.



Company Profile

Business Type	Manufacturer / Supplier
Year Established	: 1950
Products Supplier and Manufacturer	Water heater, solar gas water heater

Core Competencies

- Ethical business practices
- International quality standards
- Qualified and dedicated professionals
- Timely delivery of the Governor Control System
- Use of state-of-the-art amenities
- Well established infrastructure

IES – Indian Engineering Services

Electrical Engineering Syllabus for IES Exam

Paper Pattern

IES 2014 exam will consist of two parts i.e. written test of 1000 marks and interview of 200 marks. Out of 1000 marks, 600 marks are allotted to objective type questions whereas 400 marks are allotted to conventional test.

This exam consists of three phases; the first phase is allocated to General Ability paper that includes General English and General Studies, each of 200 marks each. Next, there will be two objective technical papers, followed by two conventional technical papers.

There will be negative marking for each incorrect response. For each wrong answer, 1/3rd of the total mark allotted to the question will be deducted.

IES Preparation

One of the essential tips to crack IES exam is proper planning with devotion. Since IES is among the toughest exams in India, it is recommendable for students to take up any coaching at any of the top institutes for IES coaching. Candidates should improve writing skills as the exam includes important paper i.e. General Ability. Make sure that you have the best authors' books that cover almost entire portion of the subjects that you have chosen. Solve as many sample papers as possible.

Issue of Application form: March

Exam Date: June

CATEGORY III: ELECTRICAL ENGINEERING (GROUP A & B SERVICES/ POSTS)

- (i) Indian Railway Service of Electrical Engineers
- (ii) Indian Railway Stores Service
- (iii) Central Electrical & Mechanical Engineering Service
- (iv) Indian Naval Armament Service
- (v) Military Engineer Service
- (vi) Assistant Executive Engineer (in Ministry of Defence)
- (vii) Assistant Naval Store (in Indian Navy)

Paper I

1. EM Theory

Electric and magnetic fields. Gauss's Law and Amperes Law. Fields in dielectrics, conductors and magnetic materials. Maxwell's equations. Time varying fields. Plane-Wave propagating in dielectric and conducting media. Transmission lines.

2. ELECTRICAL MATERIALS

Band Theory, Conductors, Semi-conductors and Insulators. Super-conductivity. Insulators for electrical and electronic applications. Magnetic materials. Ferro and ferri magnetism. Ceramics, Properties and applications. Hall effect and its applications. Special semi conductors.

3. ELECTRICAL CIRCUITS

Circuits elements. Kirchoff's Laws. Mesh and nodal analysis. Network Theorems and applications. Natural response and forced response. Transient response and steady state response for arbitrary inputs. Properties of networks in terms of poles and zeros. Transfer function. Resonant circuits. Threephase circuits. Two-port networks. Elements of two-element network synthesis.

4. MEASUREMENTS AND INSTRUMENTATION

Units and Standards. Error analysis, measurement of current, Voltage, power, Power-factor and energy. Indicating instruments. Measurement of resistance, inductance, Capacitance and frequency. Bridge measurements. Electronic measuring instruments. Digital Voltmeter and frequency counter. Transducers and their applications to the measurement of non-electrical quantities like temperature, pressure, flow-rate displacement, acceleration, noise level etc. Data acquisition systems. A/D and D/A converters.

5. CONTROL SYSTEMS

Mathematical modeling of physical systems. Block diagrams and signal flow graphs and their reduction. Time domain and frequency domain analysis of linear dynamical system. Errors for different type of inputs and stability criteria for feedback systems. Stability analysis using Routh-Hurwitz array, Nyquist plot and Bode plot. Root locus and Nicols chart and the estimation of gain and phase margin. Basic concepts of compensator design. State variable matrix and its use in system modelling and design. Sampled data system and performance of such a system with the samples in the error channel. Stability of Sampled data system. Elements of non-linear control analysis. Control system components, electromechanical, hydraulic, pneumatic components.

Paper II

1. ELECTRICAL MACHINES AND POWER TRANSFORMERS

Magnetic Circuits - Analysis and Design of Power transformers. Construction and testing. Equivalent circuits. Losses and efficiency. Regulation. Auto-transformer, 3-phase transformer. Parallel operation.

Basic concepts in rotating machines. EMF, torque, Basic machine types. Construction and operation, leakage losses and efficiency.

B.C. Machines. Construction, Excitation methods. Circuit models. Armature reaction and commutation. Characteristics and performance analysis. Generators and motors. Starting and speed control. Testing, Losses and efficiency.

Synchronous Machines. Construction. Circuit model. Operating characteristics and performance analysis. Synchronous reactance. Efficiency. Voltage regulation. Salient-pole machine, Parallel operation. Hunting. Short circuit transients.

Induction Machines. Construction. Principle of operation. Rotating fields. Characteristics and performance analysis. Determination of circuit model. Circle diagram. Starting and speed control.

Fractional KW motors. Single-phase synchronous and induction motors.

2. POWER SYSTEMS

Types of Power Stations, Hydro, Thermal and Nuclear Stations. Pumped storage plants. Economics and operating factors.

Power transmission lines. Modeling and performance characteristics. Voltage control. Load flow studies. Optimal power system operation. Load frequency control. Symmetrical short circuit analysis. ZBus formulation. Symmetrical Components. Per Unit representation. Fault analysis. Transient and steady-state stability of power systems. Equal area criterion.

Power system Transients. Power system Protection Circuit breakers. Relays. HVDC transmission.

3. ANALOG AND DIGITAL ELECTRONICS AND CIRCUITS

Semiconductor device physics, PN junctions and transistors, circuit models and parameters, FET, Zener, tunnel, Schottky, photo diodes and their applications, rectifier circuits, voltage regulators and multipliers, switching behavior of diodes and transistors.

Small signal amplifiers, biasing circuits, frequency response and improvement, multistage amplifiers and feed-back amplifiers, D.C. amplifiers, Oscillators. Large signal amplifiers, coupling methods, push pull amplifiers, operational amplifiers, wave shaping circuits. Multivibrators and flip-flops and their applications. Digital logic gate families, universal gates-combination circuits for arithmetic and logic operational, sequential logic circuits. Counters, registers, RAM and ROMs.

4. MICROPROCESSORS

Microprocessor architecture-Instruction set and simple assembly language programming. Interfacing for memory and I/O. Applications of Micro-processors in power system.

5. COMMUNICATION SYSTEMS

Types of modulation; AM, FM and PM. Demodulators. Noise and bandwidth considerations. Digital communication systems. Pulse code modulation and demodulation. Elements of sound and vision broadcasting. Carrier communication. Frequency division and time division multiplexing, Telemetry system in power engineering.

6. POWER ELECTRONICS

Power Semiconductor devices. Thyristor. Power transistor, GTOs and MOSFETS. Characteristics and operation. AC to DC Converters; 1-phase and 3-phase DC to DC Converters; AC regulators. Thyristor controlled reactors; switched capacitor networks.

Inverters; single-phase and 3-phase. Pulse width modulation. Sinusoidal modulation with uniform sampling. Switched mode power supplies.

STUDENTS' ACHIEVEMENTS**FINAL YEAR A**

S.No.	Name	Place	College	Date
INPLANT TRAINING				
1	S.Krishnaveni S.Chandiya Uma A.JeniferEbaneezer S.M.K.AjithShry N.Akila M.Krishnaveni M.Anuja C.R.JeniseDeepa C.Kaveri S.Abinaya M.Manjula K.S.FathimaIrfana V.Manikandan R.DuraiPagalavan M.Dhinesh G.KaruthaPandi P..Muthu Kumar	Conoor	L&T Switch gear Training Centre	20-5-14 to 22-5-14
2	S.Abul Hassan	Indian Rare Earth Ltd,Manavazhakurichi	National Engineering College,Kovilpatti	19-5-2014 to 24-05-2014

FINAL YEAR B

S.No.	Name	Place	College	Date
INPLANT TRAINING				
1	B.Saradha Devi P.Saranya C.Sangeetha D.Uma S.Ramalakshmi S.RamaSankari P.Nanthinidevi M.Sasikala B.Agamadevi C.Jeya Rani T.Suriya	TNEB Thalaiyuthu Substation	National Engineering College,Kovilpatti	19-5-2014 to 23-5-2014
2	A.Venkat Subramanian	Indian Rare Earth Ltd,Manavazhakurichi	National Engineering College,Kovilpatti	19-5-2014 to 24-05-2014

3	S.Sreeram M.Siva Chidambaram K.PonEsakki Raman	Thirumakkottai gas turbine Power Plant	National Engineering College,Kovilpatti	26-5-2014 to 30-5-2014
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PREFINAL YEAR A

S.No.	Name	Place	College	Date
INPLANT TRAINING				
1	G.Muthulakshmi G.AntanyMekala G.Levelka P.Nagalakshmi A.Jenifar S.Kanagavalli	Tuticourin Thermal Power Station	National Engineering College,Kovilpatti	26-5-14 To 30-5-14
2	P.Amarnath T.Aravind Mari G.Aneruth Mani M.Bala Krishnan A.Daniel Praveen Raj J.AntonyIruthayaraj S.P.Atul Krishnan A. Bala Chandar	Tuticourin Thermal Power Station	National Engineering College,Kovilpatti	19-5-14 To 23-5-14
3	V.Logesh Raja P.MariSankar K. Elavarasan	Tuticourin Thermal Power Station	National Engineering College,Kovilpatti	2-6-14 To 6-6-14
4	C.Karhthika N.Maheswari K.Karpagavalli J.Anitha S.T.AngalaParameshwari	Railnet Software Solutions	National Engineering College,Kovilpatti	9-6-14 To 14-6-14
5	V.Amsaveni R.NanthiniDhanalakshmi	Tuticourin Thermal Power Station	National Engineering College,Kovilpatti	26-5-14 To 30-5-14
6	B.Muthu Lakshmi S.MuthuAbirami	Bharat Sanchar Nigam Limited	National Engineering College,Kovilpatti	19-5-14 To 23-5-14
7	M.Manogari S.Divyalakshmi J.Anitha	Pioneer Power Systems Pvt Ltd	National Engineering College,Kovilpatti	17-4-14 To 19-4-14
12	C.Karthika	Loyal Textile Mills	National Engineering College,Kovilpatti	4-5-14 To 7-5-14

13	A.Aishwaryaa F.Alma Margaret	Seshayee Paper Mills	National Engineering College,Kovilpatti	12-6-14 To 13-6-14
14	P.AmalaPriya	Bsnl	National Engineering College,Kovilpatti	2-6-14 To 7- 6-14
15	M.Gopal M.Gurusamy M.Kesavamani	Tamilnadu Electricity Board	National Engineering College,Kovilpatti	19-5-14 To 22-5-14
16	A.Arun R.MuthuKarthik M.MuthuManikandan	Kudankulam Nuclear Power Project	National Engineering College,Kovilpatti	26-5-14 To 31-5-14
17	S.MohamedSuhail	Kudankulam Nuclear Power Project	National Engineering College,Kovilpatti	26-5-14 To 5- 6-14
18	B.Balamurugan R.Manikandan	Railnet Software Solutions	National Engineering College,Kovilpatti	2-6-14 To 7- 6-14
19	A.Mariappan	India Cements	National Engineering College,Kovilpatti	9-6-14 To 14- 6-14
20	R.Muneeswaran	The Ramco Cements Ltd	National Engineering College,Kovilpatti	19-5-14 To 23-5-14

PREFINAL YEAR B

S.No.	Name	Place	College	Date
INPLANT TRAINING				
1	S.M.K.Udhaya Vijay	Aravindar Windmill PvtLtd.,V	National Engineering College,Kovilpatti	19.05.2014- 22.05.2014
2	R.Umamaheshwaran M.S.Pranavakartikeyan M.Subbiah P.Shanmugam S.Pandiaraj Reddy.S.Vijay A.PraveenBalaji S.Santhosh Kumar Velraj.M	HCL technologies, Chennai.	National Engineering College,Kovilpatti	05.06.2014- 07.06.2014
3	Sathianarayanan.M Senthilkumar .K P.Suresh Kumar K.Sudhakar VairaPrakash.D Sivaram.S.G S.Solomon Daniel	Thermal Power Station tuticorin	National Engineering College,Kovilpatti	19.05.2014- 23.05.2014
4	M.Naveen Lingam	Thermal Power Station ,tuticorin	National Engineering College,Kovilpatti	02.06.2014- 06.06.2014

5	Rama Subramanian.S Shanmugaraj.M Natarajan.S	The India Cements Ltd.,Tirunelveli	National Engineering College,Kovilpatti	09.06.2014- 14.06.2014
6	Sathyananthan.P elvam.P Subbiah.M VigneshKumar.V	MS Victory Windmill	National Engineering College,Kovilpatti	03.06.2014- 07.06.2014
7	SaravanaKumar.R.S	TECHSER,Chennai.	National Engineering College,Kovilpatti	20.05.2014- 30.05.2014
8	Sheikmoideen.N Syed Mohamed Mazood.L	Nuclear Power Plant,kudankulam	National Engineering College,Kovilpatti	26.05.2014- 05.06.2014
9	Indhumathy.M Revathi.E Sunitha.R	Pioneer Power Ltd., Ramnad.	National Engineering College,Kovilpatti	17.04.2014- 19.04.2014
10	Pradeepa.C Saktheesvari.S U.ShanmugaPriya A.SomaSundari R.VishnuVidya	Thermal Power Station Tuticorin.	National Engineering College,Kovilpatti	02.06.2014- 06.06.2014
11	Priyadharshini.S Rashmisilvania.A G.SivaRanjani SnehaPremaLochini.M Sivaramalakshmi.V P.Thangeshwari Usharani.R	Thermal Power Station Tuticorin.	National Engineering College,Kovilpatti	26.05.2014- 30.05.2014
12	Sathya.M Selvarani.S Selvajothi.G Sneha.R	Seshasayee Paper And Boards Ltd.,Tirunelveli	National Engineering College,Kovilpatti	12.06.2014- 13.06.2014
13	RathnaPriya.M	Madurai Railway	National Engineering College,Kovilpatti	09.06.2014- 14.06.2014

Memorable Moments



ALTANZIA' 14 Inaugural Function

Snap during Paper Presentation session in ALTANZIA' 14



Snap during Valedictory Function – ALTANZIA'14

EEE NEWSLETTER

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