VOLUME 2, ISSUE 1

DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING
SARANATHAN COLLEGE OF ENGINEERING

iCERYX

The Voice of ICE

CHANGING COLOUR OF CHAMELEON

INTERNSHIP AT NATIONAL INSTRUMENTS, BANGALORE

INTERNSHIP AT FLUX-GEN, BANGALORE

MAXIMUM NUMBER OF CERTIFICATION EXAMS

FROM THE EDITORIAL BOARD

iCERYX is stepping into its second year of publication with the ever enduring support given by the depart ment. The editorial board feels elated that iCERYX has always been a media to patronise the achievements of the department and will continue to be the same in the future.

Every good thing that happens to us is supposed to be shared with the world around us because we as social beings should share the drops of joy that we experience. This e-magazine has always paved way for that and is marching ahead.

Friends, we were enthralled by the enormous number of articles that you fkeep us fledged with. Your constant co-operation is always our energy tonic. So do hold up this pride and keep us startled always. Sky is the limit and we ICEians always go beyond the horizons.

PR TEAM

Shuprajhaa. T., Final year,

Kanchana. A.,Final year,

Nivethidha. R., Final year

Rubamathy. J., Pre-Final year,

Puliyuran. S., Pre-Fiinal year,

Syed Ahamed raza Saqqaf. M, Second year,

Prathiba. S., Second year

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NATIONAL INSTRUMENTS

National Instruments Corporation, or NI, is an American company with international operation. Headquartered in Austin, Texas, it is a producer of automated test equipment and virtual instrumentation software. Common applications include data acquisition,instrument control and machine vision.
In 2012, the company sold products to more than 35,000 companies with revenues of $1.12 billion USD.
In the early 1970s, James Truchard, Jeff Kodosky, and Bill Nowlin, were working at the University of Texas at Austin Applied Research Laboratories. As part of a project conducting research for the U.S. Navy, the men were using early computer technology to collect and analyze data With a $10,000 loan from Interfirst Bank, the group bought a PDP-11/04 minicomputer and, for their first project, designed and built aGPIB interface for it.[5] Their first sale was the result of a cold call to Kelly Air Force Base in San Antonio, Texas.[4] Because the trio were still employed by the University of Texas, at the end of the year moved the company to a larger office, renting 5,000 square feet (500 m2) of office space. To assist in generating revenue, the company undertook numerous special projects, working on a fuel-pump credit-card system and a waveform generator for I.S. Navy sonar acoustic testing. By 1981, the company reached the $1 million sales mark, leading them to move to a 10,000-square-foot (1,000 m2) office in 1982.
In 1983 National Instruments reached an organizational milestone, developing their first GPIB board to connect instruments to IBM PCs. With the arrival of the Macintosh computer, The company had 100 employees by 1986.[6][6] As part of the company's decision to begin direct sales of its products, NI opened its first international branch, in Tokyo,

INTERNSHIP AT NATIONAL INSTRUMENTS - FINAL YEAR STUDENT PREETHI

My NIinternship programstarted on 3rd June, 2015 and is expected to end by 31st July, 2015.
My mentor during this program is Visweswaran Jagadeesan and my project guide is Ravitheja.
I received a stipend of INR 16,000/-per month for the duration of my internship.
Company detail:
ANI Systems (India) Private Limited
81/1 & 82/1,
Salarpuria Softzone,
B Wing, 5th Floor,
A Block,
Bellandur, Varthur Hobli
Bangalore -560 103 .
WORKING EXPERIENCE:

They assigned the projectat the beginning of my internship,my project title is to create a HANDS ON MANUAL TO WORK WITH NI MYDAQ in real-time with 10experiments which contains different fields.They had given all the components we can do n number of real time activity.we used to do all the experiments

INTERNSHIP AT FLUXGEN - FINAL YEAR STUDENT

R.RANJANI

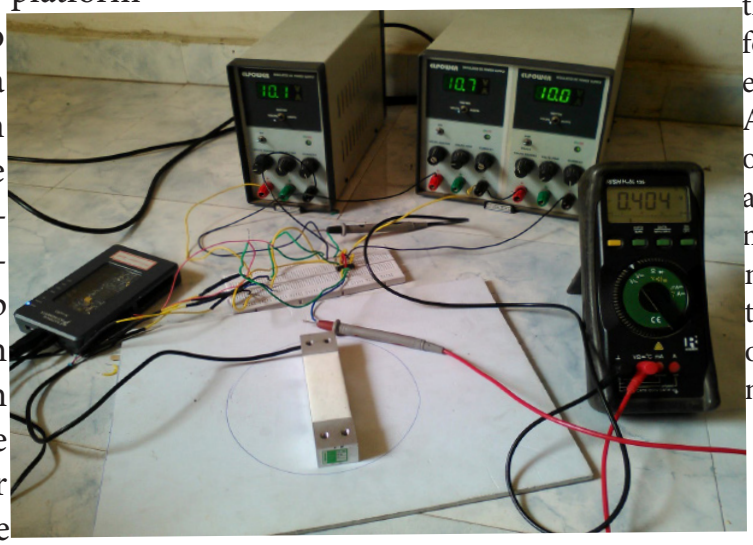
I feel very happy to share my experience that I had in FLUXGEN ENGINEERING TECHNOLOGIES, BANGALORE during my internship programme. FLUXGEN ENGINEERING TECHNOLOGIES is a company which primarily works on renewable energy resources.

INTERNSHIP is a platform for all students who aspire to work in a core company. In fact it is a bridge between your academics and industries. My internship was also one such programme which made me to realize that how the smaller concepts are made bigger and how the bigger ones are made smaller.

The selection process for the internship had two rounds. They conducted an online test as the first round of the selection process. The online test consisted of questions which were purely based on simple basics. Telephonic interview was conducted to the students who cleared their first round. The telephonic interview obviously tested the basics, programming skills in labview and application of the basics. Fortunately, I cleared the second round of the selec-

. I was asked to work on the project during my internship days and to continue the same as my final year project. Mr.RAMACHANDRAN , assistant professor, department of ICE and Mr.GANESH SHANKAR, the managing director at fluxgen engineering technologies guided me a lot.

Our department alumni VASANTHA, currently working for FLUXGEN helped me in lot of



aspects. The entire team of FLUXGEN supported me and guided me throughout my internship.With their help and support, I was able to finish a part of my project work within the stipulated time. I have planned to continue the project as my final year project.

THINGS I LEARNT FROM MY INTERNSHIP:

During this internship programme I learnt a lot of things which I like to share with you.

(i) IMPLEMENTATION- I learnt how to implement the theory what we study

(ii) EXPOSURE-I gained a lot of exposure not only from my project but also from the the other projects that FLUXGEN is currently working on.

I recommend all ICE department students to try for these kind internships. If selected, our department will definitely provide you a platform to exhibit your knowledge and talents. EXPERIENCE teaches you more efficiently than any anybody else. I would like to thank Mr. GANESH SHANKAR, the managing director of FLUXGEN ENGINEERING TECHNOLOGIES and the entire FLUXGEN TEAM for providing me such a golden opportunity.

Also my sincere thanks to our Head of the Department, all the staff members and all my friends who supported me for getting into the internship and making it as one of the remarkable moments of my life.

FluxGen

FluxGen Engineering Technologies

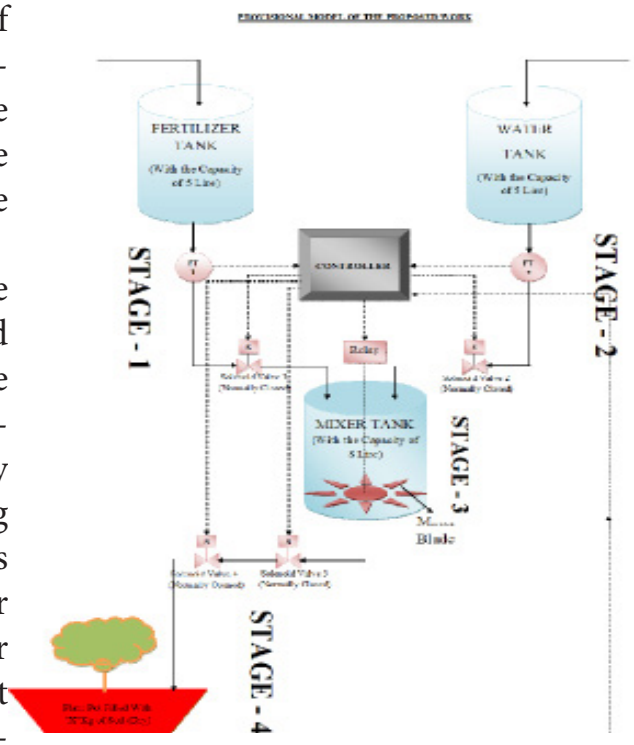
INTERNSHIP AT FLUXGEN - PROF. RAMACHANDRAN

This is Ramachandran from the department of ICE. I got internship with fluxgen technology, Bangalore and worked with their project that automated fertilizer irrigation for potted plant. I worked on this project for ten days and also shared my ideas with them. The final outcome of my thought about the project has been given as a proposal. After I got an acceptance from fluxgen's managing director, the proposed idea was given to our final year student Ms. Ranjani (ICE).

PROJECT TITLE: AUTOMATIC IRRICATION PROCESS BY CONTROL THE SOIL MOISTURE

ABSTRACT

In agriculture, the irrigation process is the most essential one to make plants grow well. To get the growth in an effective way the fuel feed to the plant and the feed flow should be as per requirement and this depends upon the soil's moisture. But essentially the feed flow cannot be achieved consistently with the moisture content of the soil. Normally, the feed to the plant is retented by soil. According to the atmospheric temperature and moisture the soil will preserve the water. Humans cannot predict when the temperature will increase and when it will fall. Hence, to make a proper irrigation, it is mandatory to concentrate on plant environment, feed flow and also the feed should be given to the plant continuously based on the soil moisture. Practically it is not so easy since all the time human cannot be concentrated on irrigation. Hence, to avoid such issues the irrigation process is being made automated with the help of process control. Here, the problem is handled by sensing the percentage of soil moisture. With respect to the percentage of soil moisture the fuel will be fed to the plant.



Here, the fuel feed will have to be obtained by mixing the plant's fertiliser with water at correct proportion. The mixed fuel will be fed to the plant when the soil's moisture percent-

In the proposed work, the project is categorized in to four stage

1. STAGE -1: To Control the flow rate of Fertiliser by Flow Sensor.
2. STAGE -2: To Control the flow rate of Water by Flow Sensor.
3. STAGE -3: To Control the Speed of Mixer blade.
4. STAGE -4: To Design the Signal Conditioning Unit (SCU) for Measuring Weight from Plant Pot Weight & Control the Outflow of Feed To Plant By Open and Close of Normally Open (NC) & Normally Closed (NO).

DEPARTMENT ACTIVITIES

ROBOTICS WORKSHOP FOR THIRD YEAR

PR TEAM

- Two days training on "robotics" was conducted by for thirty students of third year under the guidance of Mr. Gopalakrishnan, Assistant professor, Department of ICE, during 20-05-2015 and 21-05-2015.
- This was a basic way of approach to the world of robotics and students were give hands on experience to various final year robotic projects
-

On the very first day of training the students learnt about general aspects of robot, their types and components. They were taught how small and simple robots could be used for simple applications.

- The afternoon session of the first day was indulged in the discussion on "Introduction to Firebird V "robot, and they
- did some practical experiments related to Firebird V robot. That session also included discussion on types of actuators, sensors and communication devices.
- The students were taught to interface the robot with the software named "AVR STUDIO 4". These simple experiments gave the students a new exposure in working with robotic kits.
- These two days of training made the students enter into the field of robotics. This sowed the seeds of encouragement in the students' minds to further enhance and come up with new innovative robotic projects and ideas.

Report

I am Sriram Sampath from the department of the Instrumentation and Control Engineering, Saranathan College, Trichy. I attended a mock test and based on the performance in that test I was offered an Internshipoffer from "INNOVATIVE INVADERS TECHNOLOGIES", Coimbatore. I reached the company on June 3rd, 2015 at 9.00 am. I had a personal interview which was conducted by my mentor to witness my knowledge in different streams and was made to work in a project related to the field of process control.

About the company, it is a franchisee of NATIONAL INSTRUMENTS. I had an exposure on NI student kits such as MyRIO, MyDAQ, CDAQ, and CRIO. I learnt how to implement my theoretical concept into LabViewsimulation, which took me 5 days to understand the maximum utilisation of the project.

There were other internee's along with me and each of us has allotted separate projects according to our field of interest. I was assigned with a project titled as "Controlling of various parameters with coupled two tank system using open loop, closed loop, and ON-OFF control ". I understood the applications of the basic concepts in the physical world. Developing the project was a challenging task and I underwent practising experiments using MyRIO, which was the best moment in the internship.

Also I had chance to work

CLAD EXAM TRAINING

PR TEAM

- The department of Instrumentation and control Engineering organized a training program for the preparation of clad exams on 19-06-2015 and 20-06-2015
Mr. Yuvraj person from National Instruments, Bangalore was the trainer. Totally 39 final years students of ICE dept attended the training program sessions.
- On the 1st day candidates were given a detailed revision about the purpose of each icon in labVIEW program covering almost all the function palate icons. Exercises were given to the students on the same to enrich them more practically.
- Students were also given slip tests on clad model question paper for a healthy preparation. Answers were discussed in a detailed manner so as to make conceptual understanding to the students.
- This two days training was mainly focused on the CLAD syllabus, to brush up the CORE 1 and CORE 2 topics. Tricks and tips were given to the students on how to clear the exam. Owing to the high value for this certification, NI imposes 2 year validity to this certificate to ensure that their Certified Developers stay in par with the ever-advancing field of Instrumentation.
- Overall the training program was very useful to clear and hold the value added clad certificate.

E-YANTRA WORK-SHOP FOR FINAL YEAR STUDENTS

- e-yantra robotics workshop was organized by the dept of ICE on 26 –05-2015 & 27-05-2015 Prof. R. Gopalakrishnan, department of ICE trained the students.
- The workshop started with the basics of robotics covering the topics like robotic structure, need of robotics and its applications. The session went in an interactive manner on discussing the purpose of robotic version and the various forms of robot
- In the afternoon session videos related to various forms of robotic versions were played to make the workshop livelier and students were also exposed to the available robotics resources in the department.
- The second day was a practical class where the students were split up into batches to have hands on experience on robotic kits. Students were trained about the pin connections of the robotic kit, on how to upload the program into the kit. Also laws and architecture of robotics were covered in the morning session.
- In the last half of the workshop, exercises were given to the students to enrich their technical knowledge with the robotic kits. Certificates were issued by e-yantra, IIT Bombay to all the participants of the workshop.
- On the whole this workshop kindled the young minds to become successful participants of 'E-yantra 'robotics project expo in the near future.

CERTIFICATION EXAMS

PR TEAM

- The department of Instrumentation and Control Engineering rendered their efforts in organizing a spoken tutorial project that specializes on C-programming. A workshop regarding to it was conducted on 22nd January 2015.
- The students of IV year ICE attended the certification exam on 27th May 2015. Out of 40 students, 25 had cleared this test successfully.
- The online exam comprised of multiple choice questions which dealt with various topics on C-programming.
- It framed about tokens, functions, scope of variables, if and nested if statements, function call, file handling, loops, structures, pointers and lots more.
- The staff co-ordinators for this program were Prof. Abirami and Prof. Gopalakrishnan.
- The students experienced the freedom of constructive and innovative learning which encouraged them to face the examination with all the technical support of the department.
- This supported the students to be more adaptive towards the deployment of open source simulation packages which is equivalent to proprietary software, funded by MHRD, based at the Indian Institute of Technology Bombay (IITB).
- On the whole the department encouraged the students towards their quality improvement which paves them to get wide oppurtunities.

MAXIMUM NUMBER OF CERTIFICTION EXAMS

The depart-
ment takes great pride in higlighting that ICE is the depatt-ment to give the maximum
number of certification courses to its students.

The spoken tutorial related course and its corresponding online test were conducted to students of ICE. The details of students who have successfully cleared the test are given below batch wise::

FINAL YEAR

Scilab - 25.09.2014 - 61 out of 64 final year ICE students successfully cleared

Java - 10.02.15 27 - out of 53 final year students have cleared

C - 24.02.15 46 out of 58 final students have cleared

LaTeX - 06.03.15 23 out of 55 final year students have cleared

Cpp 06.04.15 & 07.04.15 51 out of 64 students have cleared

THIRD YEAR

Scilab - 25.10.2014 18 out of 60 Third year ICE students successfully cleared.

Scilab - 12.02.15 19 out of 43 third year ICE students have cleared.

LaTeX - 18.03.15 36 out of 61 third year ICE students have cleared.

LaTeX - 02.04.15 10 out of 26 third year ICE students have cleared.

C - 27.05.15 25 out of 40 third year ICE students have cleared

SECOND YEAR

Scilab - 25.10.2014 24 out of 50 second year ICE students successfully cleared.

Scilab - 11.02.15 6 out of 19 second year students have cleared

LaTeX - 17.03.15 10 out of 36 second year students have cleared

MEASUREMENT AND ITS SIGNIFICANCE

Prof. SIVAKUMAR

The Measurement of a given quantity is essentially an act or the result of comparison between the quantity and a predefined standard. Since two quantities are compared the result is expressed in numerical values

Why it is Important to Measure?

As article 2 of European Directive 374 of 25 July 1985 states that 'also electricity' is a 'product', equating it with any other type of 'movable goods', the first, immediate answer is: to be able to market the product electricity. There is a clear need in today's market to contain and reduce costs and ensure continuity of service. It has thus become vital to thoroughly familiarize oneself with the operation of an electric plant in order to be able to optimize: Consumption, Load Characteristics, Harmonic Disturbances, Voltage disturbances, etc, i.e. all the elements that contribute to increase efficiency, improving competetitivity, and, an important factor today, reducing harmful emissions in the environment.

Start From the Need: What to Measure?

There are different product families on the market: Instruments that measure a single Electric parameter (voltage, current, frequency, phase angle cosφ), generally used in single phase systems, as instrumentation on the machine, and instruments that enable all the electric parameters to be measured and displayed, both for the single phase and in the three-phase system. If not only electric parameters need to be monitored but also energy consumption needs to be checked, measuring instruments that also include an active and reactive energy count have to be selected.

Selecting the Measuring System

The instrument should be selected according to the type of distribution system.

In a single-phase system, analogue and digital instruments are selected for measuring Voltage, Current, Frequency and the Power Factor.

In a three-phase system instruments can be installed that measure the single electric parameter, one per phase, or a voltmeter and and current can be installed together with the voltage and current switches, which enable the measurements to be displayed in sequence, phase by phase. Choosing an analogue instrument ensure good reading stability, due to the mechanical inertia of the needle and the fact that the reader immediately knows whether the instrument is working normally or whether the reading is off-scale. The analogue instrument indicates the point on the measuring scale in which it finds itself, showing the upper and lower limits. In digital instruments this indication is not possible as the only reference is the reading of the value on the display, for example, of the current. Some measuring instruments have bar indicators that show the current level as a percentage of the set full scale.

Sizing the System

Sizing the measuring system starts with knowing the main parameters of the plant; in particular, starting from the characteristics of the protection switch, the type of distribution system, rated current, rated voltage and bar type can be known.

After the type of instrument has been defined that is most suitable for requirements, if the measurement is conducted through indirect insertion, the accessories of the measuring system such as current and voltage transformers must be chosen carefully.

Wiring and Cabling Diagrams

Connecting analogue instruments is very simple; it in fact suffices to connect the phase and neutral cables to the instrument's terminal. Two cables for the auxiliary supply must always be connected for digital instruments.

Multifunction instruments can be used in different distribu-

If not only electric parameters need to be monitored but also energy consumption needs to be checked, measuring instruments that also include an active and reactive energy count have to be selected.

Selecting the Measuring System

The instrument should be selected according to the type of distribution system. In a single-phase system, analogue and digital instruments are selected for measuring Voltage, Current, Frequency and the Power Factor.

In a three-phase system instruments can be installed that measure the single electric parameter, one per phase, or a voltmeter and an current can be installed together with the voltage and current switches, which enable the measurements to be displayed in sequence, phase by phase. Choosing an analogue instrument ensure good reading stability, due to the mechanical inertia of the needle and the fact that the reader immediately knows whether the instrument is working normally or whether the reading is off-scale. The analogue instrument indicates the point on the measuring scale in which it finds itself, showing the upper and lower limits.

In digital instruments this indication is not possible as the only reference is the reading of the value on the display, for example, of the current. Some measuring instruments have bar indicators that show the current level as a percentage of the set full scale. tion systems. In three-phase systems with distributed neutral three current transformers are required. In three-phase systems without distributed neutral in which the loads are balanced and symmetrical, two current transformers rather than three can be used; the instrument will calculate by difference the third phase that is not measured directly, considering it to be the same as the other two.

Protecting the instrument and Earthing

Fuses must always be fitted to the supply cables of digital instruments and to the voltmeter measuring inputs in order to ensure proper protection of instrument.

Earthing the secondaries of the CTs ensures an earth connection if the transformer develops a fault and does not affect the measurement. If there is a great potential difference between neutral and earth, this could affect the measurement negatively, in the case of instruments with measuring inputs that are not galvanically insulated. Setting digital instruments

Before digital instruments start operating they must be set with the parameters of the measuring system and the communication parameters. The main measuring parameters are the transformation ratios of the CTs and of the VTs, which are defined as the mathematical ratio between the nominal value and the value of the secondary.

INSTRUMENTATION

Troubleshooting during final testing

The main problems that arise during the test phase may be due to incorrect installation of the instruments and the accessories. Always check that the wiring complies with the instruction manual.

MATH PUZZLES

If it were two hours later, it would be half as long until midnight as it would be if it were an hour later.
What time is it now?

Find the mistake in these mathematical equations.

$x = 2$
$x(x-1) = 2(x-1)$
$x2-x = 2x-2$
$x2-2x = x-2$
$x(x-2) = x-2$
$x = 1$

ELECTRONIC ASPIRIN
SHUPRAJHAA. T,
FINAL YEAR

For people who suffer from migraines, cluster headaches, and other causes of chronic, excruciating head or facial pain, the "take two aspirins and call me in the morning" method is useless. Doctors have long associated the most severe, chronic forms of headache with the sphenopalatine ganglion (SPG), a facial nerve bundle, but haven't yet found a treatment that works on the SPG long-term. A technology under clinical investigation at Autonomic Technologies, Inc., (Redwood City, CA) is a patient-powered tool for blocking SPG signals at the first sign of a headache. The system involves the permanent implant of a small nerve stimulating device in the upper gum on the side of the head normally affected by headache. The lead tip of the implant connects with the SPG bundle, and when a patient senses the onset of a headache, he or she places a handheld remote controller on the cheek nearest the implant. The resulting signals stimulate the SPG nerves and block the pain-causing neurotransmitters.

BABY GIRL - POEM
HEMAPRIYA,
SECOND YEAR

God put a seed on a little girl's worm

This makes the girl as a mom

On june a baby girl blossom with a dimple

Wailing and wailing she comes to the world

Black eyes with, small fingers;

Without teeth, she smiles…smiles…

The Sun and moon were in immense feel

God gifted a beautiful star to the sun and moon, she is

Born with goodness; born with divinity

Born with potential; born with radiant love

Born with greatness; born with dream

Now the baby girl becomes a lovely princess, going

To starts her first birthday with smil

ing and smiling, she starts her journey

IMPORTANCE OF GATE EXAM

KANCHANA .A,
FINAL YEAR

Graduate Aptitude Test in Engineering (GATE) is an all-India examination being conducted and administered by the Indian Institute of Science and seven Indian Institutes of Technology. It is conducted by the National Coordination Board GATE, Department of Higher Education, Ministry of Human Resource Development, Government of India.

In the present competitive scenario, where there is mushrooming of universities and engineering colleges, the only yardstick to measure and test the caliber of engineering students is the GATE. There is a misconception among students that GATE exam is meant for ME./M.Tech which finally leads to a teaching career only.

The GATE advantage
In this context, the following points are worth noting about this examination: Many public sector undertakings such as BHEL, Indian Oil Corporation, NTPC, Bhabha Atomic Research Centre (there are PSUs totalling 217 in number) are using the GATE score for selecting candidates for their organisations. Students who qualify in GATE are entitled to a stipend of Rs 8,000 per month during their M.Tech course. Better remuneration is being offered for students of M.Tech/M.E as compared to those pursuing B.Tech /B.E. A good GATE rank assures a good job After joining M.Tech. at IITs and IISc, one can look at a salary package ranging from Rs 7 lakh to 30 lakh per annum, depending upon

Clearing GATE is also an eligibility clause for the award of Junior Research Fellowship in CSIR Laboratories. M.Tech. degree is mandatory for those wishing to apply for research positions in R&D centres. The GATE score is valid for two years and those who qualify this test are eligible for doing Master's degree at NUS, (National University of Singapore), Singapore. A GATE score definitely gives one an edge when it comes to joining reputed companies as well as off-campus recruitments. For those who couldn't pursue their BTech in IIT, it provides another opportunity to study in the prestigious IITs.

Raising numbers
It is one of the toughest examinations in our country where competition is very high and requires focused study in a planned manner. Engineering subjects cover 70 per cent weightage while General aptitude and Engineering Mathematics cover 15 per cent respectively. The three-hour GATE paper has a total of 65 questions, out of which 30 questions are of one mark and 35 questions are of two marks. The two-mark questions further include two pairs of common data questions and two pairs of linked answer questions. To secure a high a percentile one should remember that a candidate is being judged relatively and not absolutely. The overall rank achieved depends upon the preparation level of your competitors.

How to tackle the paper
Start the paper with one-mark question (25 in number). Since these are easy to attempt, they will help in building confidence. Proceed then to two-marks questions from Common Data and Linked Answer Questions. Attempt this part with caution. These add up to eight more questions in addition to the 25 attempted above. Then go to General Aptitude section of 10 questions. All these will add upto 43 questions attempted. All these should be done in a timeframe of 100-110 minutes. Now we are left with 22 questions in the technical portion and we can allot 50 minutes to this comfortably. At the end, you must have 15-20 minutes for a quick revision of the answer sheet to ensure all is in order. While attempting the paper, leave questions which you are not sure of. The most deciding factor is negative marking. Avoid making any guesses and try to eliminate choices by analysis and calculations.

CHANGING COLOUR OF CHAMELEON
RUBAMATHY, PRE-FINAL YEAR

The way that chameleons actually do this is really molecular – they're molecular masterminds, really. If you look at the skin of a chameleon, you find that they have several layers of specialised cells called chromatophores and these are cells that can change colour. On the outer surface of the chameleon, the skin is transparent and just below that is the first layer of these cells, and they contain various pigments. These are xanthophores, containing particular specialised pigments that have a yellow colour. Beneath that are pigment cells which are called erythrophores which have a red colour in them. Beneath that, another layer of cells called iridiphores have a blue coloured pigment called guanine, which is actually also used in making DNA. And underneath that is another layer of cells called melanophores which have a brown pigment – melanin – in them

Now, how does the chameleon change colour? Well those chromatophores are wired up to the nervous system. They are also sensitive to chemicals that are washing around in the blood stream of the chameleon. What happens is that the colours are locked away in tiny vesicles, little sacs inside the cells that keep them in one place, so the cells don't look coloured. But when a signal comes in from the nervous system or from the blood stream, the granules or vesicles can discharge, allowing the colour to spread out across the cell, and this alters the colour of the cell. It's rather like giving the cell a coat ofpaint. By varying the relative amount of activity of the different chromatophores in different layers of the skin, it's like mixing different paints together. So if you mix red and yellow, you get orange for example, and this is how chameleons do this. They mix different contributions of these chromatophores. It's a bit like on your television screen. When you mix different colours together on the screen to get the colour that the eye ultimately perceives and so, that's how the chameleon changes colour, and usually does so to convey mood.

So a calm chameleon is a pale greeny colour. When it gets angry, it might go bright yellow, and when it wants to mate, it basically turns on every possible colour it can which shows that it's in the mood. This is not unique to chameleons. Other animals also have these chromatophores. Cuttlefish are another very elegant example of how this works. So it's not so much to do with camouflage. It's more to do with communication.

TRICKY IDIOMS ABOUT MONEY
SHUPRAJHAA. T, FINAL YEAR

1. "Balance the books" – determine that accounts are in balance, bring the two sides into equilibrium, settle an account by paying what is due

– The accountant says he can't balance the books till our last check clears.

2. "Bring home the bacon" – earn a salary, make money for your family

– When our parents died in an accident, and my sister and I remained alone, I had to leave college and bring home the bacon.

3. "Go Dutch" – share the cost of something

– When I wanted to settle the bill, she insisted on going Dutch and pay for her meal.

4. "Gravy train" – a source of easy money, a job that pays a lot with little work

– My brother took up a job in a beach restaurant and hoped to get on board the gravy train, but in fact he had to work more than in a factory.

5. "Nest egg" – savings, money kept in reserve

– Don't worry about the job you lost. We have a little nest egg to live on until you find another.

PNEUMATIC LIQUID LEVEL CONTROL SERVES VARIED OILFIELD EQUIPMENT

SYED AHAMED RAZA SHAQQAF, SECOND YEAR

Pneumatics (Greek:which means “breath”) is a branch of physics applied to technology that makes use of gas or pressurized air. Pneumatic systems used extensively in industry are commonly powered by compressed air or compressed inert gases Pneumatic systems in fixed installations, such as factories, use compressed air because a sustainable supply can be made by compressing atmospheric air. The air usually has moisture removed, and a small quantity of oil is added at the compressor to prevent corrosion and lubricate mechanical components. This oil and gas control equipment manufacturer launches its first pneumatic level switch for oil and gas separator, water knockout, gas scrubber, or accumulator liquid level control It combines a magnet and check valve system with a diaphragm pilot mechanism to increase flow rate and provide easy maintenance with lower downtime. The new level switches are designed for use as high or low-level controls. They operate any diaphragm motor valve that requires no more than 30 psig diaphragm pressure. Sealless switch design keeps process fluid completely isolated from pneumatics to help prevent the vessel from leaking gas through a worn O-ring. This feature also allows for quicker actuation of larger control valves through a large orifice snap pilot. For easy maintenance, the pneumatic switch has a set screw that allows quick pivot rod and float assembly removal and cleaning.

WISDOM QUOTES

NIVETHIDHA. R, FINAL YEAR

1. “Each of us must confront our own fears, must come face to face with them. How we handle our fears will determine where we go with the rest of our lives. To experience adventure or to be limited by the fear of it.” --Judy Blume
2. “Inaction breeds doubt and fear. Action breeds confidence and courage. If you want to conquer fear, do not sit home and think about it. Go out and get busy.” --Dale Carnegie
3. “You gain strength, courage and confidence by every experience in which you really stop to look fear in the face. You are able to say to yourself, ‘I have lived through this horror. I can take the next thing that comes along.’ You must do the thing you think you cannot do.” --Eleanor Roosevelt
4. “Fear is the path to the Dark Side. Fear leads to anger, anger leads to hate, hate leads to suffering.” - - Yoda
5. “The brave man is not he who does not feel afraid, but he who conquers that fear --Nelson Mandela
6. “Nothing in life is to be feared. It is only to be understood.’ --Marie Curie
7. “Decidethatyouwantitmorethanyouareafraidofit.” --Bill Cosby
8. “The key to change... is to let go of fear.” --Roseanne Cash
9. “He who is not everyday conquering some fear has not learned the secret of life.” --Ralph Waldo Emerson
10. “We should all start to live before we get too old. Fear is stupid. So are regrets.” --Marilyn Monroe

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