



**Priyadarshini Engineering College,  
Vaniyambadi-635751.**

**Department of Electrical &  
Electronics Engineering**

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**EEE PEP**

**JUNE 2013**

## ABOUT THE INSTITUTE

*Priyadarshini Engineering College, the flagship of Jai Barath Charitable Trust, was established in 1995 at Vaniyambadi in Vellore District of Tamil Nadu. The college has been approved by All India Council for Technical Education, New Delhi & affiliated to Anna University, Chennai. Priyadarshini Engineering College situated in the rural area of Vaniyambadi, Vellore District is committed to the vision of developing itself into a multi-campus, interdisciplinary Institution of Excellence through symbiotic efforts and innovative practices of management and faculty to provide the student with an ambient academic environment, ideal for the pursuit of knowledge and development carrier.*

## VISION OF THE INSTITUTE

*To inculcate in the young rural minds the aptitude to compete with the quality technocrats*

## MISSION OF THE INSTITUTE

- *To instill technical skills to compete in the sustainable world*
- *To impart holistic value based technical education*
- *To intensify research and development (r & d) activities in technological development*
- *To imbibe core values of love for motherland performance of duty, compassion, tolerance, honesty and integrity*

## MOTTO

*Perseverance, Endurance, Commitment*

**“கற்றலும், கற்றவை கேட்டலும், கேட்டதன்கண்”**

## PRINCIPAL MESSAGE



*I would like to welcome you back for the start of our new work ahead in the year. It is our mission to empower the learners to grow academically socially and emotionally by developing and supporting independent thinker and problem solvers, who strive for excellence in the class room and in the society throughout the year. I welcome and encourage your involvement in participation and input in making our college the best educational institution imparting technical education to all our students. Let us develop our college strategic plan with set targets and time frames to evaluate as to where we have succeeded or trailed and what to do improve, strengthen our teaching skill and introduce new methods in studies, in the conduct of examinations and provide an opportunity to a student to assess our lectures every semester. Also let us allow both teaching and non-teaching staffs to assess themselves in most in the most objective manner possible in order to enable the management to take realistic judgement whenever they approach for readressal of any grievances. Through this initiation we hope to attend the world class status in society and education system.*

*A desire can change nothing*

*A decision can change something*

*A determination can change everything*

*Life throws a set of challenges in everybody. An engineer has to face challenge in his/her domain areas, with strong innovative ideas, and with scientific knowledge. One's commitment to become an engineer, a devotion shown to studies in the college will bear fruits and will be palatial throughout one's life.*

## VICE PRINCIPAL MESSAGE



*It is no secret that community service is an important aspect of any student's overall performance. A significant community service is excellent not just for the personal growth and development of the sensibilities of a young student but also providing material for interviews down the line. There are many ways that one can help the less fortunate and get involved in the process of rebuilding. This can begin at home with one getting involved helping domestic staff, security drivers and other residents in the neighbourhood who are facing difficulties. History has always regarded the pattern of rebuilding people after the cycle of destruction. Japan is an example, having survived both the effects of war and National disaster. For those inclined to believe in the power of prayer, one's daily remembrance can include those who are suffering. The prayer goes beyond our daily needs and wants and in silence; one can really sense the bond that connects all humanity, beyond the barriers of religion caste and our personal ideas of family. The universal language of grief, brings about a deep connection that really reminds us of "Being Human".*

## HOD MESSAGE

*It is an occasion of great and satisfaction for the department of EEE ,EEE PEB to bring out the third issue of the yearly of the technical magazine ,it gives me immense pleasure to note that the response to the magazine has been overwhelming. The wide spectrum of articles gives us a sense of pride that our students and faculties possess creative potential and original thinking in ample measures. Each article is entertaining interesting and absorbing , I applaud the contributors for the stimulated thoughts and varied hues in articles contributed by them.*



### **VISION OF THE DEPARTMENT:**

*To produce eminent electrical engineers specifically from the rural background.*

### **MISSION OF THE DEPARTMENT**

- *Infuse moral ethics and good virtues in the students.*
- *Providing good technical knowledge for innovative research and development*
- *Making the students to excel in technical and extracurricular activities.*

ART WORK



SANGEETHA.S  
B.E/EEE - II<sup>ND</sup> YEAR

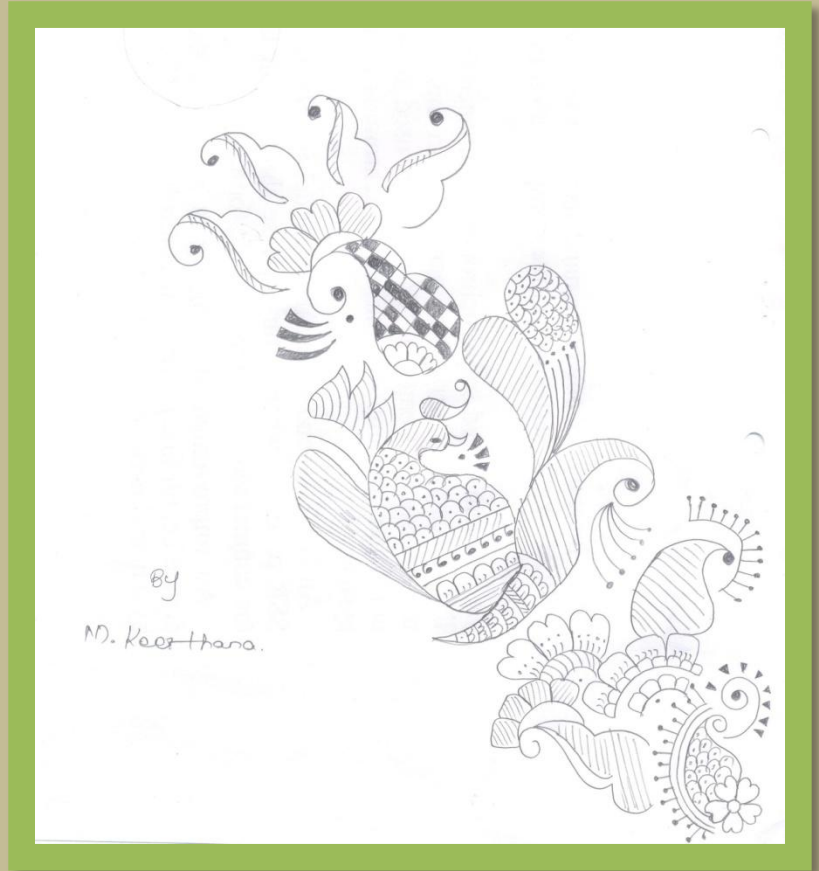


A.RAJESH  
B.E/EEE - IV<sup>TH</sup> YEAR

**RANGOLI**

**M.KEERTHANA**

**B.E /EEE – I<sup>ST</sup> YEAR**



**THENMOZHLE**

**B.E /EEE – III<sup>RD</sup> YEAR**

## KNOW YOUR INSTRUMENTS

GOPI PRAKASH P  
IV YEAR / EEE

- **Calorimeter** measures the quantity of heat.
- **Electroscope** is an instrument for detecting the presence of electric charge.
- **Hydroscope** is an optical instrument used for seeing objects under water.
- **Hydrophone** is used for measuring the sound under water.
- **Lactometer** is an instrument used for measuring the relative density of milk.
- **Manometer** is used to measure the pressure of gases.
- **Magnetometer** is an instrument for carrying sound to long distance.
- **Megaphone** carries sound to long distance.
- **Photometer** compares the luminous intensity of the sources to light.
- **Radio Micrometer** is an instrument used for measuring heat radiations.
- **Rain Gauge** measures rainfall.
- **Seismometer** is used for recording the intensity and origin of earth quake shocks.
- **Thermometer** is an instrument used to measure temperature.
- **Viscometer** measures the viscosity of a fluid.

CRAFT WORK

HAREETHA SHREE R  
IV YEAR / EEE





# PENCIL DRAWING

RAMU D  
II YEAR/EEE



## JOB TIPS

### Job hunting tips for freshers:

Being young doesn't mean you are given a free ticket to act casually during job interviews. You are already in the professional world and although you are young, you can show yourself as respectable as the president of the company by being professional.

### Clean your profile:

Even before we reach college we are already members of different social networking sites. We often post pictures in these websites so that we can share with our friends our adventures and even the crazy things that we have done. Before you even apply for a job, check your profile and delete the pictures that could hinder you from being employed. Also advise your friends to do the same so that you can completely clean your online profile

### Resume for every company:

Resumes used to be simple sources of data of the applicant. But that situation is long gone and resumes are used as a tool for increasing your chances of getting hired. Know the company philosophy and the skills they require and customize your resume based on that information. By customizing your resume to each company you are planning to work with, you are highlighting the skills and personalities the company are looking for from a candidate.

### Team Communication:

A healthy team communication can help eliminate many misunderstandings and frustrations which develop within the team. It is thus essential to learn on improving team communications to address misunderstanding and to improve team efficiency.

### Feedback mechanism:

Feedback is an important part of a team communication. Make sure that you take the opinions and views of the team member involved. A proper feedback mechanism will ensure that your team responds as required to your communication and that everyone had received the same message

### Do's and don'ts for freshers:

Life for any fresher is challenging. You may visit multiple job boards (Naukri, Monster and TimesJobs) with dedicated pages for freshers or websites of special interest to freshers (freshersworld, walkinjobstoday). You must also have a proper e-mail ID so that you can send soft copies of your resume via e-mail to companies. Sometimes companies --especially in the IT industry -- have their own format for filling information on their websites. They ask for the same information in your resume (contact details, school and college, extra-curricular activities, etc.) If you have any of your friends or relatives working for IT companies, ask them to refer your resume. If there are few vacancies, it will usually be filled through employee referral only. Check your mailbox at least once every day. IT companies do not allow people to submit resumes on hand. You have to hunt your first job online only.

### DRESSING FOR SUCCESS:

If your work environment is very casual, then you can wear semi formals like Khaki, gabardine or cotton pants with light colored formal /semi-formal shirts with a cotton/linen blazer. In creative fields pairing a blazer with a shirt and classic jeans is also allowed. Accessories (Both men and Women) Wear nice, clean/polished shoes that are easy to walk in. Women can wear sandals or dark shoes (pumps) with kitten heels depending on the clothes they are wearing. Avoid

anything that bling or metallic. Formal leather shoes in dark colors (with dark colored socks) are the best bet for men. Women can accessorize with some simple jewelry like Small hoops/studs will look nice as well as a small pendant necklace. Avoid stacking up jewelry. Men should stick to wearing a good watch. A Portfolio or briefcase will complete your professional attire.

**MOHD.WASIFUR RAHMAN.V**  
**III YEAR / EEE**

## WILLIAM GILBERT

R.Bhararth kumar

III YEAR / EEE

NATIONALITY: United Kingdom      DIED ON:  
30 November 1603

William Gilbert, also known as 'Gilberd', was a famous researcher in magnetism. He was famous during the time of Queen Elizabeth I and is best known for his publication, 'De Magnete'. Credited as one of the originators of the term of electricity, William Gilbert is also known as the father of electricity, magnetism and electrical engineering. He travelled extensively and wrote many publications such as 'Magnetisque Corporibus' and 'ET de Magno Magnete Tellure' during his lifetime. Apart from being a scientist, Gilbert led a parallel career as an astronomer. He studied the moon's surface without a telescope and concluded that the craters were in fact land, and the white patches on the moon's surface were water bodies. One of his other significant contributions was when he pointed out that the motion of the skies occurred due to the rotation of the earth. One of the first people to try to map the markings of the moon's surface, Gilbert was a celebrated astronomer and scientist. His theories on magnetism and electricity had also been the subject of controversy for many of his successors.

### CHILDHOOD & EARLY LIFE

William Gilbert was born to Jerome Gilbert and his wife on May 24, 1544 in Colchester. Most of the information on Gilbert's childhood has vanished into obscurity, but there are a few vague sources of information about his early life. It is believed that Gilbert was educated at St. John's College at Cambridge, where he developed a passion for science. Following high school, Gilbert earned his MD from the University of Cambridge. From here, he worked for a short while as bursar before leaving Cambridge to practice medicine in London. In 1573, he was elected a Fellow of the College of Physicians and was also elected as the President of the College in 1600, just after his career kick-started.

## Career

The accredited father of the science of electricity, William Gilbert, started his career as a physician practicing medicine in London in 1573. His principal work, 'De Magnete', 'Magnetisque Corporibus' and 'Magno Magnete Tellure' were all written and published in 1600, giving a full account of his research on electrical attractions and magnetic bodies. Much of these works were believed the pole star (North Pole) was a large magnetic island, which is why the arrows pointed towards the north. Gilbert was the first to argue correctly that the center of the Earth, in fact, comprised of iron and there were two distinct hemispheres in the Earth, the north and south poles. Some of his other astronomical works focused on the diurnal rotation of celestial objects. Through some of his observations, Gilbert concluded that the stars were also located at remote variable distances rather than fixed spots in an imaginary sphere. William Gilbert also invented the first electrical measuring instrument, the electroscope and a pivoted needle, which he called the 'versorium'. Like other scientists in his day, he also believed that crystal (quartz) was compressed ice and a solid form of water.

## Gilbert & 'Electricus'

The word 'electricity' was first coined by Sir Thomas Browne, which he derived from Gilbert's publication in 1600. The term that Gilbert used was 'electricus' which meant 'like amber'. Gilbert studied that the friction with two or more objects released a substance called 'effluvium', which would cause the attraction to return back to the object in the form of an electric charge.

What Gilbert did not discover was that this theory was applicable to almost all materials.

## Gilbert's Arguments & Later Life

William Gilbert argued that magnetism and electricity were entirely two different theories. He proposed that electricity disappeared with heat and not magnetism, even though this theory was proved wrong later. Following Gilbert's death, a couple of scientists argued that both electric and magnetic fields were indeed the same and had common effects. This led to the birth of electromagnetism'. The theories of Gilbert's magnetism misled many of his successors such as Kepler, while governing planetary motions and the attraction among other celestial objects. Towards the end of his life, Gilbert was appointed as a physician to Queen Elizabeth I, and upon her death, he was appointed as physician to King James I, shortly before his own death .

## Death & Legacy :

William Gilbert died on November 30, 1603, aged 59, in London. Though there have been various discussions on the causes behind his death, it is often said that Gilbert could have possibly died due to the bubonic plague. Known as the father of the science of 'electricity', Gilbert's works became extremely popular following his death and his unfinished publication, 'De Mundo Nostro Sublunari Philosophia Nova' was also published posthumously. 'The Gilbert School' in Colchester was also named after him.

## WILLIAM GILBERT TIMELINE

1544:

Was born on 24 May in Colchester 1569:

Gained his MD

1573:

Elected a Fellow of the College of Physicians

1590:

Made his first attempt to map the surface markings of the Moon

1600:

Published his major works – 'De Magnete', 'Magnetisque Corporibus' and 'Magno Magnete Tellure'.

1603:

Passed away on 30 November.

## NON TECHNICAL

ASWIN SRINIVAS.M

III YEAR EEE

Q1: He received Padmashri in the year 2008. Born in Mahe, he is a first generation immigrant to the US. He started out by directing and starring in his own venture 'Praying with Anger.' Has a wife called Bhavna and recently quipped 'My belief in ghosts is not 100%, but I am open to the idea.' He was also involved with the project *Stuart Little*. Who?

**Ans: Manoj Night Shymalan**

Q2: India's first international biosphere reserve is called what?

**Ans: Nilgiri biosphere reserve**

Q3: One of the largest makers of cycles in the world Hero Cycles began their journey from which town?

**Ans: Ludhiana**

Q4: The Park was created to protect its Keystone species, the Nilgiri Tahr. As a part of Western Ghats it is a part of the UNESCO world heritage site. Name the park

**Ans: Mukurthi National Park**

Q5: In 1713, he was given a death sentence by emperor Farukhsiyar for criticising him in Sikka (verses made for commemorating the minting of a new coin). His real name Mir Muhammad Jafar. He had a brilliant command over Persian, Hindi and Rekhta. Name the poet.

**Ans: Zatalli**

Q6: Name the accomplished eldest daughter of Emperor Shah Jahan under whose instruction Chandni Chowk was constructed?

**Ans: Jahanara Begum**

Q7: Emomali Rakhmonov-the president of Tajikistan's visit to this tomb opposite Purana Quila is commemorated in a tablet. The tombs here were sanctioned by Khwaja Sheikh Nooruddin and in one of them rest one of the greatest masters of "Sabk-e-Hindi" school of poetry Mirza Abdul Qadir. How do we know him better?

**Ans: Bedil**

Q8: Which Indian's debut novel made it to the final shortlist for the Man Booker prize 2012?

**Ans: Jeet Thayil, *Narcopolis***

Q9: The British companies invested nearly 100 million pounds in this business by 1875. A number of networks sprung up as a result of Guaranteed System by 1868 including East India, Oudh, Rohilkhand, North-Western, Central Indian, Great Indian Peninsula and South India. Under the system investors got around 5 per cent of fixed interest on their investment. By 1870, the figure had reached 4,771 miles. Which business are we discussing?

**Ans: Railways**

Q10: Rajendra Narayan Singh Deo and Bishwanath Das led two coalition governments between March 8, 1967-January 9, 1971 and April 3, 1971 to June 14, 1972 respectively. Which party was common to both the coalitions?

**Ans: Swatantra Party**

Q11: Every year a big fair popularly known as **Ashokastami Mela** is held in the month of April. This historic Shaiva pilgrimage dates back to 7th to 9th century and is in the Kaliashahar sub-division of Tripura, Name the place.

**Ans: Unakoti**

Q12: The Lushai hills would be a part of which mountain range in Mizoram?

**Ans: Patkai**

Q13: Williamnagar, the headquarter-complex of which district of Meghalaya, was christened after Captain Williamson Sangma, the founding Chief Minister of the State of Meghalaya?

**Ans: East Garo Hills**

Q14: The *Ficus elastica* produces a series of secondary roots from higher up its trunk and can comfortably perch atop huge boulders along the riverbanks, or even in the middle of the rivers. One special bridge, believed to be the only one of its kind in the world, is actually two bridges stacked one over the other and has come to be known as the "Umshiang Double-Decker Bridge." Which area are we talking about?

**Ans: Cherrapunjee**

Q15: This picturesque town circled by the majestic Myntdu River and serves as the headquarters of the district. **Caves in Lumshnong and Syndai** in this district is one of the largest cave networks in Asia. Name the headquarter town.

**Ans: Jowai**

Q16: Near to this town is the Eaglesnest Wildlife Sanctuary. Part of the West Kameng district, the Tawang gompa is a part of this town inhabited by a few tribes including the Monpas Name the town?

**Ans: Bomdilla**

Q17: He did the country proud by winning the gold in the 800-metre event at the 1966 Bangkok Asian Games. He was the first Arjuna Award winner from the region. Name the athlete?

**Ans: Bhogeshwar Baruah**

Q18: He was captain of the Indian team in the first official football game in its history. He had a nine-year career as a professional footballer with Mohun Bagan. After his retirement from football, he studied medicine and in 1978 became the director of Nagaland Health Services. Name the legend?

**Ans: Dr Talimaran Ao (January 28, 1918 – September 13, 1998)**

Q19: In 2005 he was a winner of a Whiteley Award for outstanding leadership in nature conservation. From this fund he created the Agumbe Rainforest Research Station for the study of king cobras and their habitat. Can you name this living legend?

**Ans: Romulus Whitaker**

Q20: With which legendary Bollywood personality's film Hum Naujawan did Tabu make his debut in Bollywood in 1985?

**Ans: Dev Anand**

Q21: We often buy CTC tea? What does CTC stand for?

**Ans: Cutting, Tearing Curling**

Q22: MCX and India Post has joined hands to set up Gramin Suvidha Kendras at village level post offices to facilitate a farmer to know all crop-related information. What does MCX stand for?

**Ans: Multi Commodity Exchange of India Limited**

Q23: Middlename: Sarmanbhai. Her life partially inspired a Hindi film. Mother of four, her daughter-in-law Rekha was gunned down on May 20, 2006 as a part of the inter-gang rivalry. Who is this personality to be referred to the annals of Indian mafiosi?

**Ans: Santokben Jadeja**

Q24: Which Hindustani classical vocalist of Rampur Sahaswan gharana has set up trust dedicated to her mother's memory and promotion of classical music called Shakhri Begum Memorial Trust?

**Ans: Ustad Rashid Khan**

Q25: Which general won the Battle of Imphal in 1944?

**Ans: General Slim**



# AC MOTOR



An **AC motor** is an electric motor driven by an alternating current (AC). The AC motor commonly consists of two basic parts, an outside stationary stator having coils supplied with alternating current to produce a rotating magnetic field, and an inside rotor attached to the output shaft producing a second rotating magnetic field. The rotor magnetic field may be produced by permanent magnets, reluctance saliency, or DC or AC electrical windings.

Less commonly, linear AC motors operate on similar principles as rotating motors but have their stationary and moving parts arranged in a straight line configuration, producing linear motion instead of rotation.

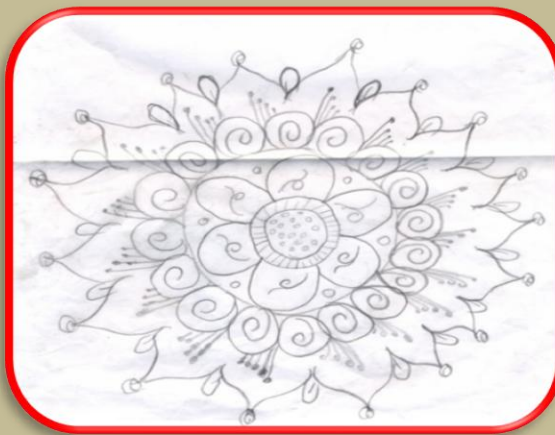
## Operating principles

AC motors operate with two rotating (or moving) magnetic fields on the rotor and stator respectively. Pulling or pushing the poles of the two magnetic fields along, the speed of the stator rotating magnetic field ( $W_s$ ) and the speed of the rotor rotating magnetic field ( $W_r$ ), which is relative to the speed of the mechanical shaft ( $W_m$ ), must maintain synchronism for average torque production by satisfying the synchronous speed relation (i.e.,  $\pm W_s \pm W_r = W_m$ ).<sup>[1]</sup> Otherwise, asynchronously rotating magnetic fields would produce pulsating or non-average torque.

The two main types of AC motors are classified as induction or synchronous. The induction motor (or asynchronous motor) always relies on a small difference in speed between the stator rotating magnetic field and the rotor shaft speed called slip to induce rotor current in the rotor AC winding. As a result, the induction motor cannot produce torque about synchronous speed where induction (or slip) is irrelevant or ceases to exist. In contrast, the synchronous motor does not rely on slip-induction for operation and uses either permanent magnets, salient poles (having projecting magnetic poles), or an independently excited rotor winding. The synchronous motor produces its rated torque at exactly synchronous speed. The brushless wound-rotor doubly-fed synchronous motor system has an independently excited rotor winding that does not rely on the principles of slip-induction of current. The brushless wound-rotor doubly-fed motor is a synchronous motor that can function exactly at the supply frequency or sub to super multiple of the supply frequency.

R.BALAMURALI

III YEAR EEE



**S.KANIMOZHI**

**II year EEE**

## WIRELESS POWER SUPPLY

*Wireless power is transitioning from a technology to an industry, and many questions ranging from what consumers really expect to which technology is the safest and most efficient solution are generating an increasing amount of debate as proprietary products come to market and a wireless power standard is introduced. As wireless power reaches a tipping point, it is important that developers and consumers alike understand the realities of the different technological approaches, especially the safety and efficiency concerns surrounding them, and the current and future states of the technology as it gains momentum.*

### DESCRIPTION:

*The cables that once restricted electronic equipment are gradually being rendered unnecessary by wireless communication technology, and as circuits shrink, only the power cords and huge batteries continue to chain mobile gear down. Research into using wireless technology to supply power to terminals began about a century ago, when the first electronics technology appeared, and it is finally beginning to be realized providing means to cut the final chains. It entered limited use about a decade ago, and is expected to see widespread use in everyday applications like mobile phone handsets and portable music players from the second half of 2007 through 2008.*

### WHY?

*With wireless transmission of electric power, irritating tasks such as replacing batteries or using a charger to recharge batteries will be drastically reduced. In some cases, it will be possible to dispense completely with power cords. It offers complete wireless power supply and charging. Diverse commercial applications are expected from the second half of 2007. These technologies are attracting so much attention from manufacturers and researchers lately due to the following reasons*

- market growth
- developments in technology
- delay in competing technologies

### EXECUTIVE SUMMARY:

*The power supply works by using the concept of resonance, which allows the efficient transmission of energy between items which resonate at the same frequency. They have likened the theory to that of an opera singer smashing a glass of wine with their voice - the glass will only smash if the liquid is filled to a level which ensures both the singers voice and the glass resonate on the same frequency. A simple copper antenna designed to have long-lived resonance. could transfer energy to a laptop with its own antenna resonating at the same frequency. The computer would be truly wireless. Any energy not diverted into a gadget or appliance is simply reabsorbed. Wireless power supply technologies at present can be divided into three groups according to their principle of operation. The first non-contact technology achieving widespread adoption in many portable terminals is electromagnetic induction. Two coils are brought close to each other and when current is passed through one, the generated magnetic flux causes electromotive force to be generated in the other. Another technology very close to commercial use makes use of the fact that energy can be transmitted and received directly as radio waves. This is fundamentally the same principle of operation as used in the crystal sets of a century ago, with alternating current (AC) radio waves converted into direct current (DC) without amplification. Recent improvements in efficiency have made it possible to consider this technology for commercial applications. The third principle is electromagnetic resonance. Resonance technology is extensively utilized in electronics, but this specific application uses only the electric or magnetic field, instead of electromagnetic waves, current, etc. A group under Asst Prof Marin Soljacic, Physics Dept, Massachusetts Institute of Technology (MIT) of the US was the first in the world to announce its potential for use as a power supply technology, in November 2006.*

M.SUDHASHINI

II Year EEE

## RIDDLES

A.ARCHANA III YEAR EEE

*Try Cracking these Riddles!*

1. *Which is the nearest star to earth?*
2. *What is one light year?*
3. *What is one light second?*
4. *What is one light minute?*
5. *What is the distance between the earth & the moon?*
6. *How many stars are normally visible?*
7. *Which is the largest and most luminous star?*
8. *Which is the nearest star visible to naked eye?*
9. *What is the density of stars?*
10. *Which is the farthest visible object at space?*

**Answers:**

- 1) *Proxima Centauri*
- 2) *9.46 lakh crores k.m*
- 3) *297600 km*
- 4) *107136000 km*
- 5) *15 light second*
- 6) *About 5776*
- 7) *The most massive Betelgeuse, which is 300 times greater than the sun*
- 8) *Alpha Centuri*
- 9) *1,000 hydrogen atoms per cubic centimeter*
- 10) *Andromeda galaxy*