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Department of Electronics and Communication Engineering

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ECE
Department

VISION

To develop the department into a centre of excellence and produce high quality, technically competent and responsible Electronics and communication engineers

MISSION

To create a learner centric environment that promotes the intellectual growth of the students.

To develop linkages with R & D organizations and educational institutions for excellence in teaching, learning and consultancy practices.

To build the student community with high ethical standards.

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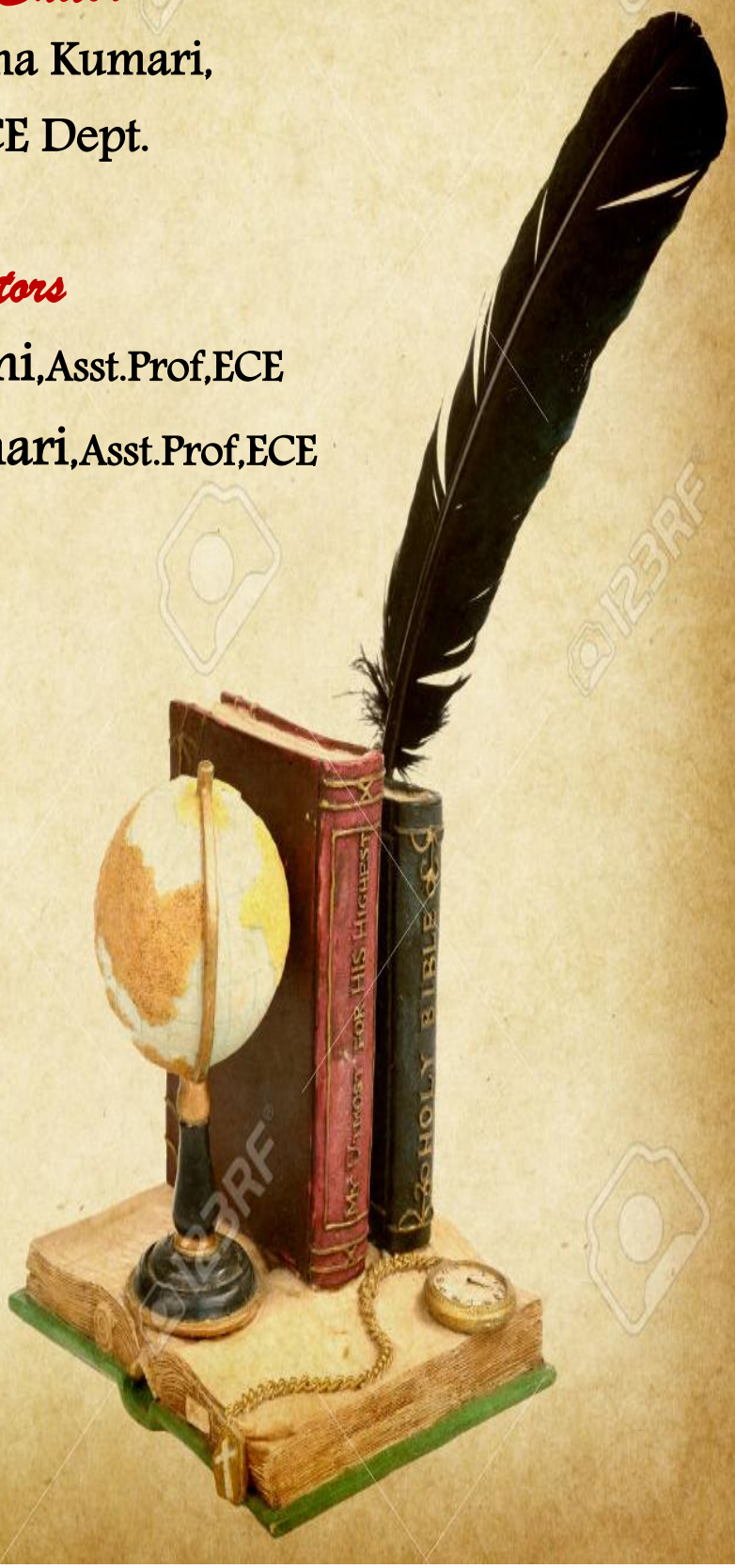

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SOPHIA- THE HUMANOID ROBOT & HANSON

Sophia is a social humanoid robot developed by Hong Kong-based company Hanson Robotics. She has been designed to learn and adapt to human behavior and work with humans. In October 2017, the robot became a Saudi Arabian citizen, the first robot to receive citizenship of any country.

Dr. David Franklin Hanson Jr. is an American roboticist was most well-known for creating Sophia, the world's first ever robot citizen. Also founder and Chief Executive Officer of Hanson Robotics, a Hong Kong based robotics company founded in 2013.

Hanson designed Sophia to be a suitable companion for the elderly at nursing homes, or to help crowds at large events or parks. He hopes that the robot can ultimately interact with other humans sufficiently to gain social skills.

Dr. Hanson was born in on December 20, 1969 in Dallas, Texas, United States. After he graduated university, Hanson worked as an artist, and went on to land a position with Disney where he was a sculptor and material researcher in the Disney Imagineering Lab. Currently, David Hanson is the founder and CEO of Hong Kong-based Hanson Robotics, which was founded in 2013.

Hanson's creation Zeno, a two-foot tall robot designed in the style of a cartoon boy, provides treatment sessions to children with autism in Texas as a result of a collaboration between the University of Texas at Arlington, Dallas Autism Treatment Center, Texas Instruments and National Instruments, and Hanson. David Hanson has earned awards from NASA, NSF, AAAI, Cooper Hewitt Design Triennial and was named Tech Titans' Innovator of the Year.

Sophia was activated on April 19, 2015.The robot is modeled after actress Audrey Hepburn, and is known for its human-like appearance and behavior compared to previous robotic variants. According to the manufacturer, David Hanson, Sophia uses artificial intelligence, visual data processing and facial recognition. Sophia also imitates human gestures and facial expressions and is able to answer certain questions and to make simple conversations on predefined topics (e.g. on the

weather). The robot uses voice recognition technology from Alphabet Inc. (parent company of Google) and is designed to get smarter over time. Sophia's intelligence software is designed by Singularity NET. The AI program analyses conversations and extracts data that allows it to improve responses in the future. Sophia defies conventional thinking of what a robot should look like. Designed to look like Audrey Hepburn, Sophia embodies Hepburn's classic beauty: porcelain skin, a slender nose, high cheekbones, an intriguing smile, and deeply expressive eyes that seem to change color with the light. If ever there were a robot with a simple elegance people can't help but appreciate, it would be Sophia.

Her creator is Dr. David Hanson, founder of Hanson Robotics and a modern-day renaissance man who has built a worldwide reputation for creating robots that look and act amazingly human. After working at Disney as one of its "Imagineers," Dr. Hanson aspired to create genius machines that are smarter than humans and can learn creativity, empathy and compassion—three distinctively human traits Hanson believes must be developed alongside and integrated with artificial intelligence for robots to solve world problems too complex for humans to solve themselves.

Sophia is Hanson Robotics' latest and most advanced robot. She has also become a media darling, having given numerous interviews to multiple media outlets, sang in a concert, and even graced the cover of one of the top fashion magazines. One of her interviews has generated billions of views and social media interactions. She has also shown her potential in business, having met face-to-face with key decision makers across industries including banking, insurance, auto manufacturing, property development, media and entertainment. In addition, she has appeared onstage as a panel member and presenter in high-level conferences, covering how robotics and artificial intelligence will become a prevalent part of people lives.Sophia is an evolving genius machine. Her incredible human likeness, expressiveness, and remarkable story as an awakening robot Over time, her increasing intelligence and remarkable story will enchant the world and connect with people regardless of age, gender, and culture.

By
A Sai sindhu
14A81A0406

INNOVATION

FOLDING ROBOTS
NO BATTERY, NO WIRE, NO PROBLEM

The traditional Japanese art of origami transforms a simple sheet of paper into complex, three-dimensional shapes through a very specific pattern of folds, creases, and crimps. Folding robots based on that principle have emerged as an exciting new frontier of robotic design, but generally require on board batteries or a wired connection to a power source, making them bulkier and clunkier than their paper inspiration and limiting their functionality.

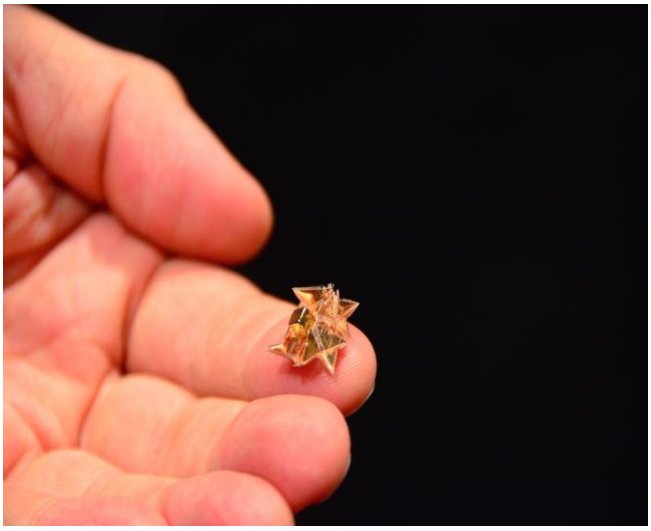
OPERATION:

The research team's robots are flat and thin (resembling the paper on which they're based) plastic tetrahedrons, with the three outer triangles connected to the central triangle by hinges, and a small circuit on the central triangle. Attached to the hinges are coils made of a type of metal called shape-memory alloy (SMA) that can recover its original shape after deformation by being heated to a certain temperature. When the robot's hinges lie flat, the SMA coils are stretched out in their "deformed" state; when an electric current is passed through the circuit and the coils heat up, they spring back to their original, relaxed state, contracting like tiny muscles and folding the robots outer triangles in toward the centre. When the current stops, the SMA coils are stretched back out due to the stiffness of the flexure hinge, thus lowering the outer triangles back down.

The power that creates the electrical current needed for the robots movement is delivered wirelessly using electromagnetic power transmission, the same technology inside wireless charging pads that recharge the batteries in cell phones and other small electronics. An external coil with its own power source generates a magnetic field, which induces a current in the circuits in the robot, thus heating the SMA coils and inducing folding. In order to control which coils contract, the team built a

resonator into each coil unit and tuned it to respond only to a very specific electromagnetic frequency. By changing the frequency of the external magnetic field, they were able to induce each SMA coil to contract independently from the others.

Just like the muscles in the human body, the SMA coils can only contract and relax: it's the structure of the body of the robot -- the origami "joints" -- that translates those contractions into specific movements. To demonstrate this capability, the team built a small robotic arm capable of bending to the left and right, as well as opening and closing a gripper around an object. The arm is constructed with a special origami-like pattern to permit it to bend when force is applied, and two SMA coils deliver that force when activated while a third coil pulls the gripper open. By changing the frequency of the magnetic field generated by the external coil, the team was able to control the robots bending and gripping motions independently.



Applications:

There are many applications for this kind of minimalist robotic technology; for example, rather than having an uncomfortable endoscope put down their throat to assist a doctor with surgery, a patient could just swallow a micro-robot that could move around and perform simple tasks, like holding tissue or filming, powered by a coil outside their body.

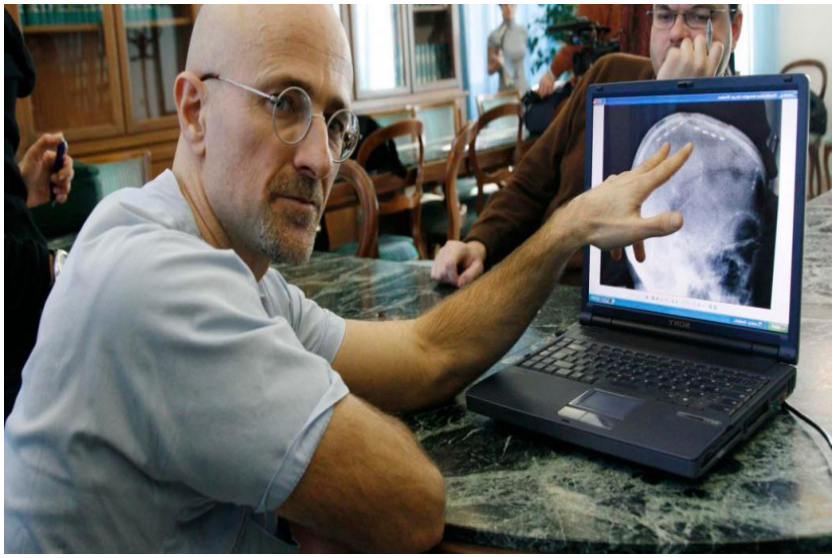
When people make micro-robots, the question is always asked, 'How can you put a battery on a robot that small?' This technology gives a great answer to that question by turning it on its head: you don't need to put a battery on it, you can power it in a different way. Medical devices today are commonly limited by the size of the batteries that power them, whereas these remotely powered origami robots can break through that size barrier and potentially offer entirely new, minimally invasive approaches for medicine and surgery in the future.

by
B. RAMYA
3rd year, ECE-C
16A81A0427

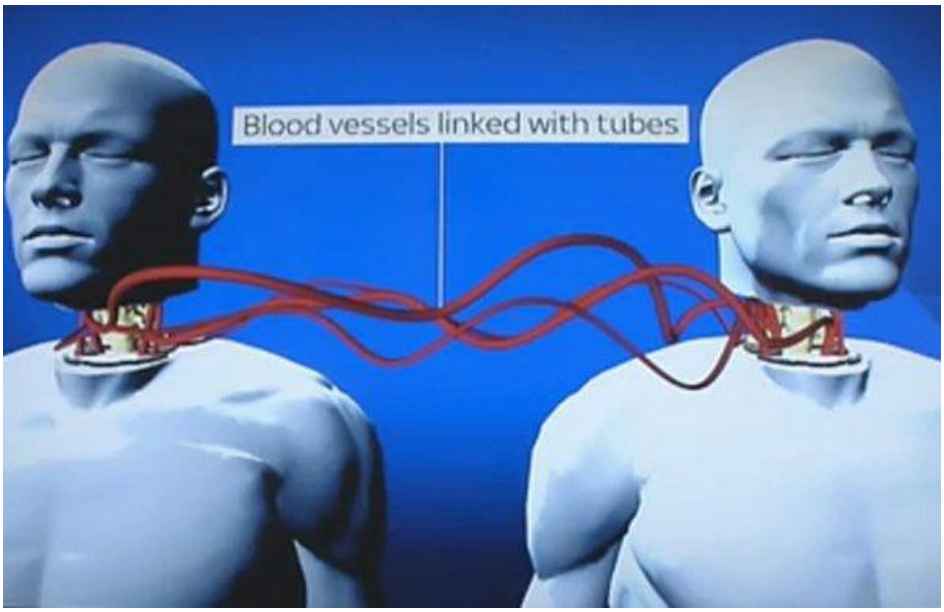
CURRENT ISSUE

HUMAN HEAD TRANSPLANT

Now a days technology is improving day by day .. In medical field we have seen several wonders . From the past to present we have seen the transplantation of heart, kidney and eyes etc .... But first time we are seeing the world's first Human Head Transplantation is scheduled to take place in December 2017. It will be conducted by Italian neurosurgeon Sergio Canavero, who has been planning it for 30 years. It will be conducted on a Russian terminally ill patient Valery Spiridonov who suffers from a rare form of spinal muscular atrophy.



The operation will involve cooling his head to around -15°C (5°F). And reconnecting it to the donated body of a brain dead person. Spinal cord nerves from the recipients head and the donors body are then fused together using polyethylene glycol. After the muscles and blood supply are successfully connected, the patient is kept in a coma for a month to limit movement of the newly fused neck, while electrodes stimulate the spinal cord to strengthen its new connections. The surgery is expected to cost about $11 million and will last 36 hours. It will also involve over 150 doctors and nurses.



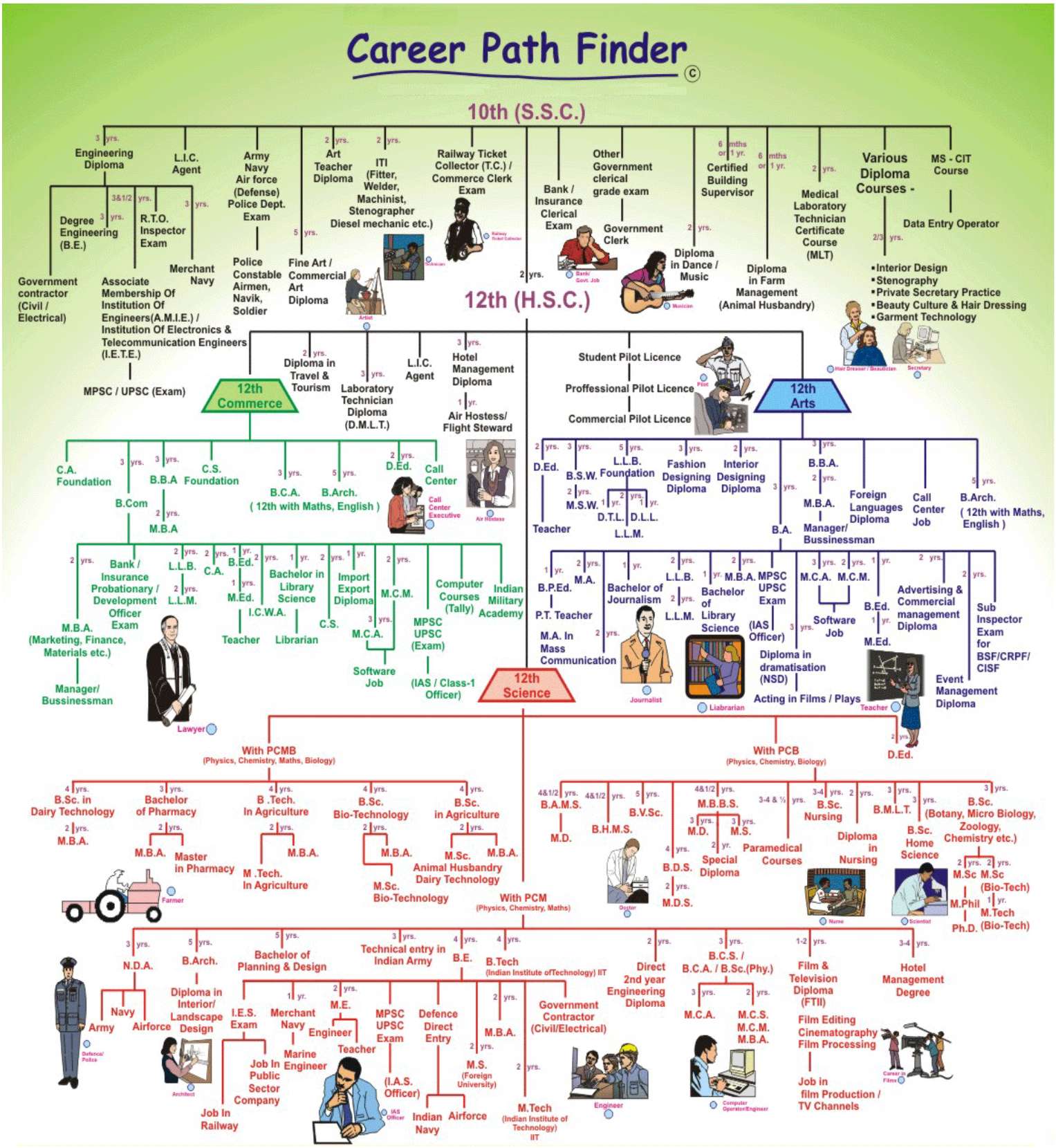
The skin would be sewn by a plastic surgeon for maximal cosmetic results. Once the procedure is finished, the recipient will be kept in a coma for 3-4 weeks, to prevent any spontaneous ruptures to the sutures during recovery. He would also be given medication to suppress immune response, similar to how it could be given for any other transplant patient.

Since the Operation is scheduled on December month. We all hope that it is going to be successful and a new wonder is added to our medical science.

by
B. Ramesh
2nd year,ECE-A
16A81A0405

"Can you can a canned can into an un-canned can like a canner can can a canned can into an un-canned can?

CAREER GUIDANCE



STRESS- THE COMMON ISSUE HACKING

Stress is a very common problem being faced today. Every individual will experience stress in one or the other time. Stress is a state of mental or emotional strain or suspense. It is created by what we think rather than by what has actually happened. Indeed, stress **symptoms** can affect your body, your thoughts and feelings, and your behavior. Being able to recognize common stress **symptoms** can give you a jump on managing them. Stress that's left unchecked can contribute to many health problems, such as high blood pressure, **heart disease**, obesity and diabetes. There are numerous emotional and physical disorders that have been linked to stress including depression, anxiety, heart attacks, stroke, hypertension, immune system disturbances that increase susceptibility to infections, a host of viral linked disorders ranging from the common cold and herpes to AIDS and certain cancers, as well as autoimmune diseases like rheumatoid arthritis and multiple sclerosis. In addition stress can have direct effects on the skin (rashes, hives, atopic dermatitis, the gastrointestinal system (GERD, peptic ulcer, irritable bowel syndrome, ulcerative colitis) and can contribute to insomnia and degenerative neurological disorders like Parkinson's disease. Why to handle all these effects if we can handle stressssssssssss…….Here are some tips given to kick off the stress.

#1 – Eat Healthy

If you truly want to reduce your stress levels, then you have to take care of yourself. Begin by watching what you eat. If you eat a lot of junk or even skip meals, then how on earth do you expect to perform your best? Just like a car needs good fuel to run your body also needs good fuel (nutrients) to run efficiently.

#2-SLEEP

Your body needs rest. According to the National Sleep Foundation every individual need between 6.5 to 8 hours of sleep. Don't skip out on sleep because you have a lot to do. You will perform better if you get a good night's rest. Sleep is your body's automatic meditation mode. It helps you regroup and relax so you'll be ready to tackle the next day's tasks with a clearer mind.

#3 – Get Moving

It's not uncommon to get so bogged down that the last thing you want to do is get up and move. If you're thinking "I don't have time to exercise," think again! A study recently published in the *Journal of School Health* shows that just two hours of extra exercise each week can improve your work performance. So not only is exercise good for you, but it can help your grades.

#4 – Me Time

Take some time out of your busy day and spend it with a very important person; yourself! You need time to relax and have fun. It's important to schedule some time into your busy day to do something you enjoy like: seeing a movie, reading a book, going shopping , singing or dancing.

#5 – Friend Time

Don't give your friends the shaft when other things such as school, athletics, clubs, work, etc., consume your time. Friends serve an important role in helping you cope. Don't keep them out of your life because your busy. You need them.

#6 – Find Balance

Don’t take on more than you can accomplish at once. Find a way to balance all of the things that are on your plate. You can start by making a list and marking off anything that doesn’t need your immediate attention. Practice managing your time and prioritizing what needs to be done so that you can work smarter, not harder.

#7 – Go outside

How much time do you spend outside on a given day? If you said not much, then go outdoors! Research has shown that being outside improves your mood (which can improve your performance). Just a few extra minutes each day can make a big difference.

#8 – Take a breath

One quick way to calm yourself quickly is to breathe. Oftentimes when you’re anxious you breathe from your chest rather than from your abdomen. When you breathe from your chest your breath is shallow and you don’t get the full benefit that a deep breath provides. The goal is to have your abdomen inflate and deflate. Keep practicing taking deep, slow abdominal breaths. You should feel yourself start to relax.

#9 – Find Your Sense of Humor

Laughter is often the best medicine for a stressed out day. When you laugh your body begins to relax and release feel good endorphins. Laughter can also keep you healthy by boosting the immune system (something stress likes to suppress). So go ahead watch a funny show, or crack a joke with a friend and notice how a little laughter can change your entire mood.

#10 – Get Your Zen On

Get your “Zen” on and meditate. Meditation is a great way to melt the stress away. It’s simple!

by,
Snigdha,
15A81A04B0,
3rd ECE-B.

LIMERICKS

There was a young girl on a tower,

Who looked just as fresh as a flower.

Her hair was like silk,

Her skin smooth as milk,

But her breath made the

strongest knight cower--

by
M.SANDEEP
ECE-B,3rd Year
16A85A0421

.

The art of losing isn't hard to master;so many things seem filled with the intent to be lost that their loss is no disaster.

Lose something every day. Accept the fluster of lost door keys, the hour badly spent.
The art of losing isn't hard to master.

Then practice losing farther, losing faster: places, and names, and where it was you meant to travel. None of these will bring disaster.

I lost my mother's watch. And look! My last, or next-to-last, of three loved houses went. The art of losing isn't hard to master.

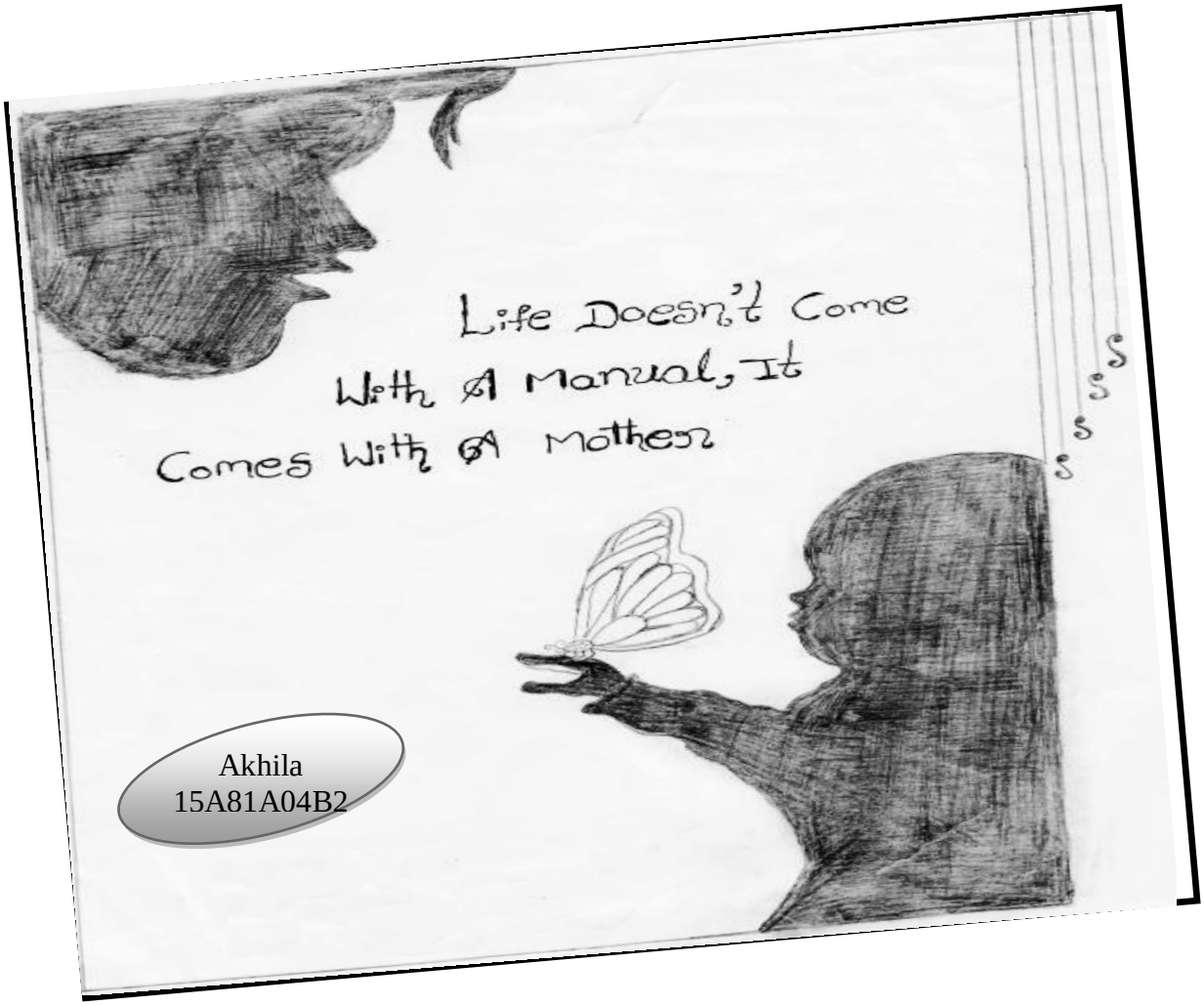
I lost two cities, lovely ones. And, vaster, some realms I owned, two rivers, a continent. I miss them, but it wasn't a disaster.

—Even losing you I shan't have lied. It's evident the art of losing's not too hard to master though it may look like like disaster.

by
J. Sai Sree Mounika
ECE-C, 3rd Year
16A85A0433.

FROM BOOKS TO CANVAS

M VamsiKrishna
15A81A04A0



Akhila
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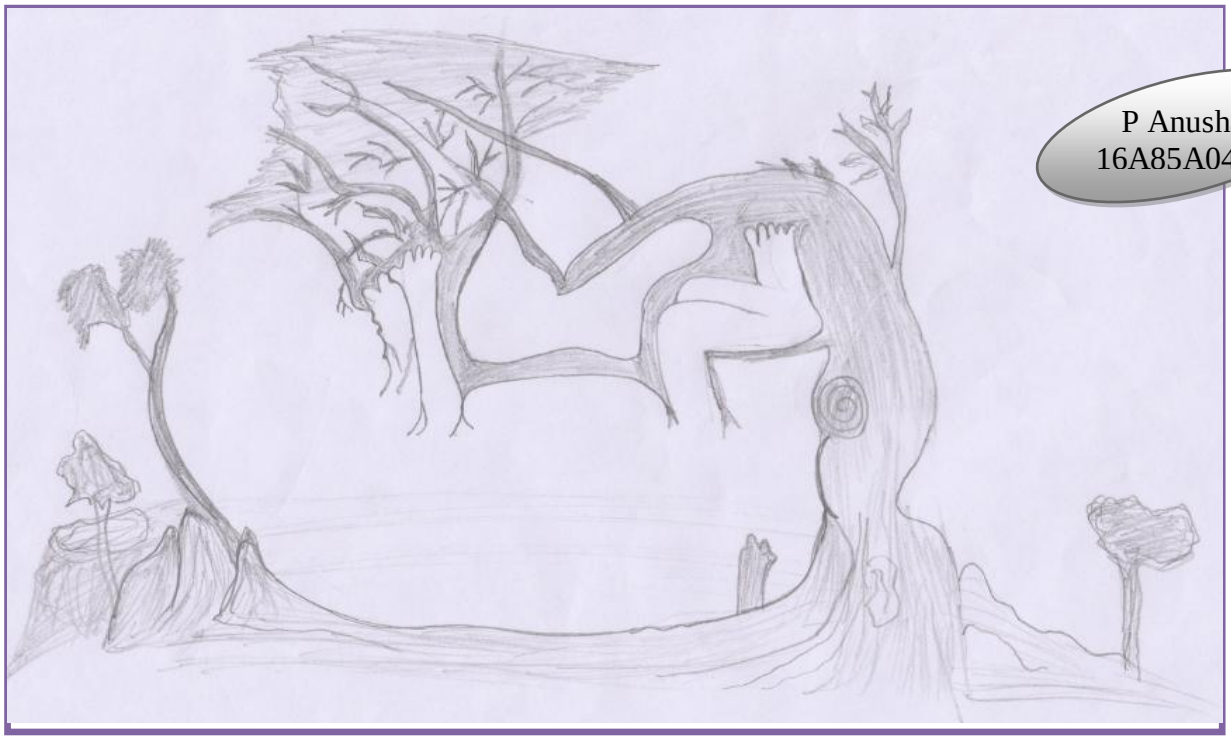


P Anusha
16A85A0425

JOKES

- *I want to make a Facebook account and the name will be Nobody so when I see stupid crap people post, I can Like it. And it will say Nobody Likes This.*

- *Teacher: "Jill, where is the America on the map?"*
  Jill: "Right there, ma'am."
  Teacher: "Correct. Now, Jack, tell me who found America."
  Jack: "Jill."

- *Teacher: "What is the largest city?"*
  Student: "Electricity!
  Teacher: "What is the present tense for the sentence 'I killed someone'?"
  Student: "The present tense would be 'I am in prison.'"

- *Kid: Mom, your not funny you don't make any jokes*
  Mom: I made you

- *Will your computer say ur password for the first time. I changed my password to "incorrect". So whenever i forget my password , then the computer will say "your password is incorrect".*

by
P. Sai Padmini
ECE-A,2nd Year
17A85A0412

TONGUE TWISTER

I thought a thought.But the thought I thought wasn't the thought I thought I thought.If the thought I thought I thought had been the thought I thought, I wouldn't have thought so much.

PROJECT IDEA

Digital Clock RTC in LED Display of 4 Digits and 7 Segments

This is my project of a digital clock with RTC (Real Time Clock) using a LED display of 04 digits and 07 segments including features of temperature and humidity. To control the display I have used an Arduino Uno and 02 chips 74HC595 (8 bit shift register with output latches). There are two modules: one for the sensor of temperature (ºC - Celsius / ºF - Fahrenheit degrees) and humidity (% - in percentage) and another module for the RTC. The assembly of components is not to much complicated but you need to follow the schematics and take care with the wiring.

If you want to use another LED display, check the datasheet to update the output wiring (jumpers) of 74HC595.

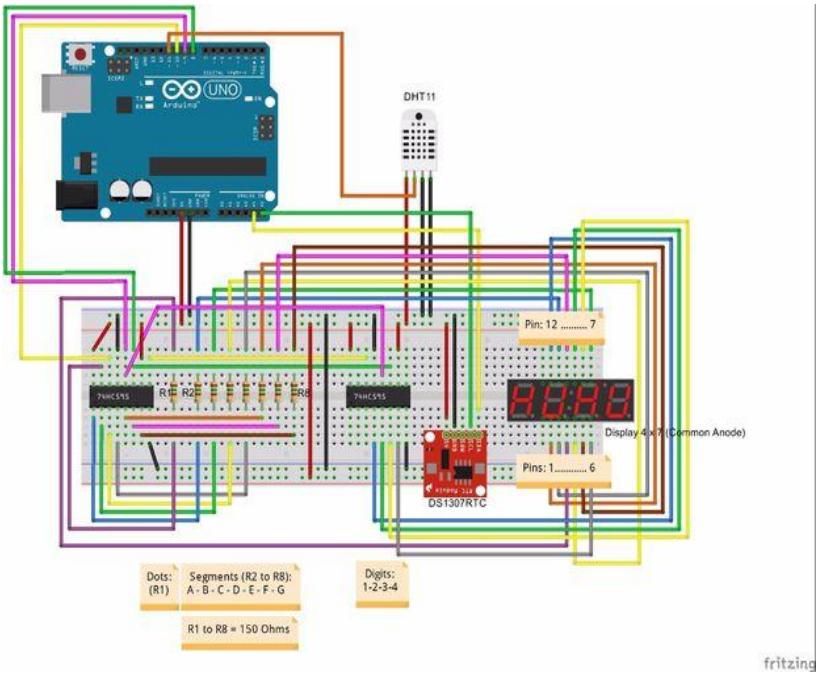
Step 3: Programming

To run the program on Arduino you need to have the following libraries:

1. **Time** (library for date & time)
2. **DS130RTC** (library for the Real Time Clock)
3. **Wire** (library used to support the RTC)
4. **dhtt11** (library for the sensor of Temperature and Humidity)

For the numbering (0 to 9), I have created a table with binary representation of each segment (A to G) that forms the digit as following:

- B01111110 - 0
- B00110000 - 1
- B01101101 - 2
- B01111001 – 3
- B00110011 - 4
- B01011011 - 5
- B01011111 - 6



- B01110000 - 7
- B01111111 - 8
- B01111011 - 9

To show in the LED display the data in sequence of time, temperature and humidity, I have used a "timer" with functions **millis()** and **while()**. In this case, each information is presented on the display and after 3 seconds moves to the next one.

Simple and very efficient.

You can apply this function **millis()** in several different ways to manage the time during the program running. In many situations you can use it in the place of some timer library.

Another usefull function is digitalWrite(). With this function you can simplify the writting of data into the shift registers.

- Remark to setup the time of internal clock of RTC module:

1 - To update or setup the time of RTC module, load the program "SetTime" that you can find here or in the library/example of DS1307RTC on Arduino Software.

2 - Recompile and reload the program of Digital_Clock on Arduino.

With this procedure, the RTC module will keep the right time due its battery pack attached and you do not need to recompile the Digital_Clock program every time you turn it on.

Step 4: Conclusion

The main lesson for me in this project is related to the logic to manage the display (data multiplexing) using shift registers and also the combination of different sensors in same application.

I hope you have enjoyed this project where I also had the opportunity to contribute to you with a little bit more information about Arduino programming.

by
Ch Radha
16A85A0416, ECE 3rd year

RIDDLES

- ***There are ten cats on a boat. One jumps off. How many are left?***

  Answer: Copycat

- ***What is the longest word in the dictionary?***

  Answer: Smiles, because there is a mile between each 's'

- ***What goes up but never comes down?***

  Answer: Your age!

- ***We see it once in a year, twice in a week, and never in a day. What is it?***

  Answer: The letter "E"

- ***What belongs to you but is used more by others?***

  Answer: Your name.

- ***If you are running in a race and you pass the person in second place, what place are you in?***

  Answer: Second place.

- ***What has to be broken before you can use it?***

  Answer: egg.

By
M.SANDEEP
ECE-B, 3rd Year
16A85A0421

Betty Botter bought some butter,But she said the butter's bitter

If I put it in my batter, it will make my batter bitter

But a bit of better butter will make my batter better

So 'twas better Betty Botter bought a bit of better butter

KNOW HOW TO TAKE VITAMIN

What is vitamin C?

Vitamin C (also known as ascorbic acid) is abundant in vegetables and fruits. A water-soluble vitamin and powerful antioxidant, it helps the body form and maintain connective tissue, including bones, blood vessels, and skin.

What does vitamin C do? What are some vitamin C benefits?

Vitamin C helps to repair and regenerate tissues, protect against heart disease, aid in the absorption of iron, prevent scurvy, and decrease total and LDL ("bad") cholesterol and triglycerides. Research indicates that vitamin C may help protect against a variety of cancers by combating free radicals, and helping neutralize the effects of nitrites (preservatives found in some packaged foods that may raise the risk of certain forms of cancer). Supplemental vitamin C may also lessen the duration and symptoms of a common cold, help delay or prevent cataracts, and support healthy immune function.

What are the signs of a vitamin C deficiency?

Deficiency symptoms include fatigue, muscle weakness, joint and muscle aches, bleeding gums, and leg rashes. Prolonged deficiency can cause scurvy, a rare but potentially severe illness.

How much, and what kind, does an adult need?

According to the National Institutes of Health (NIH), the recommended vitamin C daily allowance (RDA) for adults over age 19 is:

- men, 90 mg per day
- women, 75 mg per day

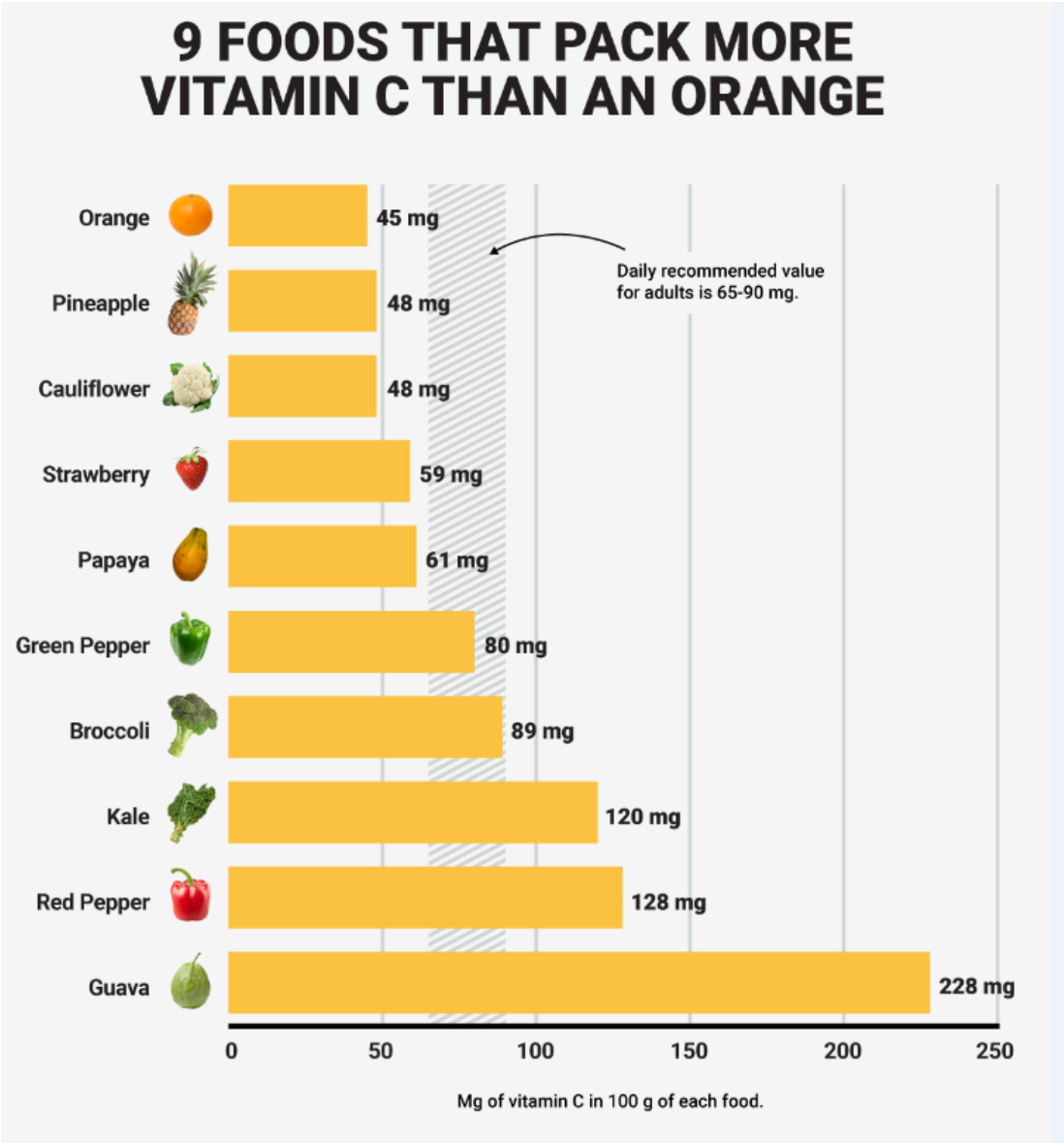
How much does a child need?

NIH recommends Adequate Intakes (AIs):

- infants 0-6 months old, 40 mg per day
- infants 7-12 months old, 50 mg per day.

The RDAs of vitamin C for teens and children are:

- toddlers 1-3 years old, 15 mg per day
- children 4-8 years old, 25 mg per day
- children 9-13 years old, 45 mg per day
- male teens 14-18 years old, 75 mg per day
- female teens 14-18 years old, 65 mg per day



How do you get enough vitamin C from foods?

Vitamin C is easy to get through foods, as many fruits and vegetables contain vitamin C. Good sources include: apples, asparagus, berries, broccoli, cabbage, melon (cantaloupe, honeydew, watermelon), cauliflower, citrus fruits (lemons, limes, oranges), kiwi, fortified

foods (breads, grains, cereal), dark leafy greens (kale, spinach), peppers (especially red bell peppers, which have among the highest per-serving vitamin C content), potatoes, and tomatoes.

Are there any risks associated with too much vitamin C?

When obtained from food sources and supplements in the recommended dosages, vitamin C is generally regarded as safe. Side effects are rarely reported, but include diarrhea, nausea, abdominal cramps, and other gastrointestinal symptoms. For most healthy individuals, the body can only hold and use about 200-250 mg of vitamin C a day, and any excess is lost though urine. At times of illness, during recovery from injury, or under conditions of increased oxidative stress (including smoking), the body can use greater amounts. High doses of vitamin C (greater than 2,000 mg/day) may contribute to the formation of kidney stones, as well as cause severe diarrhea, nausea, and gastritis.

Are there any other special considerations?

Adverse affects may occur between vitamin C and anticoagulant drugs such as warfarin (Coumadin), decreasing their action. Nicotine products, oral contraceptives/estrogens, tetracyclines, barbiturates, and aspirin may decrease levels of vitamin C.

Vitamin C may increase absorption of iron and lutein. Although some evidence suggests that large doses of supplemental vitamin C may interfere with the absorption and metabolism of vitamin B12 found in food, other studies have shown no such effects.

by
TVNL Aswini
Asst.Professor,ECE

Failure never repeats if you have strength to face it. Success never stops if you have ability to run it. ---Ch. Pawan,2nd ECE-B

FACULTY ARTICLE

ELECTRONIC CROSSWORD

1		2		3		*	4
5					*	6	
7			*	*	8		
*	*		9		*		*
*	10	*		*	11		
12					*		*
		*		*	13		

Across:

1.One region on the output characteristics of a transistor that allows it to act as an amplifier. (6)
5.This current flows in a semiconductor only when a field is applied. (5)
6.the abbreviation that holds innumerable transistors and is a revolution in miniaturization era. (2)
7.One type of radar quoted in reverse order. (3)
8.One of the important parameter considered in modulation techniques and is useful to estimate noise. (3)
11.It is a microwave device that can be used as an oscillator are known to exhibit negative resistance region. (3)
13.One type of basic digital modulation technique in which signal to noise ratio is better than the other two techniques. (3)

Down:

2.Significant parameter in signal analysis holding an inverse relation with frequency. (4)
3.The electronic device which is invented by J.L.Baird (in reverse order) (2)
4.The device whose name itself is a rectifier. (3)
9.One type of analysis used in networks to determine currents and is opposite to mesh analysis. (4)
10.One type of transistor in which current is mostly due to holes. (3)
12.Analog modulation technique with high bandwidth and it is not angle modulation. (2)

by
M.SubbaRao,M.Tech(ph.D)
Assistant Professor.

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