

Under the Aiges of VEDA....



Xtronic

The E-Technical Magazine..



July 2017

Department of Electronics and Communication Engineering

Sri Vasavi Engineering College
Approved by AICTE, Affiliated to JNTUK, Kakinada
Accredited by NAAC with 'A' Grade
Pedatadepalli, Tadepalligudem-534101





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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MISSILE MAN AVINASH CHANDER

Eminent scientist Avinash Chander who is considered to be the key architect of the Agni series of nuclear capable missiles was the chief of Defence Research and Development Organisation (DRDO).

Chander, an IIT-Delhi graduate, has over the past several years headed the most prestigious programme of the DRDO — the Agni series of missiles that have evolved as the primary strategic weapons in the nation's arsenal — and was currently the Chief Controller of Missiles and Strategic Systems of the organization was born on 06 Nov 1950. Chander joined DRDO in 1972 after completing graduation in Electrical Engineering from IIT-Delhi and obtained MS in Spatial Information Technology from JNTU, Hyderabad. He hold different positions like Scientific Adviser to Defence Minister, Secretary Department of Defence R&D and Director General of DRDO to Raksha Mantri (SA to RM).



A Padma Shri awardee, Chander has led the design and development of the Agni 1, 2, 3, 4 and 5 series of missiles that culminated with the latest of the series undertaking a successful test that demonstrated a range of over 5000 km.

His Highlights, Awards & Honours

- Prime architect of long range Missile Program of India developing a series of systems culminating in the Intercontinental Ballistic Missile A5.
- Pioneered the development of strap down Inertial Navigation, Guidance, Simulation, advanced avionics architectures and avionics systems.
- Initiated several Centres of Technology to propel R&D in Academic Institutions.
- Creating a thrust for Indigenous capability and export of Indian defence systems.

India is a technology leader, the renowned scientist said it is a time when the “*Nations are measured by their technological prowess*”. Right from the explorations in Deep Space, down to commercial aviation to communication, Nations are assessed by their potential to explore and venture into new areas.

by

A Nalinee Kumari
Asst. Prof,ECE Dept

INNOVATION

THE LATEST UPCOMING AND TRENDING TECHNOLOGY FACE DETECTING SENSOR

Technology from Face is already being used in several popular apps. It is possible to transfer money through Alipay, a mobile payment app used by more than 120 million people in China, using only your face as credentials. Meanwhile, Didi, China's dominant ride-hailing company, uses the Face software to let passengers confirm that the person behind the wheel is a legitimate driver. (A "liveness" test, designed to prevent anyone from duping the system with a photo, requires people being scanned to move their head or speak while the app scans them.)

On one screen a video shows the software tracking 83 different points on my face simultaneously. It's a little creepy, but undeniably impressive.

Local governments are using its software to identify suspected criminals in video from surveillance cameras, which are omnipresent in the country.

In shops and restaurants are looking to the technology to make the customer experience smoother. Not only can he pay for things this way, he says, but the staff in some coffee shops are now alerted by a facial recognition system when he walks in: "They say, 'Hello, Mr. Tang.'"



Applications

Facial recognition

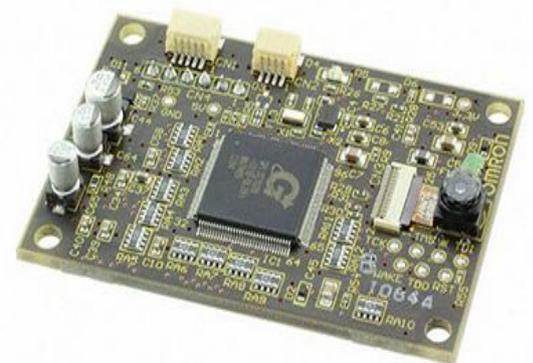
Face detection is used in biometrics, often as a part of (or together with) a facial recognition system. It is also used in video surveillance, human computer interface and image database management.

Photography

Some recent digital cameras use face detection for autofocus. Face detection is also useful for selecting regions of interest in photo slideshows that use a pan-and-scale Ken Burns effect. Modern appliances also use smile detection to take a photograph at an appropriate time.

Marketing

Face detection is gaining the interest of marketers. A webcam can be integrated into a television and detect any face that walks by. The system then calculates the race, gender, and age range of the face. Once the information is collected, a series of advertisements can be played that is specific.



by

Rudru Purna Kalyan
16A81A04H0
ECE-C

Be thankful for what we have; you'll end up having more. If you concentrate on what you don't have, you will never, ever enough

CURRENT ISSUE

DRUG ADDICTION



Drug addiction treatment was sought by people 23.5 million people, age 12 or older, in the U.S. in 2009 but only a fraction of those..... achieved drug addiction recovery. This is likely due to the complex factors, including changes in brain chemistry, associated with drug addiction. Critical to successful drug recovery is medical services,.. recovery is medical services, behavioural and personal counselling, and an ongoing support system to prevent future relapse.

WHY DO PEOPLE USE DRUGS?



Drug use can have a wide range of short- and long-term, direct and indirect effects. These effects often depend on the specific drug or drug used, how they are taken, how much is taken, the person's health, and other factors. Short-term effects can range from changes in appetite, wakefulness, heart rate, blood pressure, and/or mood to heart attack, stroke, psychosis, overdose, and even death. These health effects may occur after just one use.

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According to UN India is the largest consumer of heroin in south asia. India has a business of 20 lakh crore per year of drugs.



Drug Addiction Recovery

The goal of all drug addiction treatment programs is drug addiction recovery. While addiction is considered to be a lifelong illness, drug recovery can be achieved through drug addiction treatment and maintained through drug recovery services such as support groups. Drug addiction recovery can also be aided by residing in a sober living community.

Once in recovery, relapse is common, but this doesn't have to derail drug addiction recovery. While a relapse is discouraging, it should not be seen as a failure. Recovery is a lifelong process and a slipup is normal. A relapse can be seen as a way to learn from a mistake. Attending drug addiction recovery groups, seeing a counsellor, talking to a sober friend or seeing a doctor can all be used to get back on the path of drug addiction recovery.

“June 26 is celebrated as International Day against Drug Abuse every year“



CAREER GUIDANCE

Electronics and Communication engineering is one of the old and the best course in the field of engineering. This article provides Career Guidance, Choices, Career development strategies, Job Opportunities, Salary and Skills Required in the field of Electronics and Communication for ECE, MSc Electronics students to make a successful career. Here I present you some reg....

Higher Education Opportunities in Top Universities for ECE Students

University	City
NY Princeton University	Princeton
Massachusetts Institute of Technology	California
MA Stanford University	California
University of California	Champaign and Urbana
University of Illinois	Pasadena
California Institute of Technology	Atlanta
Georgia Institute of Technology	Ann Arbor

Skill Set required for getting Jobs

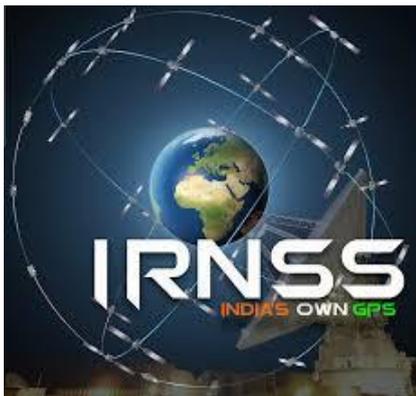
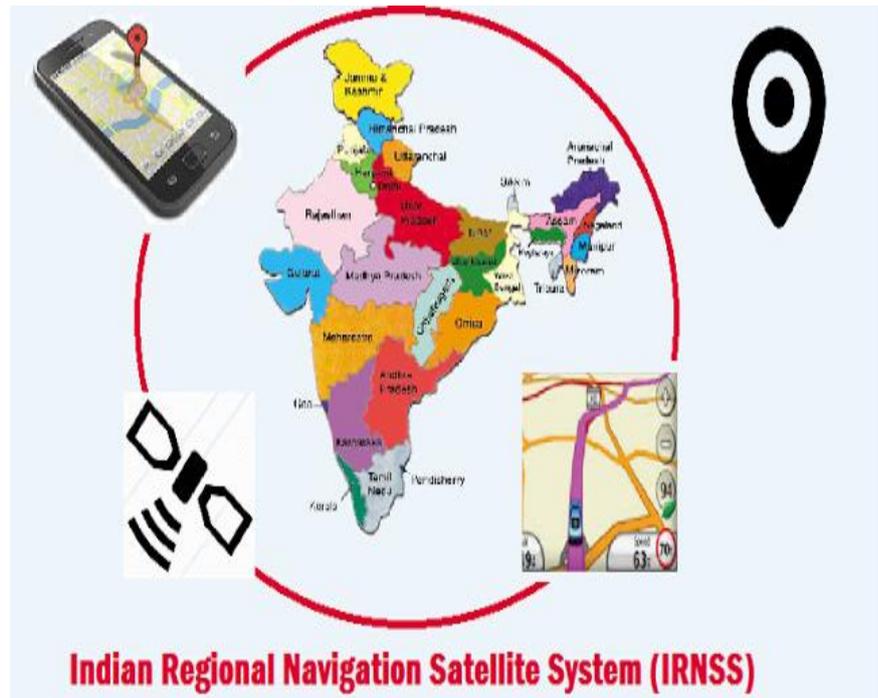
JOB Category	JOB Category	JOB Category
VLSI	Verilog and VHDL	VLSI Jobs
Circuit Design	Electronics Circuit Design Basics	Circuit Design Jobs
Chip Design	Transistor Process technology , Microprocessors	Embedded Jobs
Mobile Communications	Network Switching, Communication Basics, Voice over Internet protocols and interactive voice recognition	Telecom Jobs
Networking	CCNA or CCNP Certification.	CCNA CCNP Jobs

by
J. Prasanna Lakshmi
16A85A0434, ECE-C

IRNSS

IRNSS (INDIAN REGIONAL NAVIGATION SATELLITE SYSTEM) is an autonomous regional satellite navigation system being developed by ISRO (Indian Space Research Organization). The objective is to implement an independent and indigenous regional space borne navigation system for national applications. The system is expected to provide accurate real-time position, velocity and time observables for users on a variety of platforms with a 24 X 7 day service availability under all weather conditions.

The IRNSS system will consist of a constellation of seven satellites and a supporting ground segment. Three of the satellites in the constellation



will be placed in a geostationary orbit and the remaining four in a geosynchronous inclined orbit of 29° relative to the equatorial plane. Such an arrangement would mean all seven satellites would have continuous radio visibility with Indian control stations. ISRO has filed for 24 MHz bandwidth of spectrum in the L5-band (1164 – 1189 MHz) for IRNSS and for the second signal in S-band (2483.5 – 2500 MHz).

IRNSS will have a network of 21 ranging stations geographically distributed primarily across India. They provide data for the orbit determination of IRNSS satellites and monitoring of the navigation signals. The data from the ranging/monitoring stations is sent to the data processing facility at INC where it is processed to generate the navigation messages. The navigation messages are then transmitted from INC to the IRNSS satellites through the spacecraft

control facility at Hassan/Bhopal. The IRNSS constellation architecture consists of the following segments

- **Space segment:** The IRNSS satellites carry a navigation payload in a redundant configuration. The important functions of the IRNSS payload are: Transmission of the navigational timing information in the L5 bands; transmission of navigation, timing information in S-band; generation of navigation data on-board, CDMA ranging transponder for precise ranging.
- **Ground segment:** The ground segment is responsible for the maintenance and operation of the IRNSS constellation. It contains a whole complement of the elements required for a basic constellation and is mainly comprised of: - Master Control Center for spacecraft control and navigation, IRNSS tracking and integrity monitoring stations, CDMA ranging stations, uplinking and telemetry stations, communication links and network timing center.
- **User segment:** Specially designed receivers and antennas are needed to receive the IRNSS signals. It is planned to broadcast the time difference between the IRNSS time and the time of the other constellations to enable the users to take advantage of the signals available to them.



by
Dr.E.Kusuma Kumari
HOD, ECE Dept

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LIMERICKS

A Time Capsule

*This is where
I began to care
Where I was befriended;
This is where
My soul was bared
Where all my rules were bended;
This is where
A moment was shared
Was stolen and expended;
Now this is where,
This is where,
This is where we have ended-*

by
D.S.P. Manohar,
16A81A0418,ECE-A.

Hope

*"Hope" is the thing with feather
That perches in the soul -
And sings the tune without the
words -
And never stops - at all -
And sweetest - in the Gale - is
heard -
And sore must be the storm -
That could abash the little Bird
That kept so many warm -
I've heard it in the chilliest
land -
And on the strangest Sea -
Yet - never - in Extremity,
It asked a crumb - of me.*

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

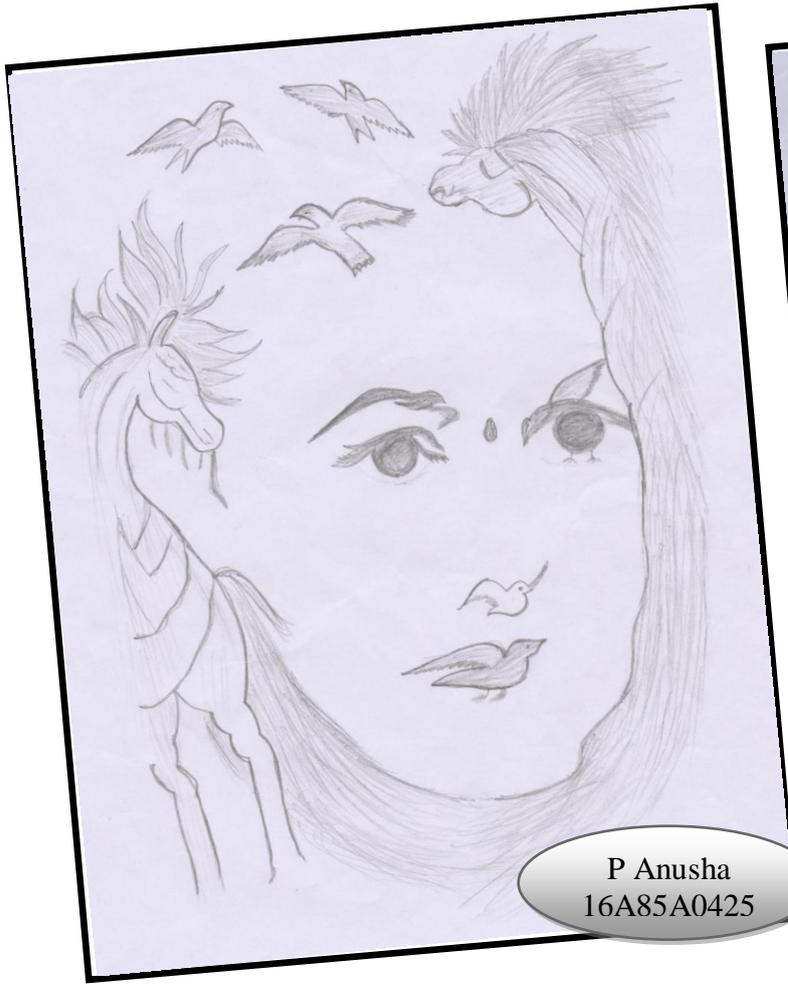
FROM BOOKS TO CANVAS



K Poojitha
16A81A04E1

TONGUE
TWISTER

A Twister of Twists once Twisted a Twist. And the Twist that he twisted was a three twisted twist. Now in Twisting this twist, If a twist should untwist, would the twist that untwisted untwist the twists



P Anusha
16A85A0425



Ch Navya
16A81A04C7



Kiran
16A81A04C2

JOKES

AFTER ENGLISH EXAM

How was the paper?

It was easy but question 5 confused me

What was the question?

Question 5 wanted the past tense of "think"

I thought & thought & thought

And end up with writing "thinked". ---K. Mercy
17A85A0405,
ECE-A

Maths Teacher: What is a line?

Raju: A line is a dot that's going for a walk.

Maths Teacher: Then what are parallel lines?

Raju: A dot going for a walk with his Girlfriend.

Teacher: How can you make number seven to an even number

Student: Just take the "s" out from it! Sir.---D.S.P.Manohar.
16A81A0418, E.C.E.A

World Laughter

Day is

Celebrated on 1st

Sunday of MAY



“A day without
laughter is a day
wasted.”

Charlie Chaplin

16 April 1889 – 25 December 1977

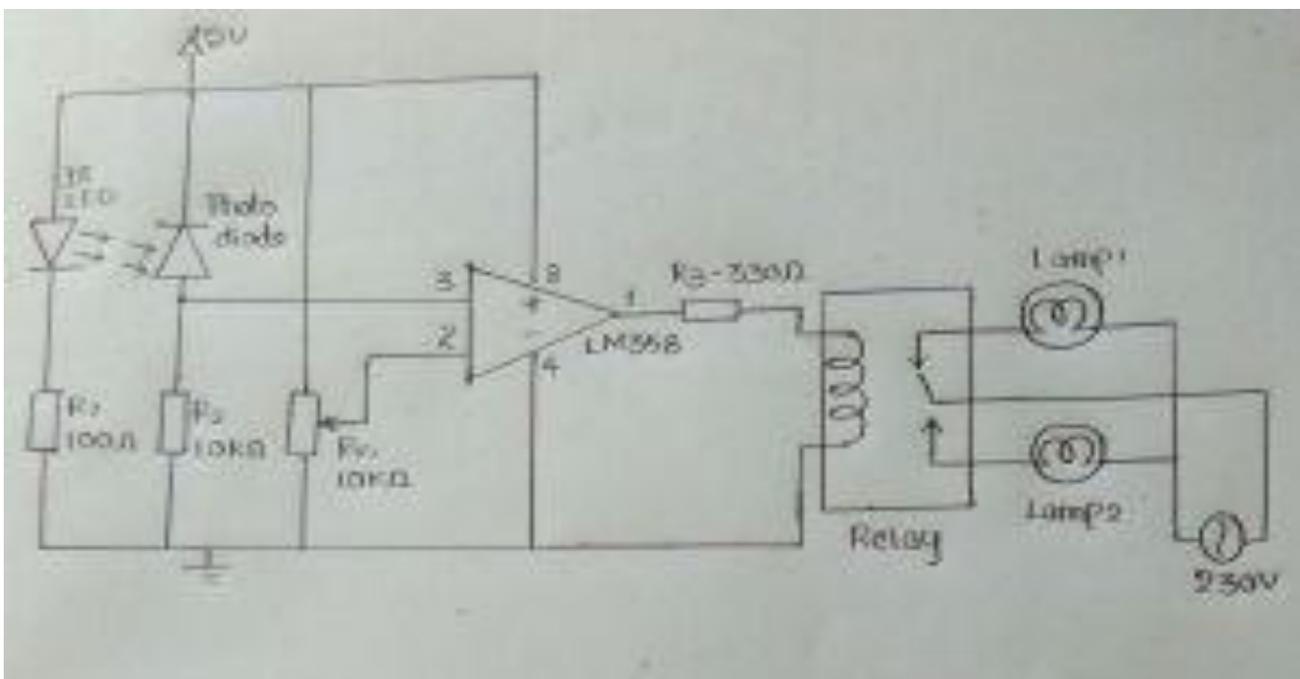
PROJECT IDEA

SECLUSION INDICATOR

Introduction:

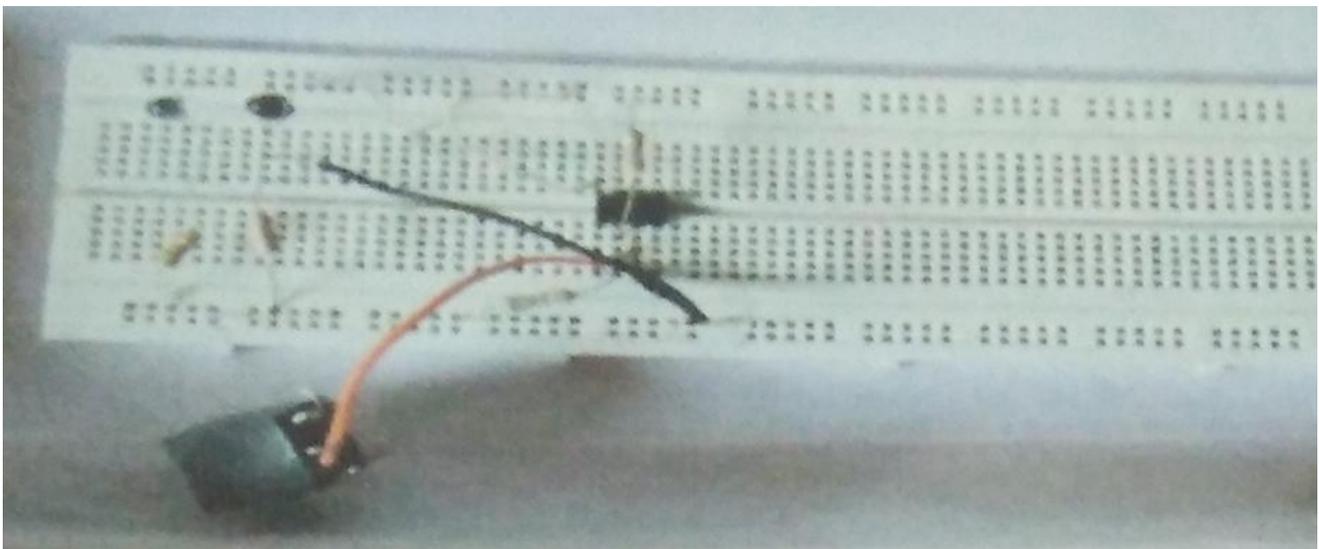
The seclusion indicator is for providing privacy for an employee. Basically it is used in hospitals, educational institutions etc., Here this indicator consists of two indicating bulbs for indicating the status of the employee i.e. whether busy or free. If someone enters the employees' room when he is busy in meeting then disturbance will be occurred so this indicator can hold people coming into the room where there is a meeting going on. Here a sensor circuit is provided which is manually operatable. So this sensor circuit will be on the employees' desk so that he can change his status which will be displayed outside. This circuit will be very useful for minimizing the above stated disturbances. The status can be alternatively changed by the use of a relay. This circuit looks simple and can perform well with less wiring. It is of low cost and can be used in any major business field. It has also a very understandable indication.

Circuit explanation:



In this mainly LM358 is used which acts as comparator. Whenever the potential at the pin3 of IC is greater than the pin2 the IC generates a logic "1" otherwise the IC generates logic"0". Initially the inverting pin2 is at logic "1".The non-inverting pin is connected to sensor circuit. The sensor circuit

is an IR LED transmitter and IR receiver. The IR receiver is connected to supply along with a series resistor. Initially the IR resistance was reverse biased, which offers very high resistance. Whenever the light ray falls on the IR receiver, it gets shorted and the voltage drop across the series resistor increases, this increases a potential at pin3. Thus the output gets a logic "1". That means whenever the light falls on the photodiode, IC generates logic "1". The output was applied to a relay which was operated at 5volts supply, but it produces a sufficient amount of current to relay. The relay here is SPDT relay, the one phase of relay is connected to busy block and another phase was connected to free block. The output blocks will glow alternatively depending upon the relay excitation which was depending upon on IC output and it depends on sensor circuit.



by
K. Mercy
17A85A0405, ECE 2nd year

Peter Pippier picked a peck of pickled peppers. A
peck of pickled peppers Peter Pippier picked. If Peter
Pippier picked a peck of pickled peppers, where are
the pickled peppers Peter Piper picked? ---J Mounika

16A81A04D7

RIDDLES

➤ *Invisible Apple*

There are 20 people in an empty, square room. Each person has full sight of the entire room and everyone in it without turning his head or body, or moving in any way (other than the eyes). Where can you place an apple so that all but one person can see it?

Answer: Place the apple on one person's head.

➤ *Shifting Colors*

What is black when you buy it, red when you use it, and gray when you throw it away?

Answer: Charcoal.

➤ *Leopard's Spot*

Which is the only way a leopard can change his spots?

Answer: By going from one spot to another

➤ *3 digit no.*

I am a three digit number. My tens digit is five more than my ones digit. My hundreds digit is eight less than my tens digit. What number am I?

Answer: Number 194.

➤ *The Paid Artist*

What does the artist like to draw best?

Answer: His salary

➤ *Never Uses Teeth*

What is that which never uses its teeth for eating purposes?

Answer: A comb

by
M. Vani, 16A85A0436, ECE-C

KNOW HOW TOO MUCH OF VITAMIN INTAKE CAN BE TOXIC FOR YOU

Vitamin A is necessary for a healthy body and everyone knows that. It is a powerful antioxidant which is also responsible for building strong bones, supporting immunity, gene regulation, proper vision and even for healthy and beautiful skin. But there is a point after which the scales tip in the wrong direction and this wondrous nutrient starts harming your body.

Sources of vitamin A

Most animal based sources such as dairy products contain retinol and plant based sources such as carrots contain beta-carotene.

Vitamin A toxicity

Toxicity occurs when you have too much Vitamin A in your body. It can cause bone degradation and brittle bones. In pregnant women, high doses of vitamin A can cause birth defects and deformities in the child.

Symptoms

Symptoms of acute vitamin A toxicity can show up as irritability, lethargy, nausea, vomiting and abdominal pain. When your body has been subjected to high doses of vitamin A for a long time, it might show up as pain in bones, poor appetite, nausea, sensitivity to sunlight, mouth ulcers and/or jaundice.

Steps to prevent toxicity

- Never take vitamin A supplements unless prescribed by a doctor.
- Using retinol creams for skin can also cause toxicity if combined with other vitamin A supplements in the diet. The creams have high doses of retinol and it is absorbed through the skin into the bloodstream.
- Do not use vitamin A supplements and creams especially if you are pregnant.
- Smoking and excessive vitamin A intake has been linked to a higher chance of lung cancer, so quit smoking if you are on a high vitamin A diet.



You must have to know how your emotions are harming you

Green Yatra

Anger : Weakens the Liver

Grief : Weakens the Lung

Worry : Weakens the Stomach

Stress : Weakens the Heart and brain

Fear : Weakens the Kidney

Pass from all these and you will be well & Healthy.
So Stay Happy, Healthy & fit!, Think good, Feel good, Do good. Help to needy, Save Mother Nature & Humanity

FACULTY ARTICLE



Go Green! That is the new war cry of everyone from food manufacturers to financial institutions, as more and more people take on the responsibility for preserving our environment. As citizens of the world, each of us is responsible for the health of our planet. Our choices and our actions contribute to the well-being or deterioration of the environment. Yet, it's our earth, the only one we have. If we don't care about the environment, who will? Our natural environment becomes unbalanced and unsustainable when it is polluted and stripped of its natural resources by over-consumption.

**Be mindful of and sensitive
to the natural environment in your daily life.**

Reduce, Reuse, Recycle — Three great ways YOU can eliminate waste and protect your environment! Waste, and how we choose to handle it, affects our world's environment—that's YOUR environment. Dispose of harmful materials properly, re-use or recycle things you no longer need, and place recyclables in proper bins for pick up. For every ton of paper recycled, 17 trees are saved.

Green water?

Water is a naturally and freely available precious resource that we cannot live without. The Go Green Initiative embraces the old saying, "Waste not. Want not." In order to preserve our fresh water, it is important not to waste it or introduce pollutants that cannot be removed.

Green Electronics

- ❖ **Smart Lighting:** It's no longer a question of whether incandescent bulbs will go, but when. Compact Florescent Lights (CFLs) are the future. CFLs cost more but are vastly cheaper over their life span because it takes eight or more incandescent bulbs to match the life span of a CFL.
- ❖ **Electric Cars:** Powered by thousands of Li-Ion batteries, the electric car can do 0 to 60 mph in four seconds, outrunning practically every other production car on the planet.



❖ Plug-In Hybrids: They complement biofuels, such as ethanol and biodiesel, by helping limited supplies of homegrown liquid fuel go further. What's more, since they use the existing grid to power up at night, they'll require little additional infrastructure.

❖ Innovative technologies:

Nanotechnology is already having its impact on products as diverse as novel foods, medical devices, chemical coatings, personal health testing kits, sensors for security systems, water purification units for manned space craft, displays for hand-held computer games, and high-resolution cinema screens. Also in bioconversion (energy) and bioprocessing (food and agriculture) systems, and waste and pollution control systems.

1. InStep NanoPower

An inexpensive and simple high-power energy harvester capable of converting mechanical energy to electrical power.

5 Weird Energy Sources

harvester device concept

Once the user stops for a rest, a cable can be attached to the battery in the shoe to power a device.

How much energy can be generated?
During active walking, each foot is capable of generating 20 watts of energy which is usually lost as heat.

15 WATTS
of energy

can be captured by the InStep Nanopower which is then converted and stored as usable energy.

If half of the adults in the world walked with InStep in both shoes

They would generate the equivalent of

3,080
MEGAWATTS
of power

The InStep NanoPower then allows users to charge common electrical devices, such as smartphones and tablets.

Green Natural sources

❖ Wind Energy: Wind power has become the utility industry's first choice for an environmentally friendly source of power.

❖ Solar Energy: Photovoltaic cells will power solar energy systems. Lowering the cost of converting the sun's photons into electrons will help put solar energy on more roofs.



Green up your life

Educate yourself as much as possible about the environmental issues that concern every earth citizen, and start taking actions that show you care about the environment. Be a role model and leader for others. Each individual contributes to the success of the whole. Go green now!

by
T V N L Aswini
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