



VEDA

Department of E C E

SRI VASAVI ENGINEERING COLLEGE

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UNDER THE AEGIS OF VEDA....

XTRONICS

The Monthly Technical Magazine..



Issue No-II
November 2015

Scientist of the MONTH

Edwin Herbert Land

Name: Edwin Herbert Land

Born: May 7, 1909 in Bridgeport, Connecticut

Died: March 1, 1991

Nationality: American

Edwin Herbert Land, American physicist and inventor, born in Bridgeport, Connecticut. While a freshman at Harvard University in 1926, he became interested in polarized light (light oriented in a plane with respect to the source). Taking a leave of absence, he developed a new kind of polarizer, which he called Polaroid, by aligning and embedding crystals in a plastic sheet. Land returned to Harvard at the age of 19 but left again in his senior year to found a laboratory nearby. Joined by other young scientists, he applied the polarizing principle to light filters, optical devices, and motion picture processes.

In 1937 the group became the Polaroid Corporation with Land as president and head of research. During World War II the corporation turned to military tasks, inventing infrared filters, dark-adaptation goggles, and target finders. In the late 1940s it introduced the first model of its most successful product, the self-developing Polaroid Land camera; it also put out a microscope for viewing living cells in natural color. His contributions include the fields of polarized light, photography and color perception.

J L N S S Mangatayaru, 3rd ECE-A

Solutions

Riddles

1. Stop imagining
2. Tuesday, Thursday, today and tomorrow.
3. Liquid
4. The letter 'm'.
5. Secret.

Aptitude

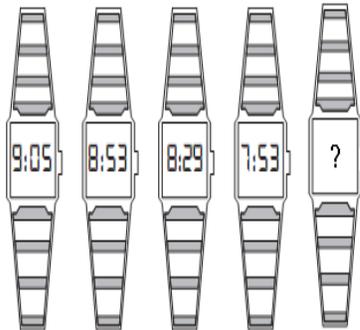
1. **B**
2. **D**
3. **B**
4. **B**
5. **A**

Solutions Puzzles

Which number replaces the question mark?

6	EJI	3
M F K		D P G
9	NRG	?

What time should the last watch show?



1. 12
2. 7.05

Company profile

Company Name: Solectron Corporation

Industry: Electronics manufacturing services

Product design service & sales service

Founded : 1977

Defunct: 2007

Headquarters: Milpitas, California, [United States](#)

Key people: [Paul Tufano](#), [Interim CEO](#)

Products: Consumer Electronics, Routers, Switches, TVs

Revenue: \$ 10.56 billion USD (2006)

Employees: 50,000+

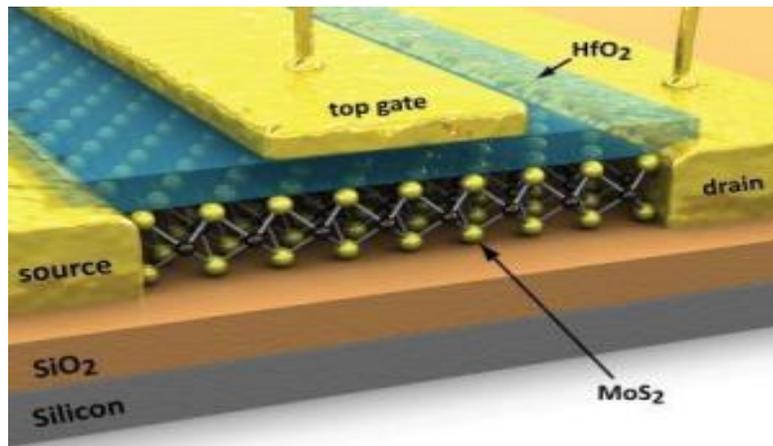
Website : www.solectron.com

A N V Sai Chandu, 4th ECE-A

TECHNICAL ZONE

New Transistors: An Alternative to Silicon & Better than Graphene

Smaller and more energy-efficient electronic chips could be made using molybdenite. In an article appearing online January 30 in the journal Nature Nanotechnology, EPFL's Laboratory of Nanoscale Electronics and Structures (LANES) publishes a study showing that this material has distinct advantages over traditional silicon or graphene for use in electronics applications.



EASY MULTIPLICATION:

Let N1 and N2 be two numbers near to a given base in powers of 10, and D1 and D2 are their respective deviations from the base.

Then $N1 \times N2$ can be represented as

$$\begin{array}{r} N1 \ D1 \ [\text{BASE}] \\ N2 \ D2 \\ \hline \end{array}$$

$$(N1+D2) \ \text{OR} \ (N2+D1) \ / \ (D1 \times D2)$$

For better understanding see an example.

1. Find 97×94 .

Sol:

Here base is 100 (numbers near to a given base in powers of 10 i.e. 100 here)

Deviation of 97 from 100 is -03

Deviation of 94 from 100 is -06

$$97 \ -03 \ [\text{BASE } 100]$$

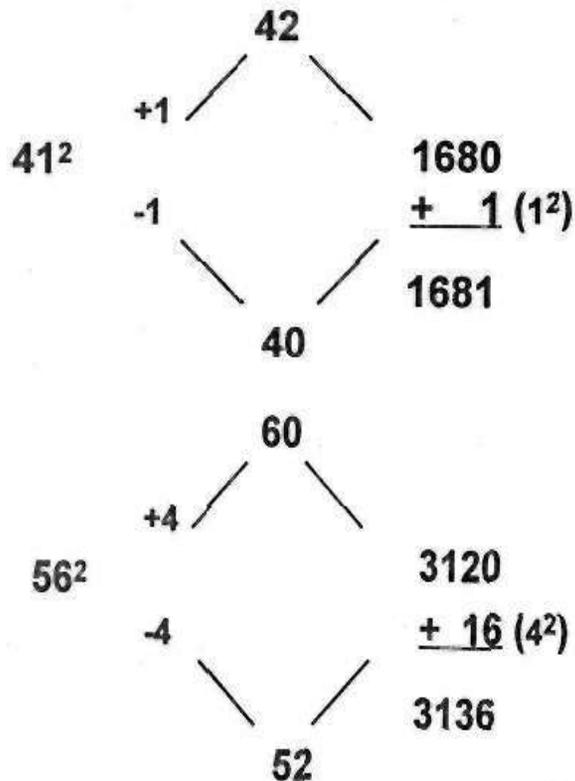
$$94 \ -06$$

$$(97-06) \ \text{or} \ (94-03) \ / \ (3 \times 6) \Rightarrow 91 \ / \ 18$$

Answer is 9118

B D K V V S Sai Lakshmi Srinivas, 4th ECE-B

Simple squaring technique:



To square 41, subtract 1 to obtain 40 and add 1 to obtain 42. Next multiply 40 x 42. This is simply a 2-by-1 multiplication problem (specifically, 4 x 42) in disguise. Since $4 \times 42 = 168$, $40 \times 42 = 1680$. Almost done! All you have to add is the square of 1 (the number by which you went up and down from 41), giving you $1680 + 1 = 1681$. Also you can see calculation of square of 56

discovery made at EPFL could play an important role in electronics, allowing us to make transistors that are smaller and more energy efficient. Research carried out in the Laboratory of Nanoscale Electronics and Structures (LANES) has revealed that molybdenite, or MoS₂, is a very effective semiconductor. This mineral, which is abundant in nature, is often used as an element in steel alloys or as an additive in lubricants. But it had not yet been extensively studied for use in electronics. 100,000 times less energy.

"It's a two-dimensional material, very thin and easy to use in nanotechnology. It has real potential in the fabrication of very small transistors, light-emitting diodes (LEDs) and solar cells," says EPFL Professor Andras Kis, whose LANES colleagues M. Radisavljevic, Prof. Radenovic et M. Brivio worked with him on the study. He compares its advantages with two other materials: silicon, currently the primary component used in electronic and computer chips, and graphene, whose discovery in 2004 earned University of Manchester physicists André Geim and Konstantin Novoselov the 2010 Nobel Prize in Physics. One of molybdenite's advantages is that it is less voluminous than silicon, which is a three-dimensional material

Better than graphene

In solid-state physics, band theory is a way of representing the energy of electrons in a given material. In semiconductors, electron-free spaces exist between these bands, the so-called "band gaps."

M Prathyusha, 3rd ECE-B

Air into Water

Johathan Ritchey has invented the Watermill, which is an atmospheric water generator. It converts air into fresh water.

This latest technology invention produces fresh water at a cost of about 3 cents a liter (1 quart). Originally designed for areas that do not have clean drinking water, the Watermill is for households that prefer an eco-friendly, cost effective alternative to bottled water.

Atmospheric water generators convert air into water when the temperature of the air becomes saturated with enough water vapor that it begins to condense (dew point).

"What is unique about the Watermill is that it has intelligence," says Ritche. This makes the appliance more efficient. It samples the air every 3 minutes to determine the most efficient time to convert the air into water.

It will also tell you when to change the carbon filter and will shut itself off if it cannot make pure clean water.

V Hari Priya, 2nd ECE-B

Aptitude

1. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds. The ratio of their speeds is:

(a.) 1:3 (b.) 3:2 (c.) 3:4 (d.) none

2. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 4.6 m away from the wall. The length of the ladder is:

(a.) 2.3m (b.) 4.6m (c.) 7.8m (d.) 9.2m

3. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day?

(a.) 12 days (b.) 15 days (c.) 16 days (d.) 18 days

4. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?

(a.) 30% (b.) 70% (c.) 100% (d.) 250%

5. Present ages of Sameer and Apsar are in the ratio of 5 : 4 respectively. Three years hence, the ratio of their ages will become 11 : 9 respectively. What is Apsar's present age in years?

(a.) 24 (b.) 27 (c.) 40 (d.) none

E Vasavi, 3rd ECE-C

RIDDLES

- 1) Imagine you are in a sinking rowboat surrounded by sharks. How would you survive?
- 2) Can you name four days which start with the letter "T"?
- 3) Bay of Bengal is in which state
- 4) There is something which comes once in a minute, twice in a moment but strangely never in a thousand years?
- 5) If you have me, you want to share me, if you share me, you haven't got me. What am I?

N Naga Durga, 4th ECE-A

BARCODING IN USE

Some modern applications of barcodes include:

- Almost every item other than fresh produce from a grocery store, department store, and mass merchandiser has a UPC barcode on it. This helps track items and also reduces instances of shoplifting involving price tag swapping, although shoplifters can now print their own barcodes. Barcodes are widely used in shop floor control applications software where employees can scan work orders and track the time spent on a job.
- Retail chain membership cards (issued mostly by grocery stores and specialty "big box" retail stores such as sporting equipment, office supply, or pet stores) use bar codes to uniquely identify a consumer. Retailers can offer customized marketing and greater understanding of individual consumer shopping patterns. At the point of sale, shoppers can get product discounts or special marketing offers through the address or e-mail address provided at registration.
- When used on patient identification, barcodes permit clinical staff to instantly access patient data, including medical history, drug allergies, etc.
- Document Management tools often allow for bar coded sheets to facilitate the separation and indexing of documents that have been imaged in batch scanning applications

- The tracking of item movement, including rental cars, airline luggage, nuclear waste, registered mail, express mail and parcels.
- Tracking the organization of species in biology. The barcode assigned is based on the CO1 gene.
- Since 2005, airlines use an IATA-standard 2D barcode on boarding passes (BCBP), and since 2008 2D barcodes sent to mobile phones enable electronic boarding passes.
- ISBN is a standard for labeling books and periodicals that uses the EAN-13 symbology.
- Recently, researchers placed tiny barcodes on individual bees to track the insects' mating habits.
- Bar coded entertainment event tickets allow the holder to enter sports arenas, cinemas, theatres, fairgrounds, transportation, etc. This can allow the proprietor to identify duplicate or fraudulent tickets more easily.
- They can track the arrival and departure of vehicles from rental facilities.
- Barcodes can integrate with in-motion check weighers to identify the item being weighed in a conveyor line for data collection.
- Some 2D barcodes embed a hyperlink to a web page. A capable cell phone might be used to read the barcode and browse the linked website, which can help a shopper find the best price for an item in the vicinity

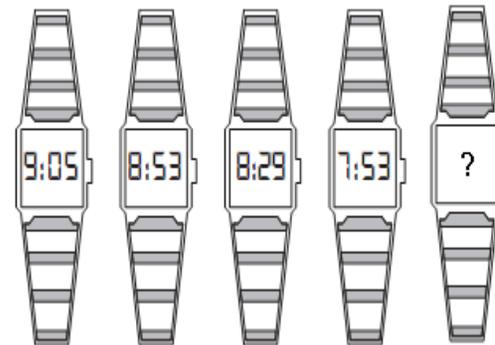
K Chamanthi, 2nd ECE-A

Puzzles

Which number replaces the question mark?

6	EJI	3
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9	NRG	?

What time should the last watch show?



M Sravani, 2nd ECE-C