



*VEDA*

**Department of E C E**

SRI VASAVI ENGINEERING COLLEGE

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UNDER THE AEGIS OF VEDA....

# XTRONICS

*The Monthly Technical Magazine..*



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## Scientist of the MONTH

### John Bardeen

<b>Born</b>	May 23, 1908 <a href="#">Madison, Wisconsin</a> , U.S.
<b>Died</b>	January 30, 1991 (aged 82) <a href="#">Boston, Massachusetts</a> , U.S.
<b>Residence</b>	United States
<b>Nationality</b>	American
<b>Fields</b>	<a href="#">Physics</a>
<b>Institutions</b>	<a href="#">Bell Telephone Laboratories</a> <a href="#">University of Illinois</a>
<b><u>Alma mater</u></b>	<a href="#">University of Wisconsin–Madison</a> <a href="#">Princeton University</a>
<b><u>Doctoral advisor</u></b>	<a href="#">Eugene Wigner</a>
<b>Doctoral students</b>	<a href="#">John Robert Schrieffer</a> <a href="#">Nick Holonyak</a>
<b>Known for</b>	<a href="#">Transistor</a> <a href="#">BCS theory</a> <a href="#">Superconductivity</a>
<b>Notable awards</b>	<a href="#">Nobel Prize in Physics</a> (1956) Nobel Prize in Physics (1972)
<b>Spouse</b>	Jane (1907–1997)

Bardeen was also an important adviser to Xerox Corporation. Though quiet by nature, he took the uncharacteristic step of urging Xerox executives to keep their California research center, Xerox PARC, afloat when the parent company was suspicious that its research center would amount to little.

*M Jhansi Rani, 4<sup>th</sup> ECE-A*

## Solutions Riddles

1. Are you asleep? (or dead).
2. Footsteps.  
wheat  
heat  
eat  
tea
4. She took a photo of him and developed it in the dark room.
5. The horse's name is Friday

## Aptitude

1. D
2. B
3. C
4. B

## Solutions Puzzles

1. 6
2. 98
3.  $888+88+8+8+8$
4. GREAT JOB YOU GOT IT
5. Letter 'e'
6. MINIMUM
7. TUESDAY
8. Men-5, children-10, women-20
9. 16 years
10. 27

## Company profile

### Hitachi

**Type** Public kabushikigaisha ("stock company")

**Traded as** TYO: 6501

**Industry** Conglomerate

**Founded** 1910 in Hitachi, Ibaraki, Japan

**Founder(s)** Namihei Odaira

**Headquarters** Chiyoda, Tokyo, Japan

**Area served** Worldwide

**Key people**

- Takashi Kawamura (Chairman)
- Hiroaki Nakanishi (President)

### Products

- Electronics
- Industrial machinery
- Telecommunications equipment
- Power plants
- Information systems
- Automotive components
- Materials
- Construction equipment

### Services

- Consulting
- Financial services

**Revenue** 2012: ¥9.665 trillion[1]

**Website** [www.hitachi.com](http://www.hitachi.com)

*A Mounika Sri Harini, 3<sup>rd</sup> ECE-C*

## Technical Zone

### Automating oscilloscopes: how to save time and make better measurements



Oscilloscope measurement automation has become imperative for timely and accurate debug and validation. In many cases, the number and complexity of tests demanded by a technology standard or application prohibit any attempt at manual measurements. For example, the Display Port compliance tests require measurements! An automated oscilloscope can complete these measurements in a few hours, where manual measurement will require multiple man days.

The benefits of automating commonplace and mission critical oscilloscope measurements are compelling.

## MATHS TRICKS:

I. Multiplication of 11 with any number of 3 digits. (You can't use this rule for other numbers)

Consider the following examples

$$1. 352 * 11 = 3 \text{---} (3+5) \text{---} (5+2) \text{---} 2 = 3872$$

Means insert the sum of first and second digits, then sum of second and third digits between the two terminal digits of the number

$$2. 213 * 11 = 2 \text{---} (2+1) \text{---} (1+3) \text{---} 3 = 2343$$

II. Square of a 2 digit number ending with 5 (You can't use this rule for other numbers)

Consider the following example

$$1. 35^2 = 3 * (3+1) \text{---} 25 = 1225$$

$$2. 95^2 = 9 * (9+1) \text{---} 25 = 9025$$

**Department of E C E**

## Excellent Factronics

- $111,111,111 \times 111,111,111 = 12,345,678,987,654,321$
- TYPEWRITER is the longest word that can be made using the letters only on one row of the keyboard.
- Wearing headphones for just an hour will increase the bacteria in your ear by 700 times.
- RHYTHM is a six letter word which has no vowel.
- The longest regularly formed English word is Praetertranssubstantiativistically which contains 37 letters.
- Octopus have three hearts.
- 250 people have fallen off the Leaning Tower of Pisa.
- The word "queue" is the only word in the English language that is still pronounced the same way when the last four letters are removed.
- "Almost" is the longest word in the English language with all the letters in alphabetical order.
- More people are killed each year from bees than from snakes.
- It is impossible to sneeze with your eyes open. The typewriter was invented by Hungarian immigrant 'QwertYuiop', who left his "signature" on the keyboard.
- Men's shirts have the buttons on the right, but women's shirts have the buttons on the left.

*N Padma Sree Sharanya, 4<sup>th</sup> ECE-B*

- Save time. An automated measurement system will make the same measurements faster, so you get test results sooner, shorten test cycles and get to market faster.
- Save test and engineering resources. Let your scope do the work, freeing test and engineering resources for other challenges.
- Make better measurements. Remove user error and get better greater measurement consistency.

The benefits of automation are compelling, but the myriad options, programming expertise and upfront investment are often difficult barriers to overcome.

### Automation options

Starting with a simplified view, oscilloscope automation can be divided into two primary categories, based on the choice for the centre of automation: external controller based; or oscilloscope based automation.

The difference between these two set ups is illustrated in Fig 1. External controller based automation is the traditional set up, where a central computer controls all instruments in the automated measurement environment. Here, the scope is just another instrument and measurements are made based on the instructions issued by the central controller. There are many choices available for automating oscilloscopes in this way. Common choices range from programming languages such as C/C++/C# and Python, graphical programming environments like National Instrument's LabVIEW and Agilent's VEE, and The MathWork's MATLAB.

*B Keerthi, 2<sup>nd</sup> ECE-A*

## A CELL JAMMER

A cell jammer, or cell phone blocker, is an invention that interferes with the radio waves used by cell phones.

This interference will block cell phone calls because it disrupts the transmission between a cell phone and a service network's cellular towers.

A "jammed" phone can't connect and will simply indicate no service to the user.

### How It Works

Get a 9-volt battery and a quarter. Find an AM/FM radio and adjust the tuning dial until you get only static.

While holding the battery close to the antenna, tap your quarter across the two terminals. You will hear the tapping on the radio.

The battery/quarter is actually a wireless transmitter. It's not very powerful and it can't block your radio reception but if it was more powerful you could interfere with radio waves over a wider range. That's how a cell phone signal blocker works.

The physicist James Maxwell predicted the existence of radio waves in the 1860's, and in 1886, the physicist Heinrich Hertz demonstrated that rapid variations of electric current would project radio waves through space.

It was this discovery that eventually led to numerous wireless communication inventions (radio, television, remote controls, satellites, cell phones etc.)

These devices work within specific frequencies which are regulated by governments. A frequency is the number of waves that pass through a given point per second (cycles per second).

## Aptitude

1.3 pumps, working 8 hours a day, can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?

A.9 B.10 C.11 D.12

2. Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produce in 4 minutes?

A.648 B.1800 C.2700 D.10800

3. A fort had provision of food for 150 men for 45 days. After 10 days, 25 men left the fort. The number of days for which the remaining food will last, is:

A.29 B.37 C.42 D.54  
5 4

4. 39 persons can repair a road in 12 days, working 5 hours a day. In how many days will 30 persons, working 6 hours a day, complete the work?

A.10 B.13 C.14 D.15

*M Rohitha, 2<sup>nd</sup> ECE-C*

## RIDDLES

1. What question can you never honestly answer yes to?
2. The more you take, the more you leave behind.
3. I am a word of 5 letters and people eat me. If you remove the first letter I become a form of energy. Remove the first two and I'm needed to live. Scramble the last 3 and you can drink me. What am I?
4. A woman shoots her husband, then holds him under water for five minutes. Finally, she hangs him. Five minutes later they enjoy a wonderful dinner together. How can this be?
5. A cowboy rides into town on Friday, stays for three days and leaves on Friday. How did he do it?

*K Aruna, 2<sup>nd</sup> ECE-B*



It was this discovery that eventually led to numerous wireless communication inventions (radio, television, remote controls, satellites, cell phones etc.) These devices work within specific frequencies which are regulated by governments. A frequency is the number of waves that pass through a given point per second (cycles per second).

These cycles are called Hertz (Hz) named after Hertz. If a device has a frequency of 100 Hz, it means that 100 waves are passing through a given point in one second.

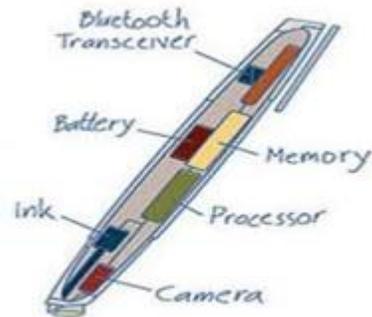
Radio wave frequencies range as low as 3 Hz to as high as 1 Gigahertz.

Aircraft communicate in frequencies between 30 to 300 Mhz. Submarines communicate in frequencies between 3 to 30 Hz.

*K Yaswitha Ramya, 3<sup>rd</sup> ECE-B*

## Digital pen.

A digital pen is an input device which captures the handwriting or brush strokes of a user, converts handwritten analog information created using "pen and paper" into digital data, enabling the data to be utilized in various applications. For example, the writing data can be digitized and uploaded to a computer and displayed on its monitor. The data can then be interpreted by handwriting software (OCR) and used in different applications or just as graphics. A digital pen is generally larger and has more features than a stylus. Digital pens typically contain internal electronics, and have features such as touch sensitivity, input buttons, memory, writing data transmission capabilities, and electronic erasers.



*I Sindhuja, 4<sup>th</sup> ECE-B*

## Puzzles

1. If two painters can complete two rooms in two hours, how many painters would it take to do 18 rooms in 6 hours?

$$2.2+3=8$$

$$3+7=27$$

$$4+5=32$$

$$5+8=60$$

$$6+7=72$$

$$7+8=?$$

3. Using eight eights and addition only, can you make it 1000?

4. What to do the message it gives?

GTYORJOTEUIABGT

5. It happens once in a minute, twice in a week, once in a year and never in a day, what is it?

6. Using the four letters below only, create a seven letter word.

UNMI

7. SUNDAY, MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY. What day

comes three days after the day which comes two days after the day which comes immediately after the day which comes two days after MONDAY?

8. In a party of 35 people, there are twice as many women as children and twice as many children as men. How many each of there?

*K Radha Chaitanya, 3<sup>rd</sup> ECE-A*