

SEPTEMBER 2020

BIOTECH MAGAZINE

Inspiring Young Minds

By SRISHTI – BT FORUM

Vision:

To be a best institution imparting quality engineering education to deal with community needs through learning and performance.

Mission:

- To implement path breaking student centric education methods.
- To augment talent, nurture teamwork to transform to develop individual as responsible citizen.
- To educate the students and faculties about entrepreneurship to meet vibrant requirements of the society.
- Strengthen Industry-Institute Interaction for knowledge sharing.

Sri G. Dayanand [Chairman]

The “ANVESHANA – inspiring young minds” newsletter of the department of BIOTECHNOLOGY is providing great space for the students and faculty to pen down their innovative ideas, imagination and perceptions to show case creativity. So, I take the opportunity to congratulate the Department of BIOTECHNOLOGY and its editorial team to successful release of this issue. I am sure that students and faculty will find the content of this edition very interesting and educating.



Sri G.D. Manoj [Executive Director]

I am indeed happy to share that department of BIOTECHNOLOGY is having its monthly newsletter “ANVESHANA – inspiring young minds” from 2012. I personally urge all faculty members and students of the department to make use of the platform to share and educate among themselves in publishing article pertaining to the emerging domain and interesting facts. I congratulate the team of Biotechnology editorial committee.



Dr. H Ramakrishna [Principal]

It gives me immense pleasure to note that, SCE has been publishing bi-annual newsletter and I am sure, this will provide an opportunity for the faculty and students to share their knowledge and beacon the information about various issues and activities that are being taking place in the department. I look forward for more activities and achievements for the department to march towards excellence in the future. I would like to thank all teaching, supporting staff and our beloved students for their active participation in publishing this magazine. My special compliments and congratulation to the editorial team of the department for their consistent effort in publishing this newsletter.



Dr Veena S More [HOD]

It is immensely gratifying to note that our students and faculty members have created a platform to express their scientific and artistic talents through the newsletter “ANVESHANA – inspiring young minds”. This type of newsletters are very much necessary for an educational institution to keep pace with the latest trends and to promote creative thinking and innovative abilities of students. The combination of experienced staff and enthusiastic students will take this newsletter to the new heights. On this occasion, I would like to place a special word of appreciation for my dear students and the staff whose untiring efforts have made it possible to bring out this informative newsletter and wish them good luck.



TECHNOLOGY THAT KNOWS WHAT YOU ARE FEELING.

Devices that can perform voice recognition (such as Google’s Alexa, Amazon’s Echo) could detect diseases such as Parkinson’s, Alzheimer’s 10 years prior to the onset of the symptoms just by detecting variation in voice such as pitch and tremor. It could also detect myocardial infarction in time and also tell if a lady is pregnant as hormone levels in our body changes during these conditions which leads to changes in our voice which can be detected by the device and analysed if we let them to.

Now knowing that these innovations can enable machines to literally get to know our feelings might leave us feeling insecure of not keeping our emotions to ourselves and making us feel breached of our privacy(or staying in incognito mode on our emotions).

But this doesn’t mean that the machines could rip out all the emotions from us but only sacrifice of a little privacy is worth for large advantages

- Teachers could understand what’s wrong with a cheerful appearing student and help them accordingly
 - An artist could understand whether their piece of work was fruitful to initiate an intended emotion in audience .
 - Psychologist could use methods to understand what emotion a patient is undergoing , could detect depression easily and treat and counsel them accordingly.
 - We can hope to go body fluid loss free on diagnosis of myocardial infarction and pregnancy.
 - These innovations can be used in solving crisis to detect whether a person is truthful or not and can help in solving crimes.
 - The AI could be trained detect fibroids, tumours from normal camera inputs
- These things can be possible in near future only if we left the machines to.

**-Ananya Nayak,
5th sem (Reference
Courtesy:- Ted talks,
Speaker –Poppy
Drum.)**



Living organisms big and small ought to have emotional responses to its external stimulations. These responses are easily detectable in insects, animals and plants (like the defensive response in spiders when it hears a high pitch voice assuming that to be the sound of bat)

While we humans, complex beings can choose to mask some of our inner most emotions by not letting those come on to our face as expressions which we call as “poker face”.

Technology today through cameras can detect our minute

of micro expressions and can detect how we feel, like it can differentiate between a fake and a real smile. While we can control our emotions getting converted into facial expressions but change in diameter of pupils is a involuntary response to external stimulus.

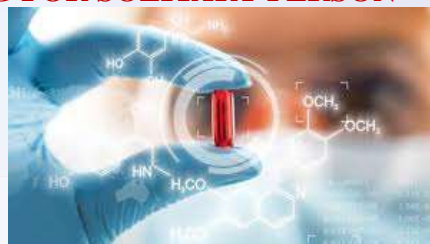
Thermal photography which is used to view heat distribution in a body can be used to study what sort of emotion a human is undergoing regardless of their facial expressions. To state an example our body becomes hot when we are angry and shows up in orange combination of colours in thermal images while for a person in depression temperature can come down making the body cold and thus show up in blue and black colours in thermal images {results based on normal healthy people under standard room temperature}

The chemical compositions in our breath is a dynamic mixture

of acetone, isoprene and CO₂ which changes when our heart speeds up and our muscles tense, hence giving insights into our feelings and obviously without any behavioural changes. In one of the studies sample population in an auditorium was shown a video of a horror scene without being priorly informed. The density of CO₂ was recorded throughout the experiment. The density of CO₂ went up as a scary scene showed up on screen. The same population was again shown the same video with change in audio effects (cheerful sounds) showed no change in CO₂ density.

PHARMACOGENOMICS - A MILESTONE :NOVEL DRUG FOR SOLITARY PERSON

Pharmacogenomics is a field focussed in understanding genetic contribution to variability in drug efficacy and toxicity. “Personalized medicine” is slowly on its path to existence based on individual’s genetic makeup as pharmacogenomics to the clinical laboratory. Amalgamation of pharmacogenomics into medicinal practice in drug designing has the consequence of enhancing the treatment, thus minimizing the risk of depression and death. Physiological conditions, environmental impact, gene silencing, genetic variation such as Single Nucleotide Polymorphism (SNP) and Copy Number Variation (CNV) are the factors responsible for it. Pharmacogenomics is applicable to many medicinal fields like Pain management, Oncology, Cardiology, Psychiatry and Depression. The Food and Drug Administration (FDA), U.S has funded in the field of pharmacogenomics and has sanctioned pharmacogenomic biomarkers for treating diseases. Even though the metabolic pathways of drugs are identified, only a part of scientific data is known to authorize their use of medical care



One of the Controversies was in the sector of Bioethics, which created a dilemma for genetic testing. PharmVar, SuperCYP Bioinformatics Tool, PharmGKB, FINDbase, Pharmacogenomics Biomarkers in Drug Labelling are some of the Web Sources for Pharmacogenomics. Recent developments in this field are – Interaction of drug with its receptor, absorption of drugs and expulsion of drugs. One emerging field of today is Pharmacometabonomics that brings about association between predose profile and post drug responses and is the key platform for personalized drugs for human beings.

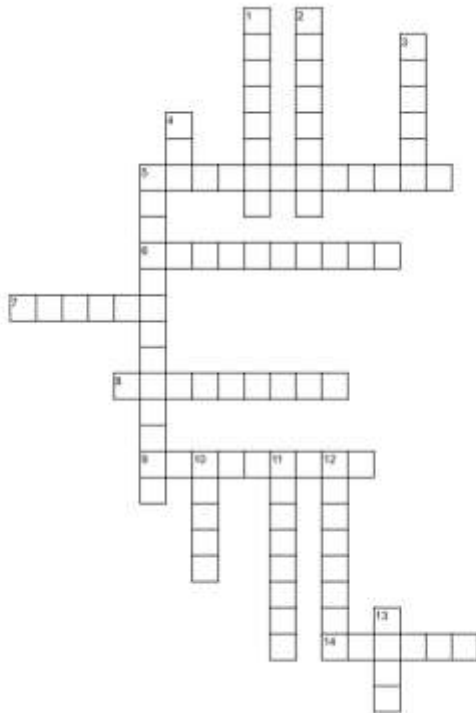
Article by – Charishma C. Gowda, VIII Sem, BT

Live the dream!

everything happens for a reason!

Luck and fate are the same thing, it just depends on how you look at life!

BIO-CROSSWORD

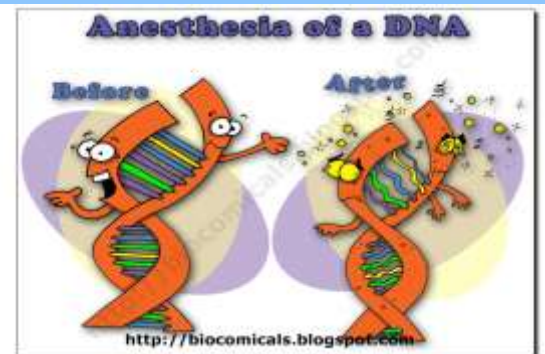


Down

- 1 Bacteria grows in groups called, _____
- 2 Also known as a 'germ'
- 3 Viruses are not _____ nor are they cellular
- 4 Bacteria contains unique _____
- 5 Bacteria reproduce by _____
- 10 The viruses _____ are incorporated into the host cell's genes once infected
- 11 Viruses can remain _____ for long periods of time
- 12 Viruses are the smallest of all _____
- 13 Fungi cannot move or eat on their own they rely on a _____ to do this

Across

- 5 The study of bacteria is called, _____
- 6 Fungi is most beneficial uses of fungi came with the discovery of _____ penicillin
- 7 Viruses don't need _____ or food to live
- 8 Fungi can reproduce sexually and _____
- 9 Fungi can be single celled or multicellular _____
- 14 Fungi's dormant reproductive cells that wait for the right conditions and then aid in either sexual or asexual reproduction



Crack the case.....

A couple went on for their honeymoon trip. But on- ly the husband returned from the vacation and said that his wife met an unfortunate accident and died. The police arrested him saying, "Your travel agent called. You murdered your wife."

How did the agent know that it was a murder?

"There are two great days in a person's life - the day we are born and the day we discover why...."

Note: Answers to riddles and crossword will be published in next edition

Tickle your brain...!!!

1. Look at the series: 36,34,30,28,24...what number should come next ?
A.20 B. 22 C. 23 D. 26
2. In these series, you will be looking at both the letter pattern and the number pattern. Fill the blank in the middle of the series or end of the series.

SCD, TEF, UGH, _____, WKL

A.CMN B. UJI C. VIJ D. IJT

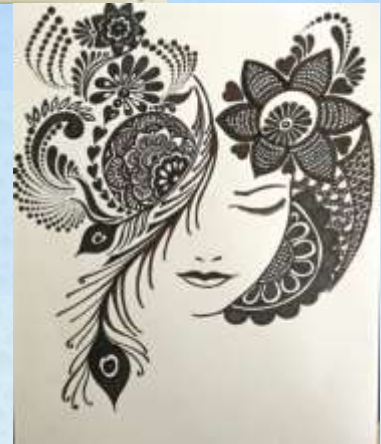
TALENT GALLERIA



BY SAHANA N M(7th Sem BT)



ART BY VIBHA B(7th Sem BT)



ART WORK BY SAHANA R (7th Sem BT)

Poetess of the department

When we are a kid we look at the lush green trees around us and we are full of energy.....

When we are a teenager we look at the size of the tree but not the leaves covered all over.....

When we are at our youth we look at the blossoming flowers and we are carried away by beauty of nature...

When we are an adult v look at the shattering trees with void branches and we are just waiting to reach the end..

When we are in our old age we are in search of the roots to reach down below and go back into our MOTHER EARTH's WOMB to have a deep sleep forever.

- Sindhoora B Rao(7th sem BT)