



The Editorial Board

-Beckoning Creati'wit'y

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SEPTEMBER 2018 VOLUME 10. ISSUE 2

TRESIA

Augmenting Cognizance

TETE-A-TETE

WITH

Dr. P. K. Mishra

Professor and ex-head at
Chemical Engineering
Department, IIT-BHU



Message from The Editorial Board



Faculty Advisor

Dr. S.N. Singh

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Departing summer has assumed, an aspect tenderly illumed. Now barbarous in the beauty, the stooks arise, the wind walks and the rain floats in gentle waves, as if gravity is a soft music arising from the earth's crust. Together they paint a new picture around a glowing street lamp. As the draining summer faded away and the soothing rain made its way, the Malaviyans became attuned to the new beginning.

With the commencement of the month, the entire country was deeply shocked with the sad demise of the former prime minister of India Shri Atal Bihari Vajpayee, who stood as a towering figure for democratic values.

On the auspicious occasion of Teachers' Day, Malaviyans embraced pride, dipped in patriotism, flew in glory and celebrated the moments of freedom in tricolour shades of joy. The month also commemorated the unconditional and the unadulterated siblings' eternal bond of love.

Last month witnessed events like HEATS and R.C. Aircraft modelling workshop.

On **September 5, 2018** students enthusiastically celebrated Teachers' Day and paid tribute to Dr. Sarvapalli Radhakrishnan. During the month of September itself, Malaviyan Ace was successfully conducted. Freshmen also participated in various technical and cultural events.

When your efforts at bolstering and mastering perfection pale into insignificance, in the context of bliss balance at the confluence of confidence and circumstance where once providence propelled, you achieve optimal outcomes. Therefore believe in yourself, take on challenges, and fathom their depth.

With these warm wishes and hopes of a miraculous year ahead, **The Editorial Board** presents the September issue of **Tiresia**.



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Message from our Faculty Advisor

First of all, I would like to mention that in September, the major teaching and learning related activity is Teachers' Day and that makes the campus vibrant and provides us with an opportunity to remember the bonding of the teacher and the taught. In the journey from innocence to excellence, the teacher is a life shaper and maker. Therefore, we can't see them in isolation. As the maker and shaper of the destiny, a teacher aspires and dreams as to how can he mould the shape of a student. Education is a man making industry. In this industry, there is a least scope for terming anyone as 'trash'. In computer science, even a new product can be termed as trash but we cannot ever dare to call a person trash. It has always been a challenge for a teacher to build wisely and for the student to trust and increase the bond between him and his teacher. This gap should be bridged up and what I feel is that there is a need that the teacher and the taught should come closer to make India a developed na-



tion. I wish to quote A. P. J. Abdul Kalam, as he said in "Vision India 2020" that youth is the most powerful resource on this earth, under the ocean and in the sky. Recalling him, it is our duty to give our youth a proper shape and make it a national asset and transform the nation from a developing to a developed one.

With best wishes,
Faculty Advisor
Dr. Sudhir Narayan Singh
Associate Professor (English)
Applied Science Department

Tête-à-tête

WITH

Dr. P. K. Mishra

Dr. P. K. Mishra is a professor and ex-head at Chemical Engineering Department and Coordinator at Malviya Centre for Innovation, Incubation and Entrepreneurship in IIT-BHU, Varanasi. Dr. Mishra has more than 143 research items and 440 citations to his name.

The Editorial Board got a chance to interact with him while he was in MMMUT to address a seminar.



1. Describe your student life?

Student life has always been a pleasant experience. Though it had its ups and downs, but this life taught me how to stay strong and hone up my skills for my future. Hostel life was a very good experience, because ultimately that's the place, where I made memories for a lifetime. Ultimately, I attained immense pleasure and gathered some invaluable experience as a student, the importance of which is consequential at later stages of life.

2. What inspired you to reach this stage of life?

My parents inspired me to reach this stage of my life. Their hard work for shaping my future inspired me to work hard and fulfill

the dreams they saw for me. My teachers were also a great source of inspiration for me. They helped me at different stages of my learning. They solved my doubts and led me to clarity about my future.

3. How difficult according to you is the transition from college life to the corporate world?

It was not a challenge, actually it was a beautiful flow which gave me an opportunity to experiment. I joined masters, changed many jobs and consultancies and none of them were challenging. After which I joined a profession which is considered as one of the most monotonous and challenging jobs, that is teaching. Teaching is a very important job, because

a good teacher can shape the future of many students. On the other hand an entrepreneur plays a very important role in shaping the life of many young minds by employing them.

4. What qualities do you try to inculcate in a student?

A student should grab all the opportunities and do everything in life. Along with the studies a student should learn to efficiently manage the extra-curricular activities. These activities shape the personality of a student and develop the soft skills in them. The student should learn to make his concepts clear and study for the betterment of the society and country. Student life teaches a lot of skills which are very helpful in the future endeavors of life.

5. Do you think 75% attendance should be compulsory in colleges?

Yes. There are many important aspects of classroom teaching that cannot be replaced. Students nowadays don't realize the importance of classroom teaching. They assume that online medium of teaching can replace the classroom teaching. What they fail to realize is that the interaction between students and professors is very important. It teaches a lot of points that the online medium of teaching cannot cover.

6. How would you like to motivate today's students to achieve their goal?

Be the change you want to see in others. One should follow the path one decides. Change your angle of observations. Every bad experience has something good hidden in it. Learn to do experimental observations. The trait of your education should make paths not only for you, but for others as well.

7. Given you could do it all over again, what would you do differently?

Abdul Kalam once said, "Sometimes, it's better to bunk a class and enjoy with friends, because now, marks never make me laugh, but memories do." I want to enjoy my college life and do that all over again. I still remember the antics in the lecture, gossips in the labs, collective commiserations during the exams, long walks in the campus, the trips and all those ideas and startups and podcasts and what not that we so casually discussed and planned but never materialized.

8. How do you manage your busy schedule in such an easy way?

It's the skill that one learns with practice. We all have the same 24 hours. The difference lies in how we utilize the time and grow. I usually wake up early and follow a proper schedule. It helps me in keeping a proper check to the daily activities. The more one utilizes time efficiently, maintains a proper schedule, and follows a proper channel, the more one learns this art.

Campus Buzz

- **Cultural Synod** conducted 'Heats' from September 1, 2018 to September 2, 2018.
- An '**RC Aircraft Workshop**' was organised by **SAE Collegiate Club** from September 1, 2018 to September 4, 2018.
- **The Editorial Board** conducted '**Malaviyan Ace '18**' on September 9, 2018.
- An '**Ethical Hacking Workshop**' was conducted by **IEEE** on September 14, 2018 and September 15, 2018.
- **The Editorial Board** conducted '**Vaagmita '18**' from September 14, 2018 to September 19, 2018.
- **CES** successfully conducted the '**Game of Codes-Chapter 1**' on September 18, 2018.
- A **seminar** was addressed by Prof. P. K. Mishra (ex-head, Chemical Engineering Department, IIT-BHU) on September 15, 2018 describing the challenges and scope of Chemical Engineering.
- The Hon'ble Vice Chancellor of **MMMUT** was appointed as the Spokesperson of the **Industry Application Society (IAS)**.
- **MMMUT** observed **Surgical Strike Day** on September 29, 2018 as per the directions of Ministry of HRD.
- **Gandhi Jayanti** and **Lal Bahadur Shastri Jayanti** was celebrated on October 2, 2018 in the University and a cleanliness drive was organised by **NSS** on this occasion.
- The winners of '**Swaccha Bharat Summer Internship Programme**' were felicitated by the Hon'ble Vice Chancellor on October 2, 2018.
- '**Android Development Workshop**' was conducted by **IEEE** on October 6, 2018 and October 7, 2018.
- '**Pravaah**', an intellectual patent workshop, was organised by **University Innovation Cell** on October 6, 2018 and October 7, 2018.

TECH INSIGHTS

Mail your answers at
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CHEMICAL ENGINEERING:

Water at a gauge pressure of 3.8 atm at street level flows into an office building at a speed of 0.06 m/s through a pipe 5.0 cm in diameter. The pipes taper down to 2.6 cm in diameter by the top floor, 20 m above. Calculate the flow velocity and the gauge pressure in such a pipe on the top floor. Assume no branch pipe and ignore viscosity.

CIVIL ENGINEERING:

A vertical column 9 m high is fixed at the base and a counter-clockwise moment of 2.1 kNm is applied at the top of the column. A horizontal force P is applied to the column at a height of 4.5 m above the base so as to give a counter-clockwise moment. Determine the value of P so that the horizontal deflections at the top of the column and the point of application of P shall be equal when the deflection are on opposite sides of the vertical line through the foot of the column.

COMPUTER SCIENCE AND ENGINEERING:

What would be the output of the following C program?

```
#include <stdio.h>
struct student
{
    char *c;
};
void main()
{
    struct student s[2];
    printf("%d", sizeof(s));
}
```

ELECTRICAL ENGINEERING:

An electrodynamic wattmeter is used for measurement of power in a single phase circuit. The load voltage is 100 volt and the load current is 9A at a lagging power factor of 0.1. The wattmeter voltage circuit has a resistance of 3 k Ω and an inductance of 30mH. Estimate the percentage error in the wattmeter reading when the pressure coil is connected

- on the supply side
- on the load side

(Current coil has resistance of 0.1 Ω .)

ELECTRONICS AND COMMUNICATION ENGINEERING:

Calculate the capacitance of a circular MOS capacitor of 0.5 mm diameter and having an SiO₂ layer of 80 nm thickness under strong accumulation. Assume the relative dielectric constant of SiO₂, $\epsilon_r = 4$ and $\epsilon_0 = 8.854 \times 10^{-14}$ F/cm. Calculate the breakdown voltage of the capacitor if the dielectric strength of SiO₂ film is 107 V/cm.

MECHANICAL ENGINEERING:

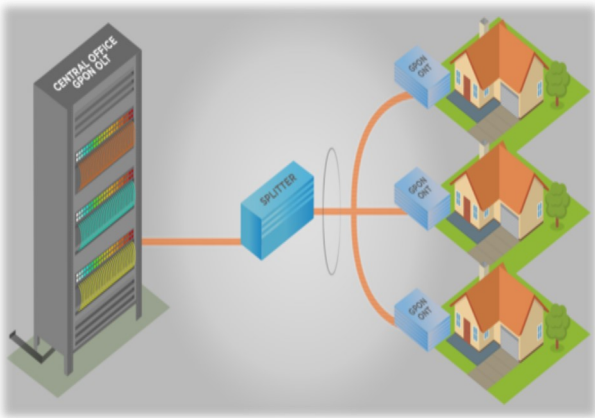
Maximum shear stress developed on the surface of a solid circular shaft under pure torsion is 240 MPa. If the shaft diameter is doubled then what will be the maximum shear stress developed corresponding to the same torque?

The winners of techINSIGHTS section of Tiresia Volume 10. Issue 1 are:

- Yash Kumar Jaiswal-B.Tech (CSE), Third Year
 - Monit Gupta-B.Tech (ECE), Second Year
 - Pranav Tripathi-B.Tech (EE), Final Year
- Rest of the answers were unsatisfactory.

Fiber To The Home (FTTH)

Gone are the days when India had fast internet access in only metros and established internet users included only business houses and the elite rich class. After data revolution in the field of mobile data, Indian telecom operators now queue to fight for the fibre internet market. Major telecom operators are all set to provide FTTH service to internet users across the country.



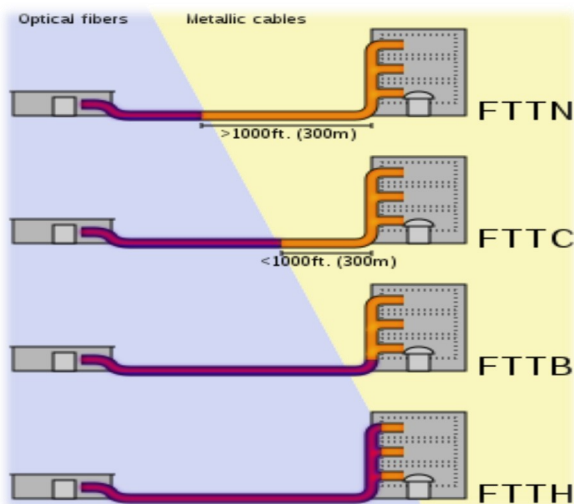
There are two types of FTTH architecture categories namely Active Optical Network (AON) and Passive Optical Network (PON). According to the fibre Optic Association, Active Optical Networks are the easiest way to connect homes with fibre, because fibre connects homes to the ISP. But, although it provides the maximum amount of bandwidth, it tends to be expensive because it requires every home to have a dedicated fibre. On the other hand, Passive

Optical Networks make it possible to share expensive fibre components due to the use of splitters, which divides an input and allows to broadcast services to several homes.

Fibre to the home (FTTH) is a technology that uses optical fibre cable for data transfer directly from central points of the network to terminal usage points like small businesses and homes. It provides superior connection services to high-and-low end users alike and is the paramount service in the FTTx pyramid of providing internet via fibre at different levels. FTTH uses a tree based topology to deliver maximum coverage with minimum bifurcations.

The Optical Line Terminal (OLT) is the main element of the network and it is usually placed in the local exchange. It is the engine that drives FTTH system. Traffic scheduling, buffer control and bandwidth allocation are the most important functions of optical line terminal. The optical splitter splits the power of the signal. That is to say, each fibre link entering the splitter may be split into a given number of fibres leaving the splitter. Usually, three or more levels of fibres correspond to two or more levels of splitters. This enables sharing of each fibre by many users. Opti-

cal Network Terminal (ONT) is deployed at customer's premises. It is connected to the OLT by means of optical fibre and no active elements are present in the link.



The enormously capable fibre optical cable allows FTTH to provide a variety of services alongside high speed internet. Voice over IP (VOIP), multimedia, online gaming, standard and high definition TV along with additional set-top box functions. Voice over IP is an upgrade to standard RJ-11 connector cables and coaxial cables which does not use hardware but an internet connection for calling and provides superior quality, network coverage and a voice quality even better than VOLTE technology.

FTTH provides TV services of advanced nature with amenities including a very large number of channels with high resolution streaming. Television services are weather proof because they

use Internet and not satellite signals to work and this greatly increases their efficiency. It provides separate reserved bandwidth for online gaming and streaming purposes which is an advantage over the old network technologies which had no such possibilities for separate bandwidth or premium services.

FTTH substitutes data connection by copper cables and is the ultimate upgrade to the optical fibre FTTC (Fibre to the Curb). Optical fibre has a great range advantage over copper cables working on xDSL technologies which have a maximum range of 5 km, whereas FTTH has a range of 60 to 100 km. Fully symmetric services (same upload and download bandwidth) are easily achievable with FTTH.

Earlier FTTH was available in India at a high price in only a few selected cities. Now, it is being widely advertised and launched in India by all the major telecom service providers at a very nominal price which promise speeds up to 1 GBPS and premium services like multimedia streaming and 4K TV.

A Step Ahead

“We must reform society before we can reform ourselves.”

-George Bernard Shaw

Our country has been carrying an extra weight of primitive rules whose definitions have been questioned lately. These questions definitely point towards the need of a better and concrete law whose validity cannot be suspected.

The country, on **September 6, 2018** got its oxygen back as The Supreme court, in four separate but concurring judgements rewrote the history by setting aside its own verdict in the Suresh Kaushal case, decriminalising homosexuality for consenting adults. Section 377 of the Indian Penal Code (IPC) was a 158-year old colonial era provision which criminalised consensual unnatural sex. The judgement proved that societal morality cannot trump constitutional morality and one's bodily autonomy is individualistic. As a matter of fact, this step was the need of the hour since India is a country where culture changes every 100 km.

It is time to bid adieu to prejudicial perceptions deeply ingrained in social mindset and empower LGBTQ community against discrimination. They should be allowed to make their own choices. This community needs the rainbow of hope



for the sake of humanity and must be allowed to live out of the shadows as they too are human beings.

Moreover, the journey of our country towards dignity, equality and liberty didn't take a pause at this verdict. It was realised that the time had come when society had to realise that a woman is equal to her husband in every respect. The dusty Victorian provision of adultery in the Indian Penal Code treated a married woman as her husband's subordinate. Looking into the matter, the apex court made an appreciable judge-

ment which totally scrapped the Section 497 of the Indian Penal Code. Chief Justice, Dipak Misra quoted, “It is time to say husband is not the master”. It was one of the most important steps in the direction of women empowerment as it prohibits a man to treat his wife as a property.

The notable thing here is that these two judgements were like two bullets fired from a gun simultaneously (both in the month of September, 2018) which knocked down old and unnecessary customs and practices in our country.

Another historic change which the country has been witnessing as of late is the criminalisation of triple talaq. An ordinance was passed in mid-September this year, to make instant triple talaq a pun-

ishable offence. This practice of oral divorce allowed Muslim men to abandon their wives whenever they wished to. Although people have mixed views on this issue, the ordinance has proved to be a boon for the women of Muslim Community. However, a permanent law is still supposed to be made by the parliament, but this ordinance could still be considered as a wave of hope that washes away an ill-practice being practiced over centuries.

We all know for sure that these changes aren't enough. There are a lot more reforms that need to be made but still these attempts are definitely 'A Step Ahead' towards a better society.



INDIAN PENAL CODE 1860

How To?

How to generate an Aadhaar Virtual ID (VID) and what are its benefits??

Don't want to give your Aadhaar number out? For those of you who don't want to share your unique 12-digit biometric number, you now have an alternative in the form of the Aadhaar Virtual ID (VID). The VID will allow you to authenticate transactions and know your customer (KYC) services instead of providing your Aadhaar number.

Here's a step-wise guide to generate Aadhaar Virtual ID on UIDAI's resident portal:

- Go to the VID generator on the UIDAI homepage, under the Aadhaar services.
- Enter your Aadhaar number, security code, i.e., the captcha and click on 'send OTP'. You will receive the OTP on your UIDAI registered mobile number.
- Below the field to enter the OTP, you'll have the option to generate a new VID or retrieve the one you have already generated. On submitting, you'll receive the VID on your mobile number.

What is VID?

The VID is a temporary, revocable 16-digit random number mapped with the Aadhaar number. The UIDAI, in a statement issued in January, said that one's Aadhaar number cannot be derived from the generated

VID. Currently, VID can be generated on UIDAI's resident portal.

Since this is a digital ID, Aadhaar holders can regenerate it multiple times, which makes it safer than providing your actual Aadhaar number. At present, the VID is valid for a minimum of one day, which means that an Aadhaar holder would be able to re-generate a new VID a day after he has generated the first one. Further, there is no expiry period defined yet for the VID and it will be valid till the time a new one is generated. This facility on the UIDAI website, can only be accessed if you have your mobile number registered in the UIDAI database. This is because all Aadhaar-related online services are one-time password (OTP) enabled and for this, registering your mobile number with UIDAI is a must.

FINAL YEAR MEMBERS

Aaruni Khare

Anurag Dhar Dubey

Archish Jaiswal

Arushi

Krati Tiwari

Manisha Mishra

Narendra Mishra

Shreya Mishra

Shreyansh Srivastava

Shubham Pathak

Somiya Bhandari

श्रेष्ठ या उत्तम

*वो जो शोर मचाते हैं भीड़ में
भीड़ ही बनकर रह जाते हैं,
वही पाते हैं ज़िंदगी में सफलता
जो खामोशी से अपना काम कर जाते हैं।*

इतना तो हम सभी जानते हैं कि सफलता इस विश्व में हर किसी का स्वप्न होती है। यहाँ हर दूसरा व्यक्ति सफलता के पीछे दौड़ रहा है और अधिकतम लोग उस सफलता को प्राप्त करने के लिए श्रेष्ठ बनने का प्रयास करते हैं। उनके अनुसार श्रेष्ठता ही सफलता का मूल सिद्धांत है।

परंतु यह 'श्रेष्ठता' है क्या? क्या महत्व है इसका प्राणी जीवन में? श्रेष्ठता का सीधा और गहन अर्थ है, 'दूसरों से अधिक ज्ञान प्राप्त करना'। अर्थात् मूल्य इस बात का नहीं है कि स्वयं कितना ज्ञान प्राप्त हुआ, मूल्य इस बात का है कि प्राप्त हुआ ज्ञान दूसरों की अपेक्षा कितना अधिक है।

मूल रूप से श्रेष्ठता की इच्छा ज्ञान प्राप्ति को भी एक स्पर्धा के रूप में परिवर्तित कर देती है और यह तो हम सभी जानते हैं कि स्पर्धा में विजय कभी अंतिम नहीं होती। कभी एक विजयी तो कभी दूसरा और यही तो सृष्टि का नियम है। यानि कुछ

THIRD YEAR MEMBERS

Aditi Shukla

Ankit Kumar Tripathi

Anurag Sonkar

Ashwani Dubey

Mayank Prasad

Pragya Singh

Praveen Kumar Gupta

Rishika Jaiswal

Sarthak Srivastava

Saumya Rai

Shivani Dubey

Sungtiben Jamir

Vineeta Singh

Yashasvi Anand

समय के लिए तो श्रेष्ठ बना जा सकता है परंतु सदा के लिए कोई भी श्रेष्ठ नहीं बना रह पाता और परिणामस्वरूप फिर वही पीड़ा, असंतोष और संघर्ष जन्म लेता है।

किंतु क्या हमने कभी विचार किया है कि श्रेष्ठ बनने के अपितु यदि 'उत्तम' बनने का प्रयास किया जाए तो क्या होगा? उत्तम होने का अर्थ है कि जितना प्राप्त करने योग्य है, वह सब प्राप्त करना परंतु वह भी किसी से अधिक पाने की अभिलाषा से नहीं, मात्र आत्मा की तृप्ति हेतु होना चाहिए। उत्तम बनने के मार्ग पर स्पर्धा किसी अन्य से नहीं अपितु स्वयं से होती है। मनुष्य को स्वयं ही अपनी त्रुटियों का आंकलन करके उनसे सीख लेनी चाहिए जिससे कि वह उत्तम की श्रेणी में स्थान प्राप्त कर सके।

उदाहरण के तौर पर कोई छात्र जो अपने संस्थान द्वारा निर्धारित सभी परीक्षाओं में आशातीत सफलता अर्जित करता जा रहा हो परंतु शीर्ष स्थान पर रहकर भी यदि वह प्रयोगात्मक विधियों में कुशल न हो तो ऐसे छात्र के श्रेष्ठ होने का कोई लाभ नहीं क्योंकि वह श्रेष्ठ होकर भी कुछ सीख पाने में असफल रहा है।

अर्थात् निष्कर्ष यही निकलता है कि उत्तम बनने का प्रयत्न करने वाले को विलंब से सारा ज्ञान प्राप्त हो जाता है, बिना प्रयत्न के ही वह श्रेष्ठ बन जाता है किंतु जो श्रेष्ठ बनने का प्रयास करता है, वह श्रेष्ठ बने या न बने परंतु 'उत्तम' कभी नहीं बन पाता।

SECOND YEAR MEMBERS

Abhishek Singh

Akshat Singh

Anuj Dubey

Astitva Mishra

Avaneesh Shukla

Ishita Singh

Mayank Srivastava

Nikhil Kumar

Nitya Anand

Shikhar Trivedi

Shivam Kumar

Shivani Parashar

Suryansh Kumar Pathak

Ujali Singh

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-Beckoning Creati'wit'y

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