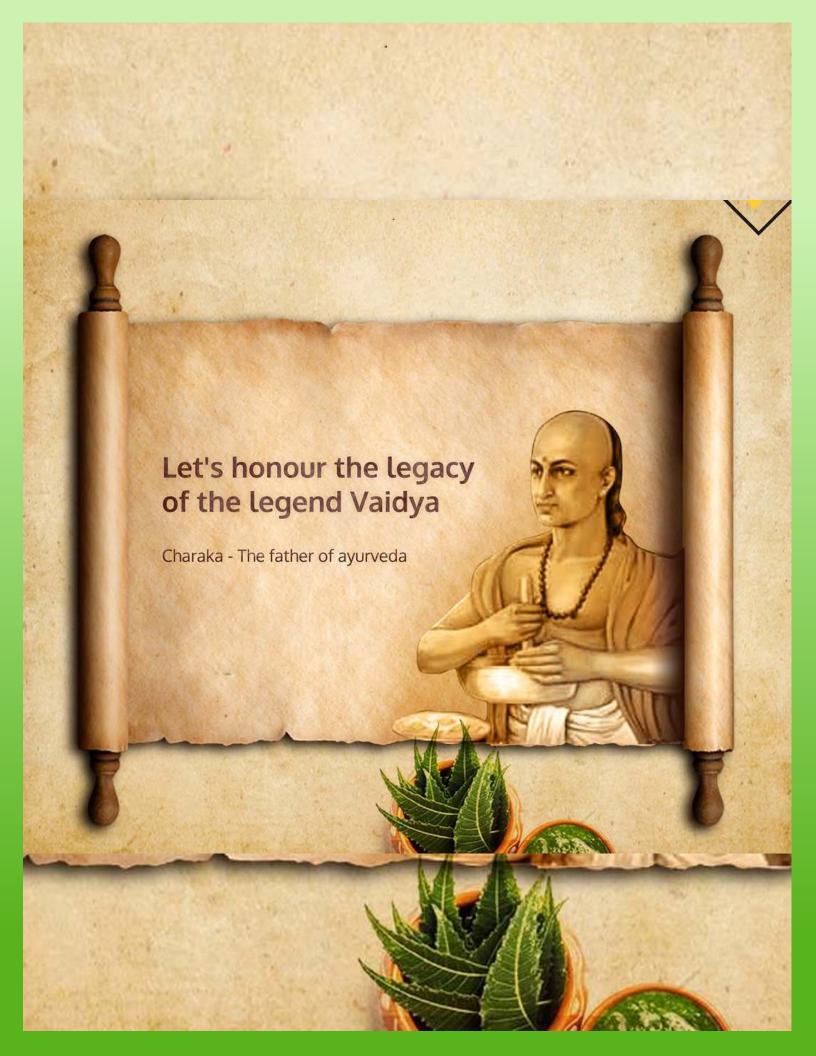






TECHNOCRATS INSTITUTE OF TECHNOLOGY-PHARMACY



### Art Gallary- Snaps by Students









# TECHNOCRATS INSTITUTE OF TECHNOLOGY-PHARMACY

Technocrats Group Campus, BHEL, Bhopal- 462021 MP, India Ph. No.- 2805101, 2751693, 2713736

E-mail: technocrats.pharmacy@gmail.com | website: www.titpharmacy.net



# Olisian of Institution

To grow as an institute of excellence for Pharmacy Education and Research and to serve the humanity by sowing the seeds of intellectual, cultural, ethical, and humane sensitivities in the students to develop a scientific temper, and to promote professional and technological expertise.

# Ollissian of Onstitution

- M 1: To inculcate ethical, moral, cultural and professional values in students.
- M 2: To provide state of art infrastructure facilities to the staff and students so as to enable them to learn latest technological advancements.
- M 3: State of art learning of professionalism by the faculty and students.
- M 4: To produce well learned, devoted and proficient pharmacists.
- M 5: To make the students competent to meet the professional challenges of future.
- M 6: To develop entrepreneurship qualities and abilities in the students.



राजभवन भोपाल- 462052



श्री मंगूभाई छगनभाई पटेल राज्यपाल



मुझे यह जानकर प्रासन्नता हो रही है कि टेक्नोक्रेट्स इंस्टीट्यूट ऑफ टेक्नोलॉजी-फार्मेसी भोपाल द्वारा वार्षिक पत्रिका ''प्रयास-2024-25'' का प्रकाशन किया जा रहा है।

शिक्षण संस्थाओं द्वारा पत्रिका का प्रकाशन विद्यार्थियों के लिए विचारों व भावों को अभिव्यक्त करने का सशक्त माध्यम है। इस प्रकार की पत्रिकाएं विद्यार्थियों को निखारने में सहायक होती है। मुझे आशा है कि पत्रिका में देशप्रेम और चिरत्र निर्माण जैसे विभिन्न पहलुओं से संबंधित पठनीय सामग्री का समावेश किया जायेगा जिससे देश में जिम्मेदार युवा पीढ़ी का निर्माण सुनिश्चित हो सकेगा।

शुभकामनाएं।

भीगुनेसार् यह रूप्त (मंगुभाई पटेल)





**डॉ. मोहन यादव** मुख्यमंत्री



प्रसन्नता का विषय है कि टेक्नोक्रेट्स इंस्टीट्यूट ऑफ टेक्नोलॉजी-फार्मेसी भोपाल द्वारा वार्षिक पत्रिका ''प्रयास-2024-25'' का प्रकाशन किया जा रहा है।

तकनीकी शिक्षा प्राप्त कर रहे विद्यार्थियों की सृजनात्मक अभिव्यक्ति के लिये पित्रका का प्रकाशन एक सराहनीय प्रयास है। साहित्य, संस्कृति और भाषा के ज्ञान के साथ-साथ यांत्रिकी वातावरण को सरस व समरस बनाने में भी इस तरह की पित्रकाओं का महत्वपूर्ण योगदान होता है।

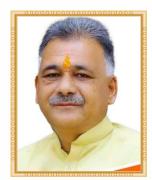
आशा है, पत्रिका''प्रयास-2024-25'' महाविद्यालय परिवार के विचारों की संवाहक बनकर उपयोगी व महत्वपूर्ण दस्तावेज बनेगी।

हार्दिक शुभकामनाओं सहित।









**Shri Indar Singh Parmar**Minister of Technical Education M.P.

I am delighted to learn that Technocrats Institute of Technology-Pharmacy Bhopal is publishing its college magazine "PRAYAS 2025".

I appreciate the efforts and hope this will create healthy as well as innovative atmosphere among the institution's beneficiaries, especially the youth joining the educational field.

This reputed institution has done a commendable job by imparting quality education in the field of Technical Education. By doing this it has greatly helped the youth of the state to catch up with time and excel in their respective fields.

With all my warm greeting I wish them all good luck and send my congratulations to the Management and the editorial team.

Shri Indar Singh Parmar





प्रो. (डॉ.) <mark>वीरेन्द्र कुमार</mark> संचालक



अत्यंत हर्ष का विषय है कि टेक्नोक्रेट्स इंस्टीट्यूट ऑफ टेक्नोलॉजी-फार्मेसी भोपाल द्वारा वार्षिक पत्रिका ''प्रयास-2024-25'' का प्रकाशन किया जा रहा है।

संस्था की पत्रिका का प्रकाशन विद्यार्थियों की बहुमुखी प्रतिभा को आगे लाकर पहचानने ओर उनके सम्पूर्ण व्यक्तित्व विकास के लिये आवश्यक है।

पत्रिका में ही उस महाविद्यालय के कार्यकलापों, छात्र-छात्राओं एवं शिक्षकों की प्रतिभाओं, उनका बौद्धिक स्तर एवं आदर्शों का प्रतिबिम्ब झलकता है।

मुझे पूर्ण विश्वास है कि आपका यह प्रयास अपने उद्देश्यों में पूर्ण रूप से सफल रहेगा एवं भावी पीढ़ी के लिये पथ प्रदर्शक का कार्य करेगा।

प्रो. (डॉ.) वीरेन्द्र कुमार







**Prof. Rajeev Tripathi**Vice Chancellor

मुझे यह जानकर प्रसन्नता हुई कि टेक्नोक्रेट्स इस्टीट्यूट ऑफ टेक्नालॉजी -फार्मेसी भोपाल द्वारा वार्षिक महाविद्यालय पत्रिका''प्रयास-2024-25'' का प्रकाशन किया जा रहा है।

महाविद्यालयीन पत्रिका किसी भी संस्था के लिये दर्पण की तरह होती हैं। मैं आशा करता हूं कि वार्षिक पत्रिका संस्था की शैक्षणिक उपलब्धियों को रेखांकित करने एवं छात्रों को सांस्कृतिक एवं साहित्यिक एवं अन्य शैक्षणेत्तर गतिविधियों में अपनी प्रतिभा प्रदर्शन के लिए उपयुक्त मंच उपलब्ध कराएगी।

पत्रिका के सफल प्रकाशन के लिए सम्पादक मण्डल, शिक्षकगण एवं छात्र-छात्राओं मेरी अनेक शुभकामनाएं।

मैं आशा करती हूं कि संस्था निरन्तर उन्नित एवं प्रगति के पथ पर अग्रसर होगी एवं तकनीकी शिक्षा के क्षेत्र में देश, प्रदेश एवं समाज को अपना योगदान देती रहेगी।

**Prof. Rajeev Tripathi**Vice Chancellor, RGPV, Bhopal



**Chairperson**TIT Group of Institutions



Obviously, I am feeling an immense pleasure to orate that our college is going to publish a yearly magazine "PRAYAS 2024-25", which does not only bestow academic excellence but also highlights overall multidimensional and moralistic developments of the college.

This magazine also throws light on the personality, working capacity and achievements of students, faculties and managements.

No doubt, I am again very much obliged to mention that the students and faculty-members gave good and moralizing articles for publication in this magazine.

In nutshell, I am of course, very much thankful to all the members, who taught the students very nicely, who gave their a highly remarkable contribution. I again wish them for their bright future and happy life.

**Chairperson**TIT Group of Institutions





Message
Obviously, I am fee

Obviously, I am feeling an immense pleasure to orate that our college is going to publish a yearly magazine "PRAYAS 2024-25", which does not only bestow academic excellence but also highlights overall multidimensional and moralistic developments of the college.

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Vice Chairman



**Managing Director**TIT Group of Institutions



Indeed it is a matter of great pleasure that Technocrats Institute of Technology-Pharmacy is going to publish its annual institutional magazine "PRAYAS 2024-25".

Furthermore, I am really very sure that this college magazine will provide a platform to the students to sharpen their writing skills by strengthening academic activities of college.

I extend my best compliments, hearty blessings to faculty members, staff members and rising sun of the nation i.e. students for their bright future and happy life. I also hope that they will strive for the creation of academic and professional excellence in the coming years.

In the end, I am feeling much pleasure to extend my warm greetings and wishes to all the faculties. Students and other staff members who gave their unique contribution for successful release of their annual magazine

.

**Managing Director** 



Dr. Anurag Choubey
Director Administration



I congratulate the team of students and teachers whose precious efforts have made this edition of "PRAYAS 2024-25". accessible to us. It gives me immense pleasure to experience the warmth of this literary tradition in resonance with the glorious past of the institution. Rhyming with the change that is the law of nature, the magazine portrays the trajectory of transformation achieved in different spheres. I feel privileged to for hold the post of Director Administration and Director Academics of this reputed temple of learning that houses the stakeholders who thrive to maintain the dynamic spirit of learning and discovering through such endavours. The Institute is firm in its resolve to providing support to academic events and publication of literary writings.

I wish "PRAYAS 2024-25". will scale greater heights with active participation of students and staff members of this institution.

**Dr. Anurag Choubey**Director Administration







It is a matter of great pride and satisfaction for Technocrats Institute of Technology, Bhopal (M. P.) to publish the 2024-25 issue of our annual magazine "PRAYAS 2024-25". The institute has made tremendous progress in all the areas pertaining to co-curricular, extra-curricular development of the students and capacity building of the staff. I am sure that this issue of our annual magazine will send a positive signal to the staff, students and the people who are involved as well as interested in the technical education and technology-based activities. A magazine is like a mirror which reflects the clear picture of all sorts of activities undertaken by an institution and develops appropriate writing skills among students in particular and teaching faculty in general.

I express my deep sense of gratitude to Dr. Deepak Basedia, HOD (Phamacy) under whose guidance this magazine issue work has been undertaken and completed within the stipulated time. I also express my heartfelt congratulations to all the faculties, staff members and students of the editorial board for the arduous task executed most effectively. I am hopeful that this creative effort shall not only develop the taste for reading among the students but also develop a sense of belong ingness to the institution as well.

Dr. B K Dubey





Pharmacy is one of the most trusted and noble profession and remains one of the most fascinating fields in the sciences. During the last few years due to phenomenal growth and advancement of science and technology, concept of pharmacy has drastically changed in recent times and today pharmacist is also closely involved as one of the most important member, working hand in glove in majority of the health delivery system along with pharmaceutical industry.

Message

Technocrats Institute of Technology-Pharmacy Bhopal, established in the year 2002 approved and recognized by AICTE and PCI, Govt. of India. The institute offers courses in B. Pharm and M. Pharm. The college has well-equipped laboratories and excellent infrastructure to make the students acquire knowledge that would help them to face the competitive world. Students are provided the best quality education through traditional and modern teaching methods. National Seminars, Workshops and Industrial visits are conducted in the college at regular intervals which enable the students to gain new updated knowledge. The institute also focuses on personality development, confidence building, research exposure and enhancement of communication skills, apart from various cultural events and activities.

The role of a college magazine is therefore vital in promoting what an institution offers. It brings out into the open things hitherto unrevealed. It brings to light the names of the unsung heroes and their mighty deeds. I am happy that there is a dedicated team of staff and students who have brought out the "PRAYAS 2024-25", annual magazine of our college. I congratulate them for their successful venture and pray that each year brings more and more triumph to "PRAYAS 2024-25".

Dr. Deepak Kumar Basedia







Being the Editor In charge of college magazine "Prayas-2025", it gives me great pleasure to bring to you this issue. The annual Magazine Prayas, is designed to present to its readers the year's various activities by the students and faculty in academic, cocurricular, extra-curricular as well as research & developments that have gone by, the magazine also showcases the talents of our faculty members and students. With a sense of pride and satisfaction I would like to say that with the active support of the management, faculty and students. The "Prayas-2025" is published which is a truly literary & creative document of the talents of our faculty, technical staff and students. The Magazine committee is composed of the student editor, sub editors & staff advisors. The varieties of articles in research field give us a sense of pride that our students and teachers possess creative potential and original thinking in ample measures. Each article is entertaining, interesting and absorbing. Along with those interesting general articles, stories, poems of the magazine will develop confidence, motivation, zencouragement, passion, perfection and dedication in readers. It also contained more about pharmaceuticals, research which sharpen their strength in areas like academic, non-academics of staff and students. I congratulate the editorial team for making "Prayas-2025", innovative and inspiring.

Wish you all best luck

Dr. Mukesh Kumar Patel

### Program Educational Objectives (PEOs) for B.Pharm Course

PEO 1: To inculcate quality pharmacy education and training through innovative Teaching Learning Process.

PEO 2: To promote professionalism, team spirit, social and ethical commitment with effective interpersonal communication skills to boost leadership role assisting improvement in healthcare sector.

PEO 3: To enhance Industry-Institute-Interaction for industry oriented education and research, which will overcome healthcare problems of the society.

PEO 4: To adapt and implement best practices in the profession by enrichment of knowledge and skills in research and critical thinking.

PEO 5: To generate potential knowledge pools with interpersonal and collaborative skills to identify, assess and formulate problems and execute the solution in closely related pharmaceutical industries and to nurture striving desire in students for higher education and career growth.

#### **PROGRAM OUTCOMES**

- **1. Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- **2. Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
- **3. Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- **4. Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- **5.** Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- **6. Professional Identity:** Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
- 7. **Pharmaceutical Ethics:** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- **8.** Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- **9.** The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
- **10. Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 11. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self- assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

### CEditorial Board



### Student Œditorial Œboard





### Editorial Board

### **Advisory Board**

Dr. B.K. Dubey

Dr. Deepak Basadia

Dr. Anuj Kumar Asati

Dr. Mukesh Patel

Prof. Bhushan Korde

### **Student Editorial Board**

Lalit Soni

Shiva Shukla

Vishesh Tiwari

**Anirudh Patel** 

Doli Deshmukh

Deepika Sahu

**Anushka Singh** 

**Anurag Kushwaha** 

Rachit Yadav

Rahul Kumar

### **Chief Editor**

Dr. Mukesh Kumar Patel

### **Editor**

Mrs. Sandra Gautam

Ms. Kiran Satnani

Ms. Najmus Sehar

Mr. Sameer Ahmad

Mr. Anandi Lal

Mr. Ajay Tiwari

## Oath of a Pharmacist

At this time, I vow to devote my professional life to the service of all humankind through the profession of pharmacy.

I will consider the welfare of humanity and relief of human suffering my primary concerns.

I will apply my knowledge, experience, and skills to the best of my ability to assure optimal drug therapy outcomes for the patients I serve.

I will keep abreast of developments and maintain professional competency in my profession of pharmacy.

I will maintain the highest principles of moral, ethical, and legal conduct.

I will embrace and advocate change in the profession of pharmacy that improves patient care.

I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public.

### Cade of Ethics for Pharmacists

#### **Preamble**

Pharmacists are health professionals who assist individuals in making the best use of medications. This Code, prepared and supported by pharmacists, is intended to state publicly the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professionals, and society.

#### **Principles**

I. A pharmacist respects the covenantal relationship between the patient and pharmacist.

Interpretation: Considering the patient-pharmacist relationship as a covenant means that a pharma cist has moral obligations in response to the gift of trust received from society. In return for this gift, a pharmacist promises to help individuals achieve optimum benefit from their medications, to be committed to their welfare, and to maintain their trust.

II. A pharmacist promotes the good of every patient in a caring, compassionate, and confidential manner.

Interpretation: A pharmacist places concern for the well-being of the patient at the center of professional practice. In doing so, a pharmacist considers needs stated by the patient as well as those defined by health science. A pharmacist is dedicated to protecting the dignity of the patient. With a caring attitude and a compassionate spirit, a pharmacist focuses on serving the patient in a private and confidential manner.

III. A pharmacist respects the autonomy and dignity of each patient.

Interpretation: A pharmacist promotes the right of self-determination and recognizes individual self-worth by encouraging patients to participate in decisions about their health. A pharmacist communicates with patients in terms that are understandable. In all cases, a pharmacist respects personal and cultural differences among patients.

 A pharmacist acts with honesty and integrity in professional relationships.

Interpretation: A pharmacist has a duty to tell the truth and to act with conviction of conscience. A pharmacist

avoids discriminatory practices, behavior or work conditions that impair professional judgment, and actions that compromise dedication to the best interests of patients.

V. A pharmacist maintains professional competence.

*Interpretation:* A pharmacist has a duty to maintain knowledge and abilities as new medications, devices, and technologies become available and as health information advances.

VI. A pharmacist respects the values and abilities of colleagues and other health professionals.

Interpretation: When appropriate, a pharmacist asks for the consultation of colleagues or other health professionals or refers the patient. A pharmacist acknowledges that colleagues and other health professionals may differ in the beliefs and values they apply to the care of the patient.

VII. A pharmacist serves individual, community, and societal needs.

Interpretation: The primary obligation of a pharmacist is to individual patients. However, the obligations of a pharmacist may at times extend beyond the individual to the community and society. In these situations, the pharmacist recognizes the responsibilities that accompany these obligations and acts accordingly.

VIII. A pharmacist seeks justice in the distribution of health resources.

*Interpretation:* When health resources are allocated, a pharmacist is fair and equitable, balancing the needs of patients and society.

The endorsement of this document was reviewed in 2017 by the Council on Pharmacy Practice and by the Board of Directors and was found to still be appropriate.

Copyright American Pharmacists Association. Adopted by the membership of the American Pharmaceutical Association on October 27, 1994. Endorsed by the American Society of Health-System Pharmacists House of Delegates on June 3, 1996 (ASHP Policy 9607). Proceedings of the 47th annual session of the ASHP House of Delegates. *Am J Health-Syst Pharm.* 1996; 53:1805. ASHP Reports.

### Toppers



**Shristi Soni** 8.69 CGPA



Piyush Raj 8.54 CGPA



Kumar Gaurav 8.0 CGPA



Namrata Shende 8.89 CGPA



Anuska Dwivedi 8.8 CGPA



**Yashwant Kumar** 8.3 CGPA



Modassir Nawaz 8.39 CGPA



Manu Pawar 8.28 CGPA



Vishesh Tiwari 8.01CGPA



Devesh Ku Upadhaya 9.2 CGPA



**Shanvi Jain** 8.9 CGPA



Shubham Kushwaha 8.7 CGPA

# Congratulation GPAT QUALIFIER

Heartiest congratulations on your outstanding achievement in qualifying the Graduate Pharmacy Aptitude Test (GPAT)! This accomplishment is a testament to your hard work, dedication, and exceptional aptitude in the field of pharmacy.



GPAT AIR-1087 NIPER AIR-1201



#### **PAPERS PUBLICATIONS**

- Formulation And Characterization of Invasomes Gel of Bacitracin For Effective Treatment Of Topical Disease.
- Extraction, Phytochemical Screening And Antipyretic Activity of Rubia Cardifolia.
- Investigation of Phytochemical Constituent of Plant Sauromatum Venosum Linn Having Anti-acne Activity.
- Stability Indicating HPLC Method Development And Validation For The Estimation of Lasmiditan In Marketed Formulation.
- Pharmacological And Phytochemical Investigation of Plant Zingiber Zerumbet Havinganti-ulcer Activity.
- Enhancement of Solubility And Formulation of Fast Dissolving Oral Films of An Antiemetic Drug Development And Evaluation of Floating Nanosponges of Captopril.
- In Vivo Antiarthritic Activity of Hydroalcoholic Extract of Catunaregam Spinosa.
- Enhancement of Solubility And Development of Orodispersible Tablets of Antihypertensive Drug.
- Formulation And Development of Novel Control Release Transdermal Patches of Bupranolol.
- Development & Characterization of Vancomysin Colon Targeting Nanosponges For Treatment of Colitis.
- Enhancement of Solubility And Development of Orodispersible Tablets of Antihypertensive Drug.
- Anti-diarrheal Activity of Polyherbal Formulation of Tamarindus Indica and Woodfordia Fruticosa Leaves Extract.

### Patents



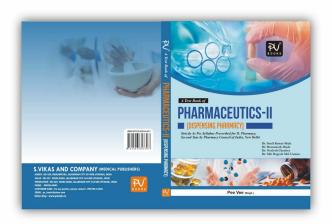


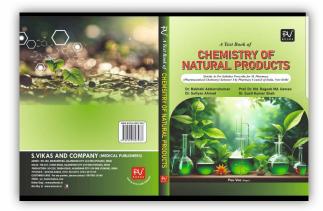


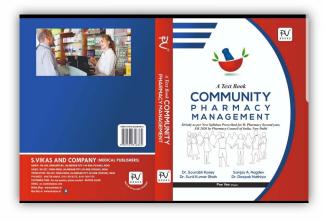




### Book Publication















### Student Success stories: Entrepreneur

Success story of:

**Shashi Raj Education**: B.Pharm Batch: 2019-2023 Myself Shashi Raj from Bihar, Barh Patna. I was a student of TIT Pharmacy batch 2019-23.

- My academy session was very good with the help of college faculties. During my academy session I started working for the knowledge compatibility.
- During my second year's end I joined one of the research centers in Bhopal named RB Science Research Lab this is the one of the best Research Lab in MP.
- By this flow the academic session ends with 8.9 CGPA.
- As soon as I completed college I applied to one of the best industries among pharmaceutical industries, Zydus life science, Ahmadabad as a Trainee officer (Apprentice) with the blessing of Guru and Guardians.
- I Got confirmation within 2 months with the knowledge obtained from TIT College After working for a year I thought to become an entrepreneur and by the flow I left my job and started on Hospital with the help of MBBS, MD/MS & pharmacists.
- In the end I would like to thank the Technocrats institute of technology Pharmacy to make me capable of making a strong decision in life.



Name: **SHASHI RAJ** Batch: 2021-2025

Gmail I'd: shashiraj09@gmail.com

# Alumni Ospeak



Shvam Sunder

At the very outset, I extend my sincere thans to the esteemed faculty at TIT- PHARMACY, who cultivated the quest for continuous learning through a plethora of theoretical and practical training sessions. The entire staff always has showcased professionalism and extended immense help wherever required by considering students' development as a focal point. The overall environment in TIT- PHARMACY has helped me foster and hone my skills as an individual by participating in several technical and sports competitions, allowing me to portray leadership and cultivating a sense of confidence in my overall being. On the personal front, I have gained friends from colleagues into an extended family for a lifetime, going to good places in their careers. The paradigm shifts to the new normal did not deter the sheer enthusiasm of the faculty, and the training sessions happened as they used to with the same vigor during the COVID-19 times. TIT-PHARMACY is a one-stop learning destination that I would recommend to every aspiring Pharma graduate.

Kumar Gaurav

TIT-PHARMACY has prepared me to face the worst or toughest course of action that I'll meet These four years have been wonderful for me. I have made friends and connections. I have grown academically and professionally. TIT-PHARMACY will teach you to excel academically; there are no second thoughts on that subject, but it will also prepare you to face the outside world and show you the competition level you will face in the future. Due to the pandemic, 1.5 years of academics continued from home. During that time, I missed my college life a lot. Surely, I covered some part of it after the Lockdown was uplifted. I hope you all would enjoy your time in St. John, I'll like to convey a message to future students enjoy your UG life at TIT-PHARMACY, live to your fullest don't get scared about your future. You all are getting shaped knowingly - unknowingly, and surely will succeed in the future.

# Alumni Ospeak

Most of the time, I always wanted to be on the other side of my college gate, and when the day came, I found many memories left deep inside the gates of TIT- PHARMACY, which still linger in my heart. Basking in the sun with friends, short naps during the lecture; teasing friends; last day exam preparations; small moments of success; care and love of friends and faculty. Blank viva's; birthday celebrations; taking extra supplements to increase the length of answers; waiting for cultural programs; future planning and the passion for becoming 'A Pharma Graduate' one day. All these moments ended the day we left and turned into memories that still ring a bell on our Happy Days! So, the journey can always turn into happy days, not the race. Things may end, but memories will last forever. Thank you, TIT-PHARMACY, for believing in me and making my Undergraduate program memorable. I will cherish the memories, and my relationship with you will always remain special and near to my heart. Thank you for everything, TIT-PHARMACY.



Shalini Soni

My journey during college days was splendid, and all kudos to TIT- PHARMACY for making it a meaningful part of my life. With my four years of stay here, I would honestly say that if you want to discover your potential and be encouraged, there is no better place than TIT-PHARMACY. The dynamic management and professors here put their trust in the students and continuously supported us to reach heights. The best part about being in TIT-PHARMACY was exposure to practical knowledge through lab sessions and various competitions. This valuable exposure helped me gain a deeper understanding of the concepts learned in theory. The vast opportunities and the competitive environment have always helped to bring out the best of me. And how can I forget the friends that I have made during this precious time of my life? The TIT- PHARMACY pages of my life diary stand evergreen, and my relationship with this place will remain forever. Wholehearted thanks for everything!

# CHlumni Speak



Ambika Suryawanshi

I express my deepest gratitude to TIT- PHARMACY for helping me acquire the abilities that helped me pursue my Master's. I am truly grateful to my professors and peers for fostering an environment conducive to learning and development. During my undergraduate years, I received advice and guidance that inspired me and gave me the direction I needed to reach my objective. They also provide a huge platform for sports and cultural activities. My respected professors nourished and shaped me into a vibrant person, and I am deeply grateful to them. I would also like to thank my friends for helping me develop my individuality. Being a part of TIT-PHARMACY fills me with joy and pride.

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Ankit Choudhary

My journey to NIPER began from TIT-PHARMACY, when, during Lockdown, one of my seniors and my Professor told me to start preparing for GPAT/NIPER. I started preparing for the entrance with no clue where to start and what to study, considering that we have to cover the entire B. Pharm syllabus for the entrances. Initially, as happens with every aspirant, there were phases of doubts about oneself, getting overwhelmed with the huge syllabus and the competition. But to achieve anything in life, you always start with the smallest steps first, which ultimately takes you towards your bigger goal in life. And the most important thing I have realized is, "First, it happens in the mind and then in reality." So, practicing and maintaining positive self-talk is essential, believing that you have already achieved what you aim for. I wish you all the best in your future endeavours, and keep giving your best rest; everything will fall into place.



### Reduce your intake of saturated fat, trans fat, sugar and sodium.

Reduce your intake of saturated fat, trans fat, sugar and sodium. Not only do added fat and sugar pile on unwanted calories, but consumed in excess, they contribute to weight gain and chronic diseases such cardiovascular disease, diabetes and some types of cancer. In some people, too much sodium leads to high blood pressure. To combat these problems, you can:

- Limit your intake of processed grains and snack foods, such as cookies, crackers, corn and potato chips, and snack cakes. Although these snacks are highly palatable, they are also laden with trans fat, sugar and sodium. Instead, choose unprocessed foods for snacks, such as dried fruit, pretzels or nuts.
- Limit your intake of processed meats—such as bacon, lunch meat and sausage—and of cheese and pizza, which are also highsodium. Instead, prepare lean cuts of fresh meat and choose low-fat cheese.week, choose beans, legumes of protein in place of meat.
- Use less salt at the table and during cooking. In place of salt, enhance the flavor of your food with added herbs and spices. Sodium, sugar and trans fat often hide in unsuspected foods. For example, canned soups can be surprisingly high in sodium, and sugar is often added to pasta sauce. Likewise, trans fats are ubiquitous in processed foods. It pays to read food labels. Avoid products that have added sugar (sucrose, glucose, high-fructose corn syrup) or trans fat (hydrogenated or partially hydrogenated oil).

### Increase your intake of fruits and vegetables, whole grains, fish and dairy products.

These foods contain a multitude of vitamins, minerals and other compounds (i.e., fiber and antioxidants) that promote health. We recommend that you:

- Eat more fruits and vegetables at meals and snacks. Fruits and vegetables are excellent sources of vitamins, minerals and dietary fiber. They also add color, which not only makes our plate more visually appealing, but adds the antioxidant power of phytonutrients.
- Swap whole grains for processed ones. Choose brown rice and whole wheat pasta. Experiment with quick-cooking grains like quinoa and millet. Read food labels to select baked goods and cereals that are made with whole grains.
- Choose fat-free or low-fat milk, yogurt and cottage cheese as a high-protein snack that is also packed with calcium and vitamin D. As an alternative to dairy products, select soy milk or orange juice that has been fortified with calcium and vitamin D.
- At least two times per week, choose seafood rather than meat to increase your intake of omega-3 fatty acids.Reference:-Medicine & Science in Sports & Exercise, the Journal of the Academy of Nutrition and Dietetics.

**Dr. B K Dubey**Director TIT-Pharmacy

### **Bringing Orphan Drugs to Market**

Some people assume that finding treatments for rare diseases offers little economic incentive for biopharmaceutical companies. If these diseases are so rare, the argument goes about who is going to buy the product. However, this is a misconception and research into rare disease treatment can be quite lucrative. They actually have a large potential market size with high market growth rate compared to the overall market for prescription drugs.

#### Some important facts:

- 1. Roughly 30 million people in the US and another 30 million people in the EU suffer from rare diseases. Even with more than 400 products on the market today and a number of new products being approved, there are still a lot of latent unmet medical needs.
- 2. The US Food and Drug Administration (FDA) and other governmental agencies now offer explicit economic incentives to develop orphan drugs as a way to encourage research and development in this important sector.
- 3. This category is currently experiencing high market growth, with some estimates suggesting that it will double the non-orphan drug prescription market in terms of compound annual growth rate for the next 5-10 years.
- 4. The drug companies appreciate that there is a correlation in treating a severe unmet medical need and return on investment. This is an area they can ensure premium pricing based on developing a premium product.

However there are clinical, economic, and humanistic challenges faced by Pharma companies which they must overcome for any orphan drug to be successful. There are four critical issues to consider: Value based pricing: Orphan drugs command premium pricing, but that pricing also draws added scrutiny from regulators, physicians and patients. Companies must remain cognizant of stakeholders concerns, and price these products in a value-based way if they want them to be adopted.

Ensuring coverage: Many of the big payers in the EU and US look at rare disease as such a small sample that they want to steer clear of making exclusive decisions about coverage, using step edits, prior authorization, or other types of payer controls to manage their risks. They are also pushing more costs to patients as a way to control utilization of the product. All of these issues need to be considered as part of the go-to-market plan.

Providing access: Coverage doesn't ensure access. Once a product is priced and coverage is optimized, they need to think about access and adoption. This includes making sure patients can access not only the drug, but also proper diagnostic mechanism, triage, and centers of excellence focused on that rare disease.

Adoption: Once the price is set, coverage is granted and you are achieving access, one needs to be sure the physicians and the patients are adopting the medication.

**Dr. Deepak Kumar Basedia** HOD TIT-Pharmacy

### **Bringing Orphan Drugs to Market**

#### **Emerging Trends in Pharmaceutical Sciences: Innovations Shaping the Future**

The field of pharmaceutical sciences is undergoing a dynamic transformation, driven by continuous research, technological advancements, and evolving healthcare needs. With each passing year, new innovations emerge that redefine drug development, delivery systems, and patient care. This article explores some of the most promising trends that are shaping the future of pharmacy.

#### 1. Personalized Medicine and Pharmacogenomics

Personalized medicine is revolutionizing treatment by tailoring drugs to individual patients based on genetic profiles. Pharmacogenomics, the study of how genes affect drug response, is making it possible to predict drug efficacy and minimize adverse effects. This approach ensures that patients receive the most effective therapy, reducing trial-and-error prescribing.

#### 2. Nanotechnology in Drug Delivery

Nanotechnology has opened new avenues in targeted drug delivery, improving bioavailability and reducing side effects. Inorganic nanoparticles, lipid-based carriers, and polymeric nanoparticles are being explored for site-specific drug delivery, especially in cancer therapy and antimicrobial treatments. Magnetically modulated drug delivery systems are also gaining traction, offering controlled and precise drug release.

#### 3. Advanced Transdermal and Buccal Drug Delivery Systems

The development of innovative transdermal patches and buccal bioadhesive drug delivery systems is enhancing drug absorption and patient compliance. These systems bypass the gastrointestinal tract, reducing first-pass metabolism and providing a sustained therapeutic effect.

#### 4. Herbal and Natural Product-Based Medicines

With the resurgence of interest in herbal medicines, research on bioactive compounds from medicinal plants like Emblica officinalis is gaining momentum. Standardization, formulation, and clinical validation of herbal drugs are critical areas of focus, ensuring their safety and efficacy.

#### 5. Smart Pharmaceuticals and AI in Drug Discovery

Artificial intelligence (AI) is playing a significant role in drug discovery, predicting molecular interactions and accelerating the identification of novel therapeutic candidates. Smart drug formulations, such as stimuli-responsive hydrogels and bioengineered drug carriers, are further advancing the precision of treatment.

#### 6. Overcoming Bacterial Biofilms with Inorganic Nanoparticles

Bacterial biofilms pose a major challenge in infections, reducing antibiotic effectiveness. Inorganic nanoparticles, such as silver, zinc oxide and gold nanoparticles, are being studied for their potential to disrupt biofilms and enhance antimicrobial efficacy.

#### 7. Gastro-Retentive Drug Delivery for Improved Absorption

Gastro-retentive drug delivery systems (GRDDS) are designed to prolong drug residence time in the stomach, improving absorption of drugs with narrow absorption windows. Floating, mucoadhesive and expandable systems are being optimized for controlled drug release.

#### Conclusion

Pharmaceutical sciences are rapidly evolving, with innovative technologies paving the way for more effective, safer and patient-centric therapies. As researchers continue to explore new frontiers, the future of pharmacy holds immense promise, ensuring better healthcare outcomes worldwide.

### A New Emerging Prospect in Pharmacotherapy of Hypertension

Hypertension is a growing public health problem worldwide that has been unequivocally linked to cardiovascular diseases (CVD), renal complications, and subsequent death. Resistant hypertension (RH) is a severe form of hypertension which affects over 10% of those treated for the condition; this estimate increases depending on the population to reach 56% in kidney transplant patients. RH has been defined by the American Heart Association (AHA) as a condition where blood pressure (BP) remains above the target range despite the use of three or more antihypertensive agents of different classes, including a diuretic, at their maximum tolerated doses.

Similarly, the 2023 European Society of Hypertension (ESH) guideline defines true resistant hypertension (tRH) as systolic BP remaining ≥140 mmHg or diastolic BP ≥90 mmHg, despite the appropriate use of lifestyle interventions and the administration of a three-drug combination at optimal or maximally tolerated doses. This combination must include a renin–angiotensin system (RAS) blocker (either an angiotensin-converting enzyme inhibitor organ angiotensin receptor blocker), a calcium channel blocker, and a thiazide or thiazide like diuretic. RH is associated with higher risk of hypertension-mediated organ damage and cardiovascular events, such as ischaemic heart disease, heart failure, stroke, end stage kidney disease and all cause mortality.

In recent years, a noteworthy increase in the prevalence of patients with uncontrolled primary hypertension was observed due to multiple factors including the reduction of BP target goal in line with the 2017 AHA guideline. Current guidelines recommend the addition of a mineralocorticoid receptor antagonist (MRA), such as spironolactone or eplerenone, as the preferred fourth-line drug due to their better BP lowering efficacy compared to adrenergic  $\alpha$ -blockers or  $\beta$ -blockers. However, the choice of medication should consider potential adverse effects and individual patient characteristics, especially in the presence of chronic kidney disease (CKD). For instance, spironolactone is not recommended in advanced CKD due to the risk of hyperkalemia as well as other side effects such as gynaecomastia or menstrual irregularities. This necessitates the development of novel therapeutic approaches that target new patho physiological pathways.

Currently licensed antihypertensive drug classes target mainly the RAS (direct renin inhibitor, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, and aldosterone antagonist), calcium channel blockers (dihydropyridine and non-dihydropyridine), fluid retention and sodium homeostasis (various classes of diuretics), adrenergic receptors ( $\alpha$ - and  $\beta$ -blockers), central sympatholytic drugs, and vasodilators. Notably, a pivotal component in the pathophysiology of hypertension, i.e. the endothelin (ET) system, has been somehow over looked in the context of RH. Therefore, after years of pharmacologic research silence on this high-risk condition, the Food and Drug Administration (FDA) approved, in March 2024, aprocitentan; a novel, first-in-class dual ETA/ETB receptor antagonist that serves as a new hope in the quest for an innovative add-on therapy for uncontrolled hypertension.

## **Bringing Orphan Drugs to Market**

The biggest risk is not taking any risk. The only strategy that is guaranteed to fail is not taking risks. A pharmacist, according to me plays an essential role in maintaining public health, assists in breakthrough discovery of life-saving drugs & maintains a balance of health & harmony in a society.

For some people out there or even some of my own clan, they may perceive themselves to be just someone who sells medicines for a living & walks away with a four of five digit pay thinking that's all that they are entitled to! Is that all? Is that what we are worth of or there's more to us? But as it is said, one doesn't find God outside unless we try to discover Him in ourselves...

We won't find our worth unless, we ourselves find what we are truly capable of! In the past, concept of pharmacists was as alien as the concept of selfies! (Well they are still alien to some!). As people acknowledged them, they were respected & they gained an honorable position in our society.

Currently, pharmacists have been reduced down to what people call as a 'Chemistwala'. Whenever a Pharmacy student mentions about his course in front of an Uncle or Aunty, all we got is 'Oh! Toh Chemist Shop daloge Beta, accha Business hai!'.

I wonder, wouldn't medicine, Medical & Pharmaceutical sciences die at the sound of that? Don't you feel a need to tell these people we are no business men, its human lives that we deal in!

A Pharmacist is a Health Professional, a Manufacturer, a Researcher, a Quality Control person, a medical assistant & a Dispenser all in one! Calling dispensing business is indecency on terms of ignorance as it requires sound knowledge of human body, drugs, rules & regulations or at least two to four years of formal training which should be given due respect! Most people are unaware that a pharmacist may enter Pharmaceutical industry, Food & Cosmetic industry, Medical fields & Hospitals & Dispensing as he or she may please.

So one more of our responsibilities is to make people aware in words & our actions what we are & what we stand for! We as pharmacists in past few years have accepted our responsibilities & upgraded our levels a lot. Today even a doctor expects a pharmacist to be sound with knowledge & responsible for health of patients, what I speak out of personal experience.

We are now being trained to be not just some professionals, but rather to be 'Real Health Professionals' who, at this stage itself carry out activities, camps that boost our images in our own minds & make us act, feel and be a true pharmacist.

Now we are allowed to consult patients like doctors, one day we will be both seen as one strong unit. We have made a consistent progress & will grow into a bigger system of achievers.

### Must Have Applications for Pharmacy Students

#### 1. Adobe

Acrobat Reader DCWho had not heard about PDF? PDF (Portable Document Format) can preserve the fonts and formatting of a document independent of software, hardware, and operating systems we use. Because of these benefits it is the most preferred format to share, read and print documents. Most of the articles and books we download on internet are PDFs. To handle this file, Adobe Acrobat Reader DC is one of the best and free software available today and can work with both computers and mobile devices. And what's more, it now provides free online storage (cloud) support, which means you can synchronize and use same PDF documents across multiple platforms and devices.

#### 2. Evernote

Evernote is an ultimate application that can serve as a repository for all your information. It can be used to take notes and organize them. It can be used as web clipper or link grabber to pull all useful information and websites while you Google or search for literature. You can attach PDF documents or photos with your notes. The list of advantages doesn't end here, you can create To-do lists, Flash Cards, Reminders, etc. This application which has earned several accolades for the utility it provides work across multiple platforms, both online and offline. Wonderful!! isn't it?

#### 3. Calibre

Calibre is a free e-book management application for computer. It is very useful if you have loads of ebooks in different file formats, but could not organize them properly. Calibre can automatically extract data from ebooks or can download metadata from internet for the books in your library by: Cover Page, Title, Author, Date added, Date published, Size, Rating, Series, ISBN, etc. Other than managing ebooks it offers an ebook reader, ebook converter, and an ebook editor. Wow!! Let's get organized.

### 4. Google Drive

Storing your files in the cloud has many advantages. You can view your files from any phone, tablet or computer that's connected to the Internet, and the cloud can also provide backup for files so they'll never disappear if your phone gets lost or your computer crashes. Google Drive is one of the best free file storage and synchronization service that provides 15 GB of free online storage so you can keep photos, stories, designs, drawings, recordings, videos – anything.

#### 5. WPS Office

Everyone has heard about Microsoft office, right? It is like a central tool we install on our computer to create and edit documents, presentations and spreadsheets. But as a student do we take complete use of such a high end, big sized and pricey software? We can get pirated MS office; but is it fare to support piracy, if we are getting similar features in one of the best free office alternative? WPS office (formerly known as Kingsoft office) is one of such feature rich free office productivity suite that is similar in design to Microsoft office and can handle all formats of documents, presentations and spreadsheets files. Also, it supports auto-synchronization of an opened document to the cloud. So, we can view and edit these documents from any other devices. Give it a try... You will forget MS Office.

#### 6. WordWeb

There used to be a time when you would reach for the dictionary, knock the dust off it, then run your finger down the page while looking up a mysterious word. But these days, the concept of the print dictionary has fallen by the wayside with dictionary websites and modern desktop alternatives. WordWeb is a free offline desktop dictionary that can look up words by one-click in almost any windows program. It is perfect companion while reading or writing, and is updated with thousands of latest international English words with their definitions and synonyms.

#### 7. Mendeley

Mendeley is a free reference manager and PDF organizer, especially useful for research students. It is like a companion while writing a research paper, working on a project or adding bibliography and references. With Mendeley, one can create a fully searchable and organized library for hundreds of articles in few minutes. It can automatically extract title, abstract and other citation details for the research article. One can view, read and annotate the attached PDFs. Mendeley is a also one of the easy to use reference manager that supports almost all reference styles. One can cite any article from the library while writing a research article or thesis.

### 8. Paint

As a student, while drawing banners, editing pictures or formatting image, I used to need image editor softwares and the default application that comes in everyone's mind is Microsoft Paint. However, MS Paint with its basic features is insufficient to fulfill the requirements. For the rescue is Paint.NET, which is a serious but not too complex, free image and photo editing software. It is easy to use editor that is filled with wide variety of useful and powerful tools similar to its costly counterparts (like Adobe Photoshop).

**Dr. S.K. Yadav**Professor TIT-Pharmacy

### **Stem Cells**

Stem cells are mother cells that have the potential to become any type of cell in the body. One of the main characteristics of stem cells is their ability to self-renew or multiply while maintaining the potential to develop into other types of cells. Stem cells can become cells of the blood, heart, bones, skin, muscles, brain etc. Stem cells can develop into any cell type. They are valuable as research tools and might, in the future, be used to treat a wide range of diseases. Adult stem cells are frequently used in medical therapies, for example in bone marrow transplantation. Stem cells can now be artificially grown and transformed (differentiated) into specialized cell types with characteristics consistent with cells of various tissues such as muscles or nerves. Embryonic cell lines and autologous embryonic stem cells generated through somatic-cell nuclear transfer or differentiation have also been proposed as promising candidates for future therapies.

STEM CELL BANKINGCord blood, which contains powerful life saving cells called stem cells, comes from a newborn's umbilical cord and is collected immediately after birth. Once the umbilical cord has been clamped and cut, the remaining blood in the umbilical cord is drawn into a collection bag. It may be then tested, frozen and subsequently stored in a cord blood bank for future use for the treatment of various diseases. Cord blood stem cells have been successfully used in transplant medicine for more than 20 years. Cord blood has been used to treat many life-threatening diseases including leukemia, other cancers, blood disorders, metabolic disorders, and immune diseases.

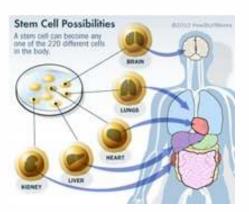
### TYPES OF STEM CELLS

- 1. Tissue stem cells
- 2. Embryonic stem cells
- 3. Induced Pluripotent stem cells (iPS cells)

### MEDICAL USES OF STEM CELL THERAPY

- Research
   Infertility
   Neurodegeneration
   Brain and spinal cord injury
- Blood cell formation Transplantation





### **Dengue and Its Vaccine**

What is Dengue? Dengue is a viral infection transmitted by the bite of infected female Aedes mosquito. Causative Agent: Dengue Virus (Abbreviated as DEN or DENV). It is an Abrovirus, belong to flaviviridae family and Favivirus Genus. There are 5 serotypes were found, namely DEN 1,2,3,4 and 5. However, WHO categorizes Dengue virus into first four serotypes only. Impact of Dengue on World's population: The disease is seen as a threat to about 40% of the World's population. About 400 million peoples are believed to be infected annually.

Mechanism: The virus enters into blood circulation from mosquito saliva during blood feeding. The virus binds to the WBC's and reproduce inside the cell and they move throughout the body. The WBC's responds by producing a no. of signalling protein such as cytokines and interferons which are responsible for many of the symptoms. Symptoms: The first infection with one of the five dengue serotypes is typically non-severe or a symptomatic. Non-severe dengue may have symptoms including, High fever, Pain behind eyes, Nausea, swollen glands, rash and severe headache Severe Dengue: They are also referred as Dengue hemorrhagic fever (DHF) or Dengue shock Syndrome (DSS). Symptoms:

- 1. Severe abdominal pain
- 2. Rapid breathing
- 3. Fatigue
- 4. Blood in vomit
- 5. Persistent Vomiting
- 6. Bleeding gums
- 7. Restlessness

Treatment: There is no specific treatment for Dengue. Dengue Vaccine: Paris Sanofi (A Sanofi Pasteur division) has won first dengue vaccine approval on 9th December 2015 in Mexico and second approval on 27th December 2015 in Philippines. This vaccine is named as Dengvaxia (CYD-TDV) and is a live recombinant tetravalent dengue vaccine that has been evaluated a dose series on 0/6/12 months. It has been registered for use in individuals who are in the age range of 9-45 years. This vaccine has passed the India test also in November 2014 but still the approval is awaited.



# Smart insulin' could be used to treat Type 1 diabetes

The Guardian today reports that "smart insulin" may ease the burden on type 1 diabetes, a condition in which the body cannot produce insulin. Such people require frequent insulin shots to stabilize their blood glucose levels. However, this can be a difficult balancing act, as glucose levels can fluctuate throughout the day. Fluctuations can also be potentially dangerous, as they can lead to complications such as hypoglycemia (low blood glucose). A particular ongoing animal study is looking into the development of a new type of "smart insulin" that contains a "molecular switch", allowing it to directly respond to blood glucose levels, to bring them under control.

When injected into diabetic mice, it was able to normalize their blood glucose levels when they were given glucose challenges (where mice are given a sugary drink) even as long as 13 hours after the initial injection. This suggests that the modified insulin could help with blood glucose control and have a long duration. Though promising, this research is in the very early stages. This modified insulin has so far only been tested in mice and it is far too early to know whether there could be a new insulin treatment available for type 1 diabetes. What kind of research was this? The study looked at developing a type of insulin that is tailored to the individual.

In this study, the researchers aimed to prepare a type of insulin that has a "molecular switch" that switches it on or off, depending on glucose levels.. It is hoped that this treatment could one day give more targeted insulin therapy with better glucose control. What did the research involve? The research team prepared their modified insulin, which contained two small chemical molecules bound to insulin. One of the molecules (phenylboronic acid, PBA) is a "glucose sensor", while the other molecule (an aliphatic domain) helps to give it a long "halflife" so it has similar duration in terms of action to long-acting insulin.

The researchers then tested this new insulin treatment in a mouse model of type 1 diabetes (mice that had been given a treatment to destroy their insulin-producing cells). The main analysis compared the glucose control achieved with the new insulin to that achieved using standard insulin injections, all using diabetic mice.

They also compared the effects of their insulin with glucose challenges given to healthy, nondiabetic mice. Conclusion The researchers hope that this study could one day lead to the development of an insulin treatment for people with type 1 diabetes that would give better blood glucose and reduce the risk of complications such as hypoglycemia. While it is perfectly fine to be optimistic, there is no guarantee that promising research in mice might necessarily lead to effective treatments for humans



### **A.P.J ABDUL KALAM**

Leadership and learning are indispensable to each other. Here is some information which will definitely not describe the whole of Dr. APJ Abdul kalam but at least the things which every Indian must know about the man who gave his whole life for the nation and also the people of India.

Millions of Indian youth were inspired to dreambig by the APJ Abdul kalam. Kalam's books, speeches, and interactive sessions with children across the country went a long way in propelling the youth to work hard to turn those dreams into a reality. He was a man of vision, who is always full of ideas aimed at the development of the country and is also often also referred to as the Missile Man of India. People loved and respected Dr APJ Abdul Kalam so much during his tenure as President that was popularly called the "People's President". He was a mediocre student at school and he had average grades, though he used to be highly appreciated for his will to study. He completed his school education from Schwartz higher secondary school at Ramanathapuram. After that he studied his Bsc Degree education from Saint Joseph College in Tiruchirappalli, Tamil Nadu.

He had his major in Physics. He finally graduated from college in the year 1954. Then he moved to Madras in 1955 to study aerospace engineering in Madras Institute of Technology. Though as a child he had a dream of becoming a fighter pilot, he missed his chance very narrowly. But it didn't break him down. His contributions are immense. He was responsible for the development of India's first satellite launch vehicle, the SLV- 3, development and operation of strategic missiles and building indigenous capability in critical technologies. He was appointed as the chairman of Technology Information, Forecasting and Assessment council (TIFAC). He guided a number of Technology projects and missions to take India into the 21st century.

APJ Abdul Kalam was elected as the 11th president of India in 2002 and stayed in his position for 5 years. Widely referred to as the people's President, he returned to his civilian life of education, writing and public service after a single term. Abdul Kalam held various positions under ISRO and DRDO and became Principal Scientific Adviser to the Government Of India holding the rank of a Cabinet Minister.He has received honorary doctorates from 30 universities and the country's three highest civilian honours – Padma Bhushan (1981), Padma Vibhushan (1990) and Bharat Ratna (1997). This great personality had his last breath while giving a lecture at IIM, Meghalaya on 27th July 2015. He had a sudden cardiac arrest and he died on the spot. Whole country was in shock and mourned the death of him. He may not be present physically but his works will always be remembered. And all we can do is to contribute our part as a new generation kid in making India a developed country. This is what he expressed in his book" India 2020-A vision for the New Millennium".

Ms. Kiran Satnami Asst. Professor TIT-Pharmacy

## Diet or exercise? 'Energy balance' real key to disease prevention

A majority of world population is becoming overweight or obese, a factor in the rapid rise in common diseases like diabetes, heart disease, cancer, high blood pressure and more. Our health professionals are currently working in silos and must work together to educate and promote energy balance as the key to better health. The obesity crisis is one of the greatest public health challenges of our generation. Energy balance can help us work towards a solution so our children aren't saddled with the same health challenges we currently face. Managing our diet, exercise schedule and proper nutrition is the need of hour.

Improving Your Nutrition in Four Simple Steps Improving your diet doesn't require significant resources to invest in a nutritionist or personal trainer. Whether you need a complete diet overhaul or minor adjustments, you can positively affect your health with just a few simple changes to your diet and eating habits. Follow these "do-it-yourself" nutrition tips to achieve a healthy body weight, reduce your risk of chronic disease and maybe even spice up your daily plate.

There is no respect for others without humility in one's self to achieve a healthy body weight. For most people, this means reducing daily energy intake by several hundred calories to sustain weight loss. Although this task sounds overwhelming, just one or two small changes will do the trick if they are maintained over time. For example, you can: Substitute water for sugary soda and fruit drinks. If it's the carbonation you crave, choose unsweetened, carbonated water.

- Beware the coffee-based drinks that are made with whole milk, sweetened with syrup and topped with whipped cream. Ask for skim milk and "no whip" to cut calories.
- Reduce the amount of added fat. At 100 calories per tablespoon, salad dressing, butter, margarine, cream cheese and peanut butter are energy dense. You can save a significant number of calories by using these sparingly or selecting low-fat alternatives.
- Use less fat in cooking and baking. Substitute fruit purées for a significant portion of the oil or butter in baked goods. Thicken soups and sauces with vegetable purées.
- Buttermilk is an excellent substitute for sour cream or whole milk in cream soups, sauces or mashed potatoes.
- \* Revamp your snacks. Rather than snacking on chips, crackers, cookies or candy, which are high in fat, trans fat and calories, opt for a piece of fresh fruit, baby carrots, air-popped popcorn or a cup of low-fat yogurt. If you crave a salty snack, like chips or crackers, choose the baked or reduced-fat version.

### **ONLINE PHARMACY**

An online pharmacy, Internet pharmacy, or mailorder pharmacy is a pharmacy that operates over the Internet and sends the orders to customers through mail or via shipping companies.

Online pharmacies might include: Pharmacy benefit manager: A large administrator of corporate prescription drug plans Legitimate Internet: Pharmacy in the same country in which the person ordering resides. You don't have to be great to start, but you have to start to be great. Legitimate Internet pharmacy in a different country than the person ordering.

This pharmacy usually is licensed by its home country and follows those regulations, not those of the international orders.

Illegal or unethical internet pharmacy: The web page for an illegal pharmacy may contain lies about its home country, procedures, or certifications. The "pharmacy" may send outdated (expired shelf life) or counterfeit medications and may not follow normal procedural safeguards.

Home delivery of drugs: Conventional stationary pharmacies usually have controlled distribution systems from the manufacturer. Validation and good distribution practices are followed. The shipment of drugs through the mail and parcel post is sometimes a concern for temperature-sensitive pharmaceuticals.

For example, the US FDA found the temperature in a mail box in the sun could reach 136 °F (58 °C) while the ambient air temperature was 101 °F (38 °C). Shipment by express mail and couriers reduces transit time and often involves delivery to the door, rather than a mail box.

The use of insulated shipping containers also helps control drug temperatures, reducing risks to drug safety and efficacy. Risks and concerns: Illegal or unethical pharmacies sometimes send outdated, substituted, or counterfeit medications.

Sometimes an online pharmacy may not be located in the country that is claimed. For example, one study of drug shipments claiming to be from Canada revealed many actually originated in several different countries and was often bogus medications.

One more disadvantage of this facility is that children can order controlled substances without adult supervision. Other concerns include potential lack of confidentiality, improper packaging, inability to check for drug interactions, and several other issues.

Hence, one needs to be extra cautious while ordering drugs online due to the pros and cons associated with this service.

Mrs. Saby Sodagar Asst. Professor TIT Pharmacy

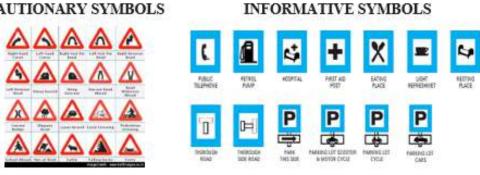
### **ROAD SIGNS AND SYMBOLS**

Road symbols given in circles are mandatory, those in triangles are cautionary and the ones in squares are informative

### MANDATORY SYMBOLS



### CAUTIONARY SYMBOLS



## **Nature's Crude Gifts: A Healing Rhyme**

From roots and leaves to seeds so small, Nature's crude drugs heal us all. Untouched, pure, from earth they rise, A cure for pain, a soothing prize. The willow's bark, so rough and brown, Brings fevers and aches tumbling down. Foxglove's leaves, with caution sown, Make weak hearts strong when finely known. Cinchona's bark, both red and white, Keeps malaria from its bite. Opium's sap, so rich yet grim, Eases pain but walks the brim. Aloe's gel, so cool and clear, Soothes the burns we often fear. Ginger's root, with warming grace, Calms the stomach, sets the pace. Senna leaves, a laxative mild. Gentle cure for man or child. Ginseng roots, with strength untold, Boosts the weak, makes spirits bold. Yet heed the rule—dose it right, For crude drugs hold both dark and light. Nature's wisdom, old and wise, Hides its magic in disguise.

Ms. Sakshi Hirkane

Lecturer TIT-Pharmacy

### **EFFECTS OF DRUGS...**

Overdose of histamine causes histaminic shock,

Nifedipine, verapamil cause calcium channel block.

Caffeine is CNS stimulant, which stimulate our brain,

Antipyretic and analagesic cure fever and relief our pain.

Sedatives and hypotonics cause CNS depression

Heroin, cocaine decrease motion and increase our tension.

Levodopa, sinemet give anti-parkinsonism

For treatment of psychosis ,tranquilizers are perfect.

Angina pectoris creats pain over the chest As an anti-angina drug nitroglycerin is best.

Atenolol, propranolol can decrease hypertension

Atropine ,morphine used in pre -anesthetic medication.

Salbutamol used to treat asthma and heart block

Adrenaline reduces hypogycemic and anaphylactic shock.

For treatment of nephrosis a good diuretic is thiazide

Congestive heart failure is treated by Nanitroprussides.

Sing this poem once in day

Memorize all the drugs in easier way......

Miss. Anjali Trivedi Lecturer TIT-Pharmacy

### **IDEOMOTOR PHENOMENON**

#### "THE PARANOMAL FORCE, OR IS IT?.."

They are all based upon the ideomotor effect, a phenomenon well known to psychologists whereby suggestions, beliefs or expectations cause unconscious muscular movements.

The Spiritualist movement was Pretty big in the 1840's and 1850's. It provided a way for people to talk to their dead loved ones. One method of communication was the Ouija board. Still popular today, the board was covered in letters, numbers, and simple words (like "yes" or "no"). People would then place their hands on a wooden piece called a planchette and ask the spirits a question. A ghost would respond by moving the planchette from letter to letter, spelling out a response (or unleashing Captain Howdy). Another creepy method for interacting with spirits was table tilting. During a séance, people would gather round a table and place their hands on the tabletop. To everyone's surprise, the table would start moving by itself. It might tilt up on one leg, levitate of the ground or scoot around the room.

Con men were definitely involved in some of these incidents, but were all these encounters frauds? Renowned physicist Michael Faraday wanted to find out.

Through clever experimentation, Faraday discovered that the tables were often moving thanks to the ideomotor effect. This is when the power of suggestion causes our muscles to move unconsciously. People expected a table to move so they unintentionally moved it. A similar event took place in 1853 when four doctors held an experimental séance. When they secretly told half the participants the table would move to the right and half it would move left, the table didn't budge. But when they told everyone it would move in one direction, the ideomotor effect struck again! This same principle applies to the Ouija board. It's our own muscles that are doing the spelling, not the spirits.

#### **USES/APPLICATIONS:**

**RESPONDING TO QUESTIONS:** It is strongly associated with the practice of analytical hypnotherapy based on "uncovering techniques" such as Watkins "Affect Bridge", whereby a subject's "yes", "no", "I don't know", or "I don't want to answer" responses to an operator's questions are indicated by physical movements rather than verbal signals; and are produced per medium of a pre-determined (between operator and subject) and pre-calibrated set of responses.

Biomimicry is the imitation of the models, systems, and elements of nature for the purpose of solving human problems. The term Biomimicry came from ancient Greek word bios- means life and mimesis- means to imitate. Biomimicry has given rise to new technologies inspired by biological solutions at macro and nano scales. Humans have looked at nature for answers to various problems throughout our existence.

Some examples of Biomimicry: One of the early examples of Biomimicry was the study of birds to enable human flight. Although never successful in creating a "flying machine", Leonardo da Vinci (1452-1519) was a keen observer of the anatomy of flight of birds, and made numerous notes and sketches The Wright Brothers succeeded in flying the first heavier than aircraft in 1903, derived inspiration from observation of pigeons in flight. Velcro; the most famous examples of Biomimicry was invented in 1941 by Swiss engineer George de mestral. Mestral first got the idea for this new material from the burrs that were often stuck to his dog's hair. These miniature hooks easily caught on to anything shaped like animal fur, clothing or hair. By mimicking the characteristics of whale's fins, tails and flippers, engineers have been able to design more efficient wind turbines. Toronto based company Whale power has come up with a revolutionary blade design that has been shown to increase annual electrical production by 20% while greatly reducing noise. This design can also be used on fans, pumps and compressors and can offer improvements in the conservation and collection of renewable energy.

**BIOMIMICRY** 



Mr. Ahsan Ansari

# Paem Section

### Dad

A Dad is...

Someone who holds us in his arms as we enter into this world,

Who teaches us to walk as we toddle, and supports us all along, as we grow up.

Someone who encourages all our efforts, and appreciate us wholeheartedly,

when we achieve a goal,

who comforts us over a disappoinment and helps us to smile instead of shedding a tear. Someone who listens patiently to our never ending doubts, fears

and put them to rest and guides us throughout. Someone whose eyes shine with pride and happiness at every little achievement of ours, who is always there with love and prayer in his heart. A DAD IS A LIFELONG FRIEND.

Mr. Ritik Kumar

### THANK YOU TO TERRORISTS

60 hours of fighting, What a terrible war! But I still 'Thank you' for a reason To wake the sleeping officials

We wept and were helpless, Even were in the same place

But I still 'Thank you' for a reason, For uniting

We were the actual culprits, Ignored the facts, But I still 'Thank you' for a reason, For making us realise our duties. We wished to save the innocent, As well as you

But I still 'Thank you' for a reason, For helping us to succeed in that too. We never liked to be violent.

You forced us to pick our guns But I still 'Thank you' for a reason,

For making us realise that we are 'INDIANS'

Mr. Om Kushwaha

# Paem Section

### **Life of a Pharmacy Student**

A Pharmacy student is such a mess, He is on duty more and rests less. He's up early and struggles all along,

Runs to catch a train with earphones playing song.

Arrives in college late during an important session

And when reaches on time, the day's off and there are no lessons!

Comes with confidence that he's done all work, And when comes to know of a forgotten assignment, tries to complete it before the time ends and teacher in lurks.

He sits in the canteen but to chat with friends, And piles up in hangout eateries, as the college ends.

Fast food, coffee are his best buddy, Whatsapp, Insta...for a selfie he's always ready!

He fears vivas and presentations,

And remembers to study and collect notes mostly during examinations.

But above all he loves his teachers, friends and college life more than anything!

He won't give it away or exchange it in return of nothing!

Mr. Pranav Jha

### **Lines Of Success**

Essence holds its dream entire, Strengthens hope true into fire To fit in it to be higher To the most breezed to aspire.

Its strength with a wind-lot by, Sprouts ambition to the sky To bloom into a smile high. Happiness across to fly,

Its fluttering wings in flight Spreads across the field its light. Blossomed is success glass-bright With glory mounting in sight.

Heart content is in sublime, Remains diamond-worth in prime. Victory does reign in clime, Hailing joy bell-like to chime.

Ms. Rida Khan



### Women empowerment......

Women empowerment is all about making women both socially and financially independent.

It is process in which women make their own independent decision.

When women are entitled to decide it gives them a sense of empowerment and more worth.

Providing proper education to a girl child is the main agenda of women empowerment.

It is also including educating working women and engaging them in job.

Empowered women can contribute to nation building by joining various sectors.

Educated men can feed a family but educated women can speed its growth....

Ms. Sanvi Jain

### WHY ME?

IF YOU HAVE TO ASK WHY ME? WHEN YOU'RE FEELING REALLY BLUE, WHEN THE WORLD HAS TURNED AGAINST YOU AND YOU DON'T KNOW WHAT TO DO, WHEN IT POURS COLOSSAL RAINDROPS, AND THE ROAD'S A WINDING MESS. AND YOU'RE FEELING MORE CONFUSED THAN YOU EVER COULD EXPRESS. WHEN THE SADDENED SUN WON'T SHINE, WHEN THE STARS WILL NOT ALIGN, WHEN YOU'D RATHER BE INSIDE YOUR BED. THE COVERS PULLED ABOVE YOUR HEAD. WHEN LIFE IS SOMETHING THAT YOU DREAD. AND YOU HAVE TO ASK WHY ME? . . . THEN WHEN THE WORLD SEEMS RIGHT AND TRUE

Ms. Jully Kushwaha

# Poem Section

# Does success blind the man completely?

Not wait and go for its show immediately? If he is earthly man then will slowly digest, Means and ways set first and then suggest, Only clever and seasoned will be enjoying, All of sudden success may lead to annoying, Way of living may bring tremendous change, Confidence enhanced and disorderly manage, Somebody may diversify to honouable living, Purchase of luxurious cars and self driving, Honest may prefer and turn to charity reviving, Rest may go for sight seeing and sea diving, It brings dramatic change in way of thinking, Sudden urge and change some time lead to sinking, Arrogance and power blind a person, As sudden change you may find with season, You look towards fellow brothers as inferior creature. Their hello and address bite you as vulture, You feel their company danger for future, Ill feeling and distrust in mind nurture. This all takes away from main stream, Success story makes you to believe as dream, You feel as if you had God given chance, Forget the past and visit the club for dance, Drink, drug and smacks are natural ally, Money in hand doesn't look silly, Pushed to the dark as time go on, No way to come back, not even soon, It will be nightmare or bad dream, Success may blind but not allow to scream, You will be completely cut off from friends, Down to earth when success story ends Success has another story to tell. People have learnt how to remain well, Act as humble and good ideas sell, Where does then bad or descend the hell.

Mr. Nikhil Rathore

### **Forever**

Once opportunity missed means gone out of hand Work remains undone as promised by friend They are all missed and gone forever, Will not come back again and lost for ever Have you ever tried for bright carrier and success? Constant thrust and work without any recess, New avenues, areas and seeking complete access, With calculated move without making excess, Perfect seeding with good and honest intention Sides all secured with full prevention. Zeal coupled with enthusiasm for bright future, Taking utmost care for ideas to nurture, Never suffered a set back or even failure Plugging all loop holes and making it sure If today is missed then let it not tomorrow, Happiness and iov on face not reflecting sorrow. One step forward with two steps backward, Journey should go on with aim forward, No hurdles should block or make us to leave Always look beyond...... Believe in self and work with own hands, Never put blind faith even in friends, May be not good but prove at the end, Sufferings to be undergone with simple amends, Today's work may not pave the way, Bright future should have complete say, Friends brought near and foe kept away, Success to wed and failure not in pray, There is no use crying over split milk, If cotton is in store then why cry for silk? Only concerted efforts with dedicated approach, Why we need advice and lessons from coach? Have a sense of good humour for good or bad, Not to laugh at success and at failure not sad, Uniform dealing at matters with determined will, Success may lie at your feet but destiny not still.

# Poem Section

## Friendship

There's a miracle called "Friendship." Oh what a miracle it is in just keepin' it real. The "Friendship" dwells way, way down deep in the heart and soul of a person or individuals. You don't know how this "Friendship" happens, it just happens so soulfully. It is a light from the "Friendship" that provides sunlight to the soul whenever it happens. But you know and recognize the special lift the "Friendship" provides. The "Friendship" inspires encouragement, inspiration, joy, and motivation. When you need that special lift from the "Friendship" that keeps you pushing on and upward for success and perservance to make it through all the storms and challenges of life, it is there. When you realize the "Friendship" that you have with a person or individuals, you know it is God our Heavenly Father most precious gift sent from above by his Angels of Love. Through the development of the "Friendship" you are able to recognize the rare and special jewel of the "Friendship" and your spirtual worth in the "Friendship." This "Friendship" lends an ear, shares a word of praise, and allows one to open their heart. Oh what a "Friendship" to enjoy to the end of time. "Friendship" - just keepin' it real.

Ms. Namrata Shende

### "YOU CAN"

If you think you're beaten, you are... If you think you dare not, you don't... If you like to win... but think you can't... It's almost a cinch, YOU WON'T!! If you think you'll lose, you're lost... For out in the world you'll find... Success begins with a fellow's will... It's all in a state of mind. If you think you're outclassed, you are... You've got to think high to rise... You've got to be sure of yourself before... You can ever win the prize. Life's battles don't always go... To the stronger or faster man... But sooner or later the one who wins... IS THE ONE WHO THINKS HE CAN!!!

### **Don't Quit**

When things go wrong as they sometimes will, When the road you're trudging seems all up hill,

When the funds are low and the debts are high And you want to smile, but you have to sigh, When care is pressing you down a bit, Rest if you must, but don't you quit. Life is strange with its twists and turns As every one of us sometimes learns And many a failure comes about When he might have won had he stuck it out; Don't give up though the pace seems slow-You may succeed with another blow. Success is failure turned inside out-The silver tint of the clouds of doubt. And you never can tell just how close you are, It may be near when it seems so far; So stick to the fight when you're hardest hit-It's when things seem worst that you must not auit.

For all the sad words of tongue or pen The saddest are these: "It might have been!"

Mr. Mannu Pawar



# Nanorobots: Futuristic Technology

Nanotechnology is a fascinating science for many scientists as it offers many challenges. One such challenge is nanorobots, which once thought to be a fantasy has come into reality now The study of nanorobots has lead to the field of nanomedicine. The application of Nanotechnology to the field of medicine is commonly called as nanomedicine. Nanomedicine offers the prospect of powerful new tools for the treatment of human diseases and the improvement of human biological systems. Machines constructed at the molecular level (nanomachines) may be used to cure the human body of its various ills. Nanorobots are Nanodevices that will be used for the purpose of maintaining and protecting the human body against pathogens. The proposed application of nanorobots can range from common cold to dreadful disease like cancer. Some such example can be pharmacyte, respirocyte, microbivores, chromallocyte and many more. The present era of nanotechnology has reached to a stage where scientists are able to develop programmable and externally controllable complex machines that are built at molecular level which can work inside the patient's body. Nanotechnology will enable engineers to construct sophisticated nanorobots that can navigate the human body, transport important molecules, manipulate microscopic objects and communicate with physicians by way of miniature sensors, motors, manipulators, power generators and molecular-scale computers. The idea to built a Nanorobot comes from the fact that the body's natural nanodevices; the Neutraphiles, Lymphocytes and White blood cells constantly rove about the body repairing damaged tissue, attacking and eating invading microorganisms, and sweeping up foreign particles for various organs to break down or excrete. Nanorobotics is emerging as a demanding field dealing with miniscule things at molecular level.



# Robots; - The Next Phase in Pharmaceutical Automation

Drug makers rely on automated equipment as a matter of course. Yet unlike the food and semiconductor industries, the pharmaceutical industry has been slow to adopt one particular form of automation: robots. The hesitation has partly resulted from a lack of expertise, the perceived high initial cost of robotics, and the misperception that robotic systems are too complex and require complicated programming. But current computer and peripheral systems have increased the capabilities and flexibility of robot technology, and some automation experts predict robots soon could be critical to drug manufacturers' efforts to reduce costs, ensure consistent product quality, and increase efficiency. Like other industries, the pharmaceutical industry is increasingly concerned with the sustainability of its operations. To improve their sustainability, drug makers are attempting to reduce waste and pollutants, conserve energy, and improve efficiency. Robots can help the industry achieve these goals. For example, robots' motors, drives, and gearboxes are 9095% energy efficient, says Barrett. Economic conditions are raising the stakes and intensifying the competition in the pharmaceutical industry. Drug makers are intently seeking ways to reduce their expenses, increase their efficiency, and make high-quality products. Robots can help companies achieve these ends by providing speed, precision, repeatability, and flexibility. Because they can improve discovery, pilot production, and smallscale production, robots can be a particularly powerful foundation for the growing biotechnology industry.

Ms. Shivani Gautam

# **Microchip for Drug Delivery**

Drug delivery is a very important aspect of medical treatment. Much research has been ongoing in the quest to find an ideal system for drug delivery within the human body. The effectiveness of many drugs is directly related to the way in which they are administered. Unfortunately, this can make it very difficult to select the proper drug delivery system. Some therapies require that the drug repeatedly administered to the patient over a long period of time, or in specific amounts at a time in order to maximize drug effectiveness. It is of a great advantage to find a drug delivery device that is capable of controlled, pulsatile or continuous release of a wide variety of drugs and other therapeutics that can be safely implanted inside the body. This device is less complex and much more dependable than the devices that attempt to control drug release rate (i.e. electro-mechanical or polymer systems). The microchip can be created by general micro-fabrication techniques and can also be self-contained, which eliminates the need for patient or doctor intervention. The proposed device described (assuming one dose per day) can last over a year; however, the delivery abilities do depend on patient need.

Ms. Deeksha Bisen

# Just for Fun!!!!!

Do we know actually know the full form of some words??? Newspaper = North East West South past and present events report. Chess = Chariot, Horse, Elephant, Soldiers.

Cold = Chronic Obstructive Lung Disease. Joke = Joy of Kids Entertainment.

Aim = Ambition in Mind.

Date =Day and Time Evolution. Eat =Energy and Taste.

Tea = Taste and Energy Admitted. Pen = Power Enriched in Nib.

Smile =Sweet Memories in Lips Expression. Bye =Be with you every time





- 1. There is rope by which you can never skip with.
- 2. One of the tires is a flat tire but he is still able to reach the destination without replacing the tire. How?
- 3. I can make the number one disappear by adding something to it. Can you?
- 4. What has a neck but no head?
- 5. Who has to be broken before you use it?
- 6. Who is silent in the parliament?

# Solution:

- 1. Europe,
- 2. Stepney Tire,
- 3. Just add G before the number ONE and it will be GONE,
- 4. A bottle,
- 5. An Egg,
- 6. Letter A

# Events













# Events













I am specialist in medicine
I manufacture and research medicines
I am a regulator of the medicines and ensure its quality
I am counselor to the patients
I ensure safe and effective medicines

I am a Pharmacist: a healthcare professional



# Obituary



Late R.M. Purohit केवल स्मृति शेष....