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CHIEF EDITOR

Dr. Rajiv Jash

STUDENT EDITORS

Pratyushi De and Rupsa Dutta Roy



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PREFACE

We are delighted to present the 7th volume of Shadow Cultivate, a vibrant and multifaceted academic magazine published under the aegis of Sanaka Educational Trust's Group of Institutions, and curated under the insightful leadership of Chief Editor Dr. Rajiv Jash. This publication is more than a compilation of articles and artworks—it is a collective journey of thought, creativity, inquiry, and expression that brings together scientific intellect, literary soul, and civic consciousness into a single cohesive platform. The vision behind Shadow Cultivate stems from the desire to break disciplinary silos and to encourage students, scholars, artists, and educators from all streams to participate in an open dialogue that both reflects and shapes the academic spirit of our time. This magazine is not just a reflection of our institutional excellence but a mirror of our students' voices—of their curiosity, concerns, creativity, and courage. This issue is thoughtfully divided into three major sections: Scientific Advancements, Art & Literature, and Current Affairs. Each segment opens a window into a different realm of human understanding while remaining rooted in the larger ethos of education, inquiry, and cultural expression. The Scientific Advancements section covers emerging and impactful areas such as modern drug delivery techniques, drug discovery and many more. These articles, meticulously researched and articulated, reflect the scientific temperament of the young contributors and provide valuable insights into fields that are shaping our future. In Art & Literature, we have curated a soulful selection of poems, paintings, short stories, and reflective pieces—both in English and regional languages—that reflect the emotional, cultural, and spiritual landscape of today's youth. Whether it is the empowering image of the divine feminine in visual art, the moving poetry that explores love, identity, or nature, or prose pieces that narrate stories of pain, escape, hope, and resilience, these entries reveal the depths of student thought and artistic potential. This section brings sharp focus to the political, social, and cultural conversations that matter that empower young minds to look beyond the classroom and engage meaningfully with the world around them. This magazine is the result of months of hard work, collaboration, and unwavering enthusiasm. We express our heartfelt gratitude to all the student authors, artists, editorial team members, and faculty mentors who have contributed their time, talent, and passion to bring this issue to life. Each submission was carefully reviewed and thoughtfully presented, ensuring a high standard of academic and creative quality throughout. We would also like to thank the Sanaka Educational Trust's Group of Institutions for their constant encouragement and support. Under the dynamic guidance of Dr. Rajiv Jash, this magazine has found its rhythm and voice—elevating the collective spirit of our institution and enriching its intellectual culture. As you turn these pages, we invite you to engage—not just as a reader but as a fellow cultivator of ideas. We hope that Shadow Cultivate Vol. 7 inspires critical thought, stirs your imagination, and awakens a deeper connection to the world we live in. May this be the beginning of an ongoing dialogue between disciplines, languages, generations, and minds.



Let this be not just a magazine, but a movement of minds—a shared space where science meets poetry, art meets activism, and thought meets transformation.

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Shadow Cultivate Vol. 7

Sanaka Educational Trust's Group of Institutions

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DIRECTOR'S NOTE



It is with great pride and pleasure that I extend my warmest regards through this special note as we unveil Shadow Cultivate, an intellectual and creative endeavour initiated under the banner of Sanaka Educational Trust's Group of Institutions. More than just a magazine, Shadow Cultivate stands as a dynamic forum that captures the academic, artistic, and innovative expressions of our students and faculty. It bridges disciplines, ideas, and imaginations—where science meets art, and thought meets action. This edition reflects the diversity and depth of our institution, with contributions spanning scientific advancements, literary works, socio-political commentaries, and current affairs. At the heart of this vibrant collective is the Department of Pharmacy, a pillar of academic excellence within our institution. The articles and research insights from this department illustrate not just the intellectual potential of our students, but also their readiness to address the challenges of modern healthcare with integrity, innovation, and empathy. Pharmacy as a profession is rapidly evolving in the 21st century. It is no longer limited to dispensing medicine; it has expanded into areas such as drug discovery, nanotechnology, pharmacovigilance, regenerative medicine, and personalized therapeutics. Our Department of Pharmacy recognizes this shift and is committed to preparing students for this broader, interdisciplinary future. The work showcased in this magazine—on topics like green chemistry, nanotechnology in neurology, sustainable drug design, and smart drug delivery systems—demonstrates a forward-thinking mindset. It is especially heartening to see students not only engaging in rigorous scientific inquiry but also reflecting on the ethical and environmental dimensions of their work. This balance of scientific rigor and social responsibility is what we aim to instill through our academic programs. Shadow Cultivate also serves as a mirror to the cultural and emotional richness of our campus. Poems, paintings, and prose featured in this volume remind us that science and art are not opposites but allies in the pursuit of truth and beauty. The inclusion of multilingual literary expressions and artwork ensures that every student voice—regardless of discipline or background—is heard and celebrated. As Director, I believe that this spirit of openness, diversity, and interdisciplinary dialogue is essential to nurturing the next generation of responsible global citizens. I congratulate all contributors, editors, and coordinators who have worked tirelessly to bring this vision to life. Your dedication is visible in every page and every word. May this magazine continue to grow as a testament to the values we cherish—excellence in education, innovation in research, and compassion in service. I urge all readers—students, faculty, and visitors—to engage deeply with this volume, and to carry forward the ideas and inspirations it offers. Let us cultivate not only knowledge, but also the wisdom to use it for the betterment of humanity

FROM THE PRINCIPAL'S DESK



It is with great pride and a profound sense of purpose that I, on behalf of the Department of Pharmacy, Sanaka Educational Trust's Group of Institutions, share this message to honour Shadow Cultivate—a magazine that truly embodies the harmony of academics, culture, and intellect within our institution. This publication has served as a vibrant platform for diverse voices and ideas, creating a meaningful bridge between science and the humanities—an ideal our department deeply upholds and nurtures.

The Department of Pharmacy has always been dedicated to shaping students into holistic professionals—individuals who possess not only technical expertise but also ethical values, social awareness, and cultural sensitivity. In this light, Shadow Cultivate stands as a perfect reflection of the multidisciplinary nature of modern pharmacy education. The insightful contributions of our students in this edition highlight their engagement with contemporary global challenges and their participation in an evolving academic environment. Their ability to merge scientific reasoning with creative expression—through poetry, prose, and art—is truly inspiring and reaffirms our belief that scientific excellence must coexist with emotional intelligence and creativity.

As the head of the department, it fills me with pride to witness our students evolving into future pharmacists, well-prepared to meet the complex and ever-changing demands of healthcare, technology, and patient-centric innovation. At Sanaka Educational Trust's Group of Institutions, we remain committed to fostering a learning ecosystem that extends beyond classrooms and laboratories. With state-of-the-art facilities, committed faculty, and a student-centered philosophy, we strive to ensure our learners are not only employable but also research-driven and socially responsible.

The enthusiasm and initiative shown by our students in contributing to Shadow Cultivate stand as strong evidence of this culture of academic freedom and encouragement. I extend heartfelt appreciation to the editorial board, faculty mentors, and every contributor whose efforts made this publication possible. Their collaboration truly represents the spirit of unity and shared purpose that defines our department and institution.

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1

Scientific
Advancements

A Review on QSAR (Quantitative Structure–Activity Relationship) and Its Applications in Drug Design

Sabuj Bhattacharjee, Abhimannu Shome

Drug discovery is a time-consuming and costly process that involves the design and optimization of molecules with desirable biological activity. The concept of QSAR provides a rational way to understand how structural modifications influence biological effects. The principle was first introduced by Corwin Hansch and Toshio Fujita in the 1960s, emphasizing the relationship between physicochemical properties and pharmacological response. QSAR has now become an essential tool in medicinal chemistry, toxicology, and pharmacokinetic modeling.

Concept and Principle of QSAR

QSAR assumes that the biological activity of a compound is a function of its chemical structure. Mathematically, it is represented as:

$$\text{Activity} = f(\text{physicochemical properties of the molecule})$$

These properties include hydrophobicity, electronic effects, steric factors, and hydrogen bonding ability. The general goal is to derive a regression equation that predicts activity for new compounds based on these descriptors.

Types of QSAR Models

1D-QSAR: Uses molecular properties like logP (partition coefficient) or pKa values to predict activity.

2D-QSAR: Considers two-dimensional molecular features such as atom connectivity and molecular fingerprints.

3D-QSAR: Involves spatial arrangement of atoms using methods like CoMFA (Comparative Molecular Field Analysis) and CoMSIA (Comparative Molecular Similarity Indices Analysis).

4D-QSAR and beyond: Incorporates conformational flexibility, receptor interactions, and solvation effects, enhancing prediction accuracy.

Molecular Descriptors

Descriptors are numerical values representing molecular properties. Common descriptors include:

Hydrophobicity (logP) – influences absorption and distribution.

Electronic parameters (Hammett constant, dipole moment) – affect reactivity and binding affinity.

Steric factors (molar refractivity, Taft constant) – indicate spatial effects.

Topological indices – describe molecular shape and connectivity.

Statistical Methods in QSAR

Regression analysis, mainly Multiple Linear Regression (MLR), is commonly used to build QSAR equations. Other methods include Partial Least Squares (PLS), Principal Component Analysis (PCA), and Artificial Neural Networks (ANN). Validation of models using statistical parameters like correlation coefficient (R^2), cross-validation (Q^2), and standard error ensures reliability.

Applications in Drug Design

QSAR (Quantitative Structure–Activity Relationship) is extensively applied in various aspects of drug discovery and development. It plays a crucial role in lead optimization by identifying structural modifications that can enhance a compound's potency while minimizing toxicity. QSAR models are also used for predicting biological activity, allowing researchers to screen and prioritize compounds before synthesis, saving time and resources. In enzyme inhibitor design, QSAR has been applied to develop agents such as COX-2 inhibitors and acetylcholinesterase inhibitors. Additionally, QSAR assists in toxicity prediction, estimating potential adverse effects of chemicals, and in pharmacokinetic modeling, providing

insights into ADMET properties including absorption, distribution, metabolism, excretion, and toxicity.

Recent Trends

Integration of QSAR with machine learning and molecular docking has greatly improved predictive power. The use of large chemical databases and computational tools like KNIME, MOE, and AutoQSAR simplifies the modeling process.

Conclusion

QSAR provides a scientific basis for correlating chemical structure with biological activity, reducing experimental workload and cost. With advances in artificial intelligence and cheminformatics, QSAR continues to play a vital role in modern drug design, guiding the discovery of safer and more effective therapeutic agents.

2

Scientific Advancements

A Review on UV–Visible Spectrophotometric Methods for Quantitative Drug Estimation

Indra narayan Chowdhury, Tulshi hakraborty

Analytical methods play a crucial role in ensuring the quality, safety, and efficacy of pharmaceutical products. Among various analytical tools, UV–Visible spectrophotometry occupies a central place due to its simplicity and versatility. It is primarily used for the quantitative estimation of drugs that absorb in the ultraviolet (200–400 nm) and visible (400–800 nm) regions of the electromagnetic spectrum.

Principle of UV–Visible Spectrophotometry

The technique is based on the Beer–Lambert Law, which states that absorbance

(A) is directly proportional to the concentration (C) of the absorbing species and the path length (l):
$$A = \epsilon \times l \times C$$
where ϵ is the molar absorptivity. Thus, by measuring the absorbance at a specific wavelength, the concentration of a drug can be determined.

Instrumentation

A UV–Visible spectrophotometer consists of several essential components that work together to measure the absorbance or transmittance of a sample. The light source typically includes a deuterium lamp for the ultraviolet (UV) region and a tungsten lamp for the visible region, providing a broad spectrum of light. A monochromator is used to isolate the desired wavelength from this spectrum, ensuring accurate measurement. The sample holder or cuvette, usually made of quartz, contains the solution to be analyzed. A detector then converts the transmitted light into electrical signals, which are processed and displayed by the output system, recording absorbance or transmittance values for analysis.

Types of Spectrophotometric Methods

Absorbance Maxima Method: Measurement at wavelength of maximum absorbance (λ_{max}).

Derivative Spectrophotometry: Improves resolution of overlapping spectra.

Simultaneous Equation Method: Used for multi-component drug mixtures.

Area under Curve (AUC) Method:

Integrates absorbance over wavelength range.

Difference Spectrophotometry:

Measures difference between two spectral forms of a drug.

Applications in Pharmaceutical Analysis**Assay of drug formulations:**

Quantification of tablets, syrups, or injectables.

Dissolution testing: Monitoring drug release profiles.

Stability studies: Detecting degradation under various conditions.

Content uniformity testing: Ensuring dose consistency among batches.

Advantages and Limitations

The method offers several advantages, including the use of simple and inexpensive instrumentation, high sensitivity and accuracy, and the ability to analyze samples in a non-destructive manner. Additionally, it requires only a small quantity of the sample, making it convenient for limited or precious materials. However, there are certain limitations to consider. It is applicable only to chromophoric compounds and interference from excipients or impurities can affect results. The method is also limited to clear, non-turbid solutions and requires precise wavelength selection to ensure accurate measurements.

Conclusion

UV-Visible spectrophotometry remains a cornerstone technique for routine drug estimation and quality control in the pharmaceutical industry. Despite the advent of sophisticated analytical methods like HPLC and LC-MS, its simplicity, reliability, and cost-effectiveness make it indispensable in academic, industrial, and regulatory laboratories. Continued improvements in instrumentation and chemometric analysis are expanding its applications in modern pharmaceutical analysis.

3

Scientific Advancements

The Role of Antioxidants in the Prevention and Management of Neurodegenerative Disorders

Payel Ghosh, Sachin Karmakar

The human brain is highly susceptible to oxidative damage due to its high oxygen consumption, abundant lipid content, and limited regenerative capacity. Overproduction of ROS and reactive nitrogen species (RNS) can damage neuronal DNA, proteins, and membrane lipids, leading to neurodegeneration. Antioxidants, both endogenous (e.g., glutathione, superoxide dismutase) and exogenous (e.g., vitamins C and E, polyphenols), play crucial roles in

neutralizing free radicals and maintaining redox homeostasis.

Mechanisms of Oxidative Stress in Neurodegeneration

In neurodegenerative diseases, mitochondrial dysfunction and excitotoxicity are key sources of ROS generation. In Alzheimer's disease, β -amyloid plaques stimulate ROS formation, while in Parkinson's disease, dopamine metabolism generates hydrogen peroxide and superoxide radicals. The excessive ROS activate signaling cascades such as NF- κ B and MAPK, promoting inflammation and apoptosis.

Role of Antioxidants in Neuroprotection

Antioxidants can act at multiple levels:

Free radical scavenging: Vitamin E and ascorbic acid neutralize ROS and prevent lipid peroxidation.

Metal chelation: Compounds like curcumin and flavonoids chelate iron and copper, reducing metal-catalyzed oxidative reactions.

Enhancing endogenous defenses: Certain plant polyphenols activate Nrf2 signaling, stimulating the expression of detoxifying enzymes like SOD and catalase.

Natural and Synthetic Antioxidants

Natural antioxidants such as resveratrol, curcumin, and quercetin show promising neuroprotective effects by improving mitochondrial function and reducing neuroinflammation. Synthetic agents like edaravone have also demonstrated benefits

in ALS by scavenging free radicals. Combination therapies using both natural and synthetic antioxidants may offer synergistic protection.

Conclusion

Antioxidants represent a promising therapeutic strategy for delaying or preventing neurodegenerative disorders. However, clinical translation remains challenging due to poor bioavailability and blood–brain barrier limitations. Future research should focus on targeted delivery and combination therapies to enhance antioxidant efficacy in the brain.

4

Scientific Advancements

Transdermal Drug Delivery Systems: Approaches, Advantages, and Recent Advances

Sanjana Bhakat, Anuska Chatterjee

Traditional oral drug administration often faces challenges like poor bioavailability, hepatic first-pass metabolism, and patient non-compliance. Transdermal delivery offers an alternative route that allows steady drug release and improved therapeutic efficacy. The skin, with its large surface area, provides an accessible portal for drug absorption but presents a major barrier through the stratum corneum.

Mechanism of Drug Absorption

Drug molecules penetrate the skin through three main pathways:

Transcellular route – directly across skin cells.

Intercellular route – through lipid layers between cells.

Appendageal route – via hair follicles or sweat glands. The drug must possess adequate lipophilicity and molecular size (<500 Da) to permeate effectively.

Formulation Approaches

Common transdermal systems include:

Adhesive patches: Simplest form delivering drugs at controlled rates.

Reservoir and matrix systems: Offer sustained release.

Iontophoresis and sonophoresis: Use electrical or ultrasonic energy to enhance penetration.

Microneedles: Create microchannels to deliver macromolecules like insulin and vaccines.

Advantages

- Avoids first-pass metabolism
- Provides controlled release
- Improves patient compliance
- Reduces dosing frequency
- Minimizes gastrointestinal side effects

Recent Advances

Recent innovations include nanocarriers (liposomes, ethosomes, and niosomes), microneedle patches, and hydrogel-based systems. These approaches improve skin permeability and allow delivery of

peptides and biologics previously unsuitable for transdermal use.

Conclusion

Transdermal systems offer a versatile and patient-friendly approach to drug delivery. Future research is directed toward integrating smart technologies—such as biosensor-linked patches—for personalized medicine.

5

Scientific Advancements

A Review on Medicinal Plants with Antidiabetic Activity

Suman Mali, Tanzeen Nigar

Diabetes mellitus affects hundreds of millions of people worldwide and has been declared a major public health concern by the World Health Organization (WHO). The disease is classified primarily into Type 1 diabetes mellitus (T1DM), characterized by autoimmune destruction of pancreatic β -cells, and Type 2 diabetes mellitus (T2DM), which involves insulin resistance and β -cell dysfunction. The global rise in T2DM has been linked to sedentary lifestyles, obesity, and dietary patterns.

Conventional antidiabetic agents such as sulfonylureas, biguanides (e.g., metformin), DPP-4 inhibitors, and insulin analogs provide effective control of blood glucose but often cause side effects such as hypoglycemia, gastrointestinal discomfort, and weight gain. Additionally, these drugs do not fully prevent diabetic complications. Consequently, there is

increasing interest in plant-based remedies, which have been used traditionally in Ayurveda, Unani, and Chinese medicine for centuries.

Role of Medicinal Plants in Diabetes Management

Medicinal plants contain diverse phytochemicals—alkaloids, flavonoids, terpenoids, phenolic acids, and glycosides—that exert antihyperglycemic effects through multiple mechanisms. Unlike synthetic drugs that often target a single biochemical pathway, herbal extracts typically act on several pathways simultaneously, making them effective in complex metabolic diseases like diabetes.

Medicinal plants exhibit their antidiabetic effects through multiple mechanisms of action. Some plants enhance insulin secretion by stimulating the pancreatic β -cells to release more insulin, thereby improving glucose utilization. Certain phytochemicals also increase insulin sensitivity, enabling peripheral tissues such as muscle and adipose cells to take up glucose more efficiently. Another important mechanism involves the inhibition of carbohydrate-digesting enzymes like α -amylase and α -glucosidase, which slows down the breakdown and absorption of carbohydrates from the intestine, leading to better postprandial glucose control. Additionally, many herbs possess strong antioxidant and anti-inflammatory properties, which help reduce oxidative stress and inflammation that can damage pancreatic tissue. Some bioactive compounds even contribute to the regeneration of β -cells, thereby restoring pancreatic function and maintaining long-term glucose homeostasis.

Prominent Medicinal Plants with Antidiabetic Activity

Gymnema sylvestre (Gurmar)

Gymnema sylvestre (Gurmar), belonging to the family *Asclepiadaceae*, is a well-known medicinal plant traditionally used in the management of diabetes. The major active constituents present in this plant are gymnemic acids, gurmarin, and saponins, which are responsible for its potent antihyperglycemic effects. Gymnemic acids play a key role by inhibiting glucose absorption in the intestine, thereby reducing postprandial blood glucose levels. They are also believed to promote the regeneration of pancreatic β -cells, which enhances endogenous insulin secretion and helps in restoring normal glucose metabolism. Another unique property of *Gymnema sylvestre* is its ability to suppress the sensation of sweetness, earning it the traditional name “Gurmar,” meaning “sugar destroyer.” Pharmacological studies conducted on diabetic rat models have demonstrated significant reductions in fasting blood glucose and glycosylated hemoglobin (HbA1c) levels following administration of *Gymnema* extracts, supporting its therapeutic potential as a natural antidiabetic agent.

Momordica charantia (Bitter melon)

Momordica charantia (commonly known as bitter melon) belongs to the family *Cucurbitaceae* and is one of the most widely studied plants for its antidiabetic potential. Its major active constituents include charantin, vicine, and polypeptide-p, which is considered a plant-derived insulin analog. Bitter melon enhances

glucose uptake and glycogen synthesis in the liver and muscles, mimicking the action of insulin. Additionally, it helps protect pancreatic β -cells from oxidative damage, thereby improving insulin secretion and overall glucose regulation. Clinical studies in humans have demonstrated moderate glucose-lowering effects when bitter melon is consumed in the form of fresh juice, powder, or capsule formulations.

Aloe vera

Aloe vera, a member of the *Liliaceae* family, is another medicinal plant known for its hypoglycemic properties. It contains active constituents such as aloin, aloemodin, and polysaccharides, which contribute to its antidiabetic activity. *Aloe vera* extracts enhance insulin sensitivity in peripheral tissues and promote glycogen storage in the liver, leading to improved glucose metabolism. Experimental evidence from animal studies shows that chronic administration of *Aloe vera* significantly reduces blood glucose, cholesterol, and triglyceride levels, indicating its potential as a supportive herbal therapy for diabetes management.

Advantages of Herbal Antidiabetic Agents

Herbal antidiabetic agents offer several advantages that make them valuable in diabetes management. They exhibit multifunctional actions, targeting various mechanisms involved in glucose regulation such as enhancing insulin secretion, improving insulin sensitivity, and reducing oxidative stress. Their safety profile is generally favorable, with fewer adverse effects compared to many synthetic drugs used in conventional

therapy. In addition, these remedies are cost-effective, making them affordable and easily accessible, particularly in developing regions where diabetes prevalence is high. Herbal medicines also show synergistic potential, as they can be effectively combined with standard antidiabetic drugs to enhance overall therapeutic efficacy. Moreover, many medicinal plants provide additional benefits due to their antioxidant, antihyperlipidemic, and hepatoprotective properties, which help minimize diabetic complications and support overall metabolic health.

Challenges and Limitations

Despite promising research outcomes, several challenges continue to hinder the widespread use of herbal antidiabetic agents. One of the major concerns is the lack of standardization, as variations in plant sources, extraction methods, and dosage forms often lead to inconsistent therapeutic efficacy. In addition, limited clinical trials remain a major drawback, since most available evidence is based on preclinical or animal studies, with only a few well-controlled human trials to validate safety and effectiveness. Quality control issues such as adulteration, contamination, and improper identification of plant materials can further compromise the safety and reliability of herbal products. Moreover, pharmacokinetic variability poses another limitation, as many bioactive compounds exhibit poor bioavailability, low stability, and unpredictable metabolism in the human body. Addressing these issues requires rigorous phytochemical characterization, development of standardized extracts, and

execution of well-designed clinical evaluations to ensure the efficacy, safety, and reproducibility of herbal medicines for diabetes management.

Conclusion

Medicinal plants remain a rich source of bioactive compounds with significant antidiabetic potential. They offer multiple mechanisms of action—ranging from insulin secretion and enzyme inhibition to antioxidant and β -cell regenerative effects. Although herbal therapies cannot completely replace conventional medicines, they can serve as valuable adjuncts to improve glycemic control and prevent complications. With proper scientific validation and standardization, plant-based medicines could play a vital role in the future of diabetes management.

6

Scientific Advancements

Herbal Approaches to Kidney Stone Management: Insights into Antiuro lithiatic Medicinal Plants

Tarik Aziz, Bornika Chattaraj

Kidney stones, or urolithiasis, are a common urinary disorder characterized by the formation of crystalline aggregates in the kidneys, ureters, or bladder. These stones are primarily composed of calcium oxalate, uric acid, struvite, or cystine, and their formation is influenced by factors such as dehydration, metabolic disorders, urinary tract infections, and dietary habits. Conventional treatments include extracorporeal shock wave lithotripsy, surgical removal, and pharmacotherapy using drugs like thiazides, allopurinol, or potassium citrate. While effective, these interventions often involve side effects,

recurrence risk, or high costs. As a result, there has been growing interest in herbal and phytotherapeutic approaches for the prevention and management of kidney stones due to their safety, accessibility, and multifaceted mechanisms of action.

Medicinal plants have been traditionally used in Ayurveda, Unani, and other traditional medicine systems for urolithiasis. These plants are rich in bioactive phytochemicals such as flavonoids, saponins, terpenoids, alkaloids, and phenolic compounds that exert antiuro lithiatic effects through multiple pathways. One of the major mechanisms is the inhibition of stone formation by interfering with crystal nucleation, growth, and aggregation. Certain plant extracts can prevent calcium oxalate crystallization by altering urinary supersaturation or by binding to crystals and facilitating their dissolution. Additionally, many herbs act as diuretics, increasing urine volume and flow, which helps flush out small crystals before they aggregate into larger stones. Antioxidant properties of herbal compounds also play a significant role, as oxidative stress and renal epithelial injury promote crystal adhesion and stone formation. By scavenging free radicals and reducing lipid peroxidation, phytochemicals protect renal tissues and reduce the risk of urolithiasis.

Several plants have been extensively studied for their antiuro lithiatic potential. *Hygrophila spinosa* (Acanthaceae), commonly known as Talmakhana, contains saponins and flavonoids that inhibit calcium oxalate crystal formation and promote diuresis. Experimental studies in rats have shown that its aqueous extract reduces kidney stone deposition and

restores renal function markers. *Phyllanthus niruri* (Euphorbiaceae), known as Bhumi Amla, is widely used in traditional medicine to treat kidney stones. Its bioactive constituents, including lignans, flavonoids, and tannins, prevent stone aggregation, dissolve preformed stones, and protect renal epithelial cells from oxidative damage. Clinical studies indicate that oral administration of *Phyllanthus* extracts can decrease stone size and reduce recurrence in patients with calcium oxalate stones. *Tribulus terrestris* (Zygophyllaceae) is another plant with significant diuretic and litholytic effects, helping to increase urinary volume and reduce crystal formation.

Other notable medicinal plants include *Crataeva nurvala* (Varuna), which contains triterpenoids and flavonoids that inhibit calcium oxalate crystallization and support renal health, and *Saxifraga ligulata* (Pashanbheda), traditionally used to prevent stone formation by promoting diuresis and urinary alkalization. *Aerva lanata* (Polpala) is also reported to reduce oxalate and phosphate deposition in animal models, demonstrating its potential in urolithiasis management. Many of these herbs act synergistically, combining diuretic, antioxidant, and anti-crystallization activities to provide comprehensive protection against kidney stone formation.

The use of herbal antiurolithiatic agents offers several advantages, including long-term safety, minimal side effects, and multiple therapeutic benefits such as improving renal function and reducing inflammation. These plants are cost-effective, widely accessible, and culturally accepted, especially in regions where

traditional medicine is practiced. However, challenges remain in their clinical application, including the need for standardization of extracts, identification of active constituents, dose optimization, and rigorous clinical trials to ensure efficacy and reproducibility. Quality control and proper formulation are also essential to prevent contamination and variability. Recent research has introduced modern strategies, such as nanoformulations and combination therapies, which enhance bioavailability and therapeutic effectiveness. Advances in pharmacology have clarified their mechanisms, including modulation of urinary citrate, inhibition of oxalate metabolism, and protection of renal epithelial cells, providing a strong scientific foundation for incorporating phytomedicine into contemporary kidney stone management.

In conclusion, herbal approaches to kidney stone management provide safe and effective alternatives to conventional treatments. Plants like *Phyllanthus niruri*, *Hygrophila spinosa*, *Tribulus terrestris*, *Crataeva nurvala*, *Saxifraga ligulata*, and *Aerva lanata* exhibit antiurolithiatic activity through crystal inhibition, diuresis, antioxidant effects, and renal protection. While traditional use supports their efficacy, scientific validation via preclinical and clinical studies is essential. Proper standardization, formulation, and evaluation can enable these plant-based therapies to complement modern treatments, reduce stone recurrence, and improve patient outcomes and quality of life.

7 Art & Literature Paintings



The Spirit of the White Stallion
~ Sangjukta Bera

This powerful painting portrays a white horse galloping through a dark, stormy background, symbolizing strength, freedom, and determination. The artist's striking use of light and shadow captures the horse's motion and spirit, while splashes of water and the night-sky backdrop evoke energy and courage. More than a visual delight, the artwork celebrates vitality and the untamed force of nature.

Duality of Existence

~ Abhimannu Shome

This captivating painting beautifully merges realism and geometry to depict the coexistence of life and death. The skull on one side and the structured, geometric face on the other symbolize mortality and creation, chaos and order. The contrasting hues—from dark shadows to vibrant yellows—reflect the eternal balance between decay and vitality, reminding viewers of the fragile yet harmonious nature of existence.



Eternal Harmony

~ Sanjana Bhakat



This vibrant painting beautifully portrays the divine union of Lord Krishna and Radha, symbolizing eternal love and spiritual harmony. The artist's use of bold outlines against a radiant blend of colors—ranging from deep blues and purples to warm oranges and yellows—creates a mesmerizing aura of devotion and emotion. The serene expressions, delicate floral motifs, and Krishna's flute together evoke a sense of peace, unity, and transcendence. This artwork celebrates the timeless bond between the soul and the divine, where love becomes a path to spiritual awakening.

9 Art & Literature

Prose & Poetry

Dream, Learn, Shine

~ Sampriti Modak

Books and laughter, side by side,
Dreams and deadlines, what a ride!
Coffee cups and sleepless nights,
Turning struggles into heights.

Friends like family, bonds so true,
Every day brings something new.
From classes, notes, and endless lines,
We're chasing stars — we're meant to shine!

কলেজ জীবনের দিনগুলি

~ Pritam Samanta

নীল আকাশে ভাসে রোদ ঝরে,
চায়ের কাপে গল্প ঘোরে।
বন্ধুদের হাসি, ক্লাসের ডাক,
খাতার পাতায় স্বপ্নের ফাঁক।

বইয়ের ভারে ক্লান্ত শরীর,
তবু মনে উড়ে রঙিন নকশির।
পরীক্ষার ভয়, আবার উৎসবের গান,
মনের ভিতর হাজারো জানালার টান।

ক্যাম্পাস জুড়ে জীবনের সুর,
স্বপ্নের পথে চলা অবিরত দূর।
আজকের দিন, স্মৃতির বাঁধনে,
রবে চিরকাল হৃদয়ের কাঁথনে।

কলেজ মানে শুধু পড়া নয়,
এ জীবনের মিষ্টি সময়।
বন্ধুত্ব, প্রেম, হাসির দোল—
এই মুহূর্তই জীবন সফল!

গ্রামের সকাল

~ Piyash Das

সূর্য উঠতেই মাটির ঘরের জানালা দিয়ে আলো ঢুকে পড়ল। রিয়া, শহরের এক কলেজ পড়ুয়া মেয়ে, এবার পুজোর ছুটিতে তার মামাবাড়ি এসেছে গ্রামে। এখানে নেই ট্রাফিকের শব্দ, নেই মোবাইলের তাড়া—শুধু পাখির ডাক আর গরুর ঘণ্টার মিষ্টি ঝংকার।

ভোরে মামা তাকে নিয়ে গেলেন খেতে। দূরদূরান্ত পর্যন্ত সবুজ ধানক্ষেত, মাঝখানে বাঁশের ঝাড় আর একফালি পুকুর। রিয়া অবাক হয়ে দেখল, গ্রামের মানুষ কত পরিশ্রম করে, অথচ মুখে কত শান্তি। বিকেলে সে ছোট ছোট ছেলেমেয়েদের সঙ্গে খেলে, নদীর ধারে বসে সূর্যাস্ত দেখে।

কয়েকদিনের মধ্যেই রিয়া বুঝতে পারল—গ্রামের জীবন যদিও সহজ, তবুও তার সৌন্দর্য অমূল্য। এখানেই সে খুঁজে পেল সত্যিকারের শান্তি আর জীবনের মর্ম। শহরে ফেরার দিন, গ্রামের পথে হাঁটতে হাঁটতে তার মনে হল—এই গ্রাম, এই মানুষগুলো, তার হৃদয়ের এক টুকরো হয়ে থাকবে চিরকাল।

The Fun of Chemistry

~ Sushmita Chandra

Bubbles rise and colors gleam,
In flasks and tubes, we chase a dream.
A drop, a swirl — a sudden hue,
From red to green, from pink to blue!

The beaker sings, the burner glows,
A mystery every compound shows.
From simple salts to bonds that twist,
Each reaction's a playful tryst.

Atoms dance, unseen yet near,
Their whispers only chemists hear.
They link and break in patterns grand,
Designing wonders, hand in hand.

A spark, a fizz, a sweet perfume,
New molecules are born in bloom.
With laughter mixed and goggles tight,
We turn the lab into pure delight.

For chemistry's not just smoke and flame,
It's joy in learning, more than fame.
A world of logic, art, and glee—
The magic of matter, the fun of *Chemistry*!

The Digital Day

~ Priyam Patra

Riya was an ordinary college student living in an extraordinary age — the age of technology. Her mornings no longer began with the chirping of birds but with the soft vibration of her smartwatch. The glowing screen displayed her sleep score, heart rate, and even a motivational quote to start her day. As she stretched, her smart speaker greeted her, *“Good morning, Riya. Today’s temperature is 27 degrees. You have three classes and one assignment due.”*

Her day had already begun in sync with technology. While sipping coffee, she glanced at her smartphone — a portal to her entire world. Messages from her study group popped up, online lecture links awaited, and the latest news scrolled through her notifications. Instead of flipping through pages of a textbook, Riya tapped through e-books, highlighting key concepts with a stylus. The classroom, once a physical space filled with chatter, had transformed into a virtual grid of faces and muted microphones. At 10 a.m., she joined her first online class. The professor explained pharmacology concepts using digital slides and animated visuals. Riya found it fascinating but also exhausting to stare at the screen for hours. Between classes, she switched tabs to work on her lab report, opening simulation software to perform virtual experiments. A quick AI-based grammar checker ensured her report was polished before submission. Technology, she thought, made learning faster — but also relentless.

By afternoon, Riya and her teammates met online for a group project discussion. Instead of sitting in the library surrounded by books, they collaborated through a cloud platform. One member shared diagrams, another edited slides, and Riya typed notes — all happening in real time from different parts of the city. Their teamwork felt efficient, but she couldn't help missing the laughter and friendly debates of in-person meetings.

After classes, Riya spent time scrolling through social media. Photos of friends, travel reels, and motivational posts filled her feed. She liked, shared, and commented — tiny digital gestures of connection. Yet, beneath the surface, she sometimes felt strangely isolated. Conversations were instant, but rarely deep. Friendship had become a string of emojis and memes. As evening approached, she logged into an online fitness session. The instructor's voice guided her through yoga poses, while her smartwatch tracked her heart rate and calories burned. Later, Riya video-called her parents, updating them about her studies and showing them her new online project. Technology, she realized, kept

families close despite the distance — a comforting thought in the chaos of modern life. Before going to bed, Riya reviewed her to-do list on her phone, planned tomorrow's schedule using a productivity app, and set her smartwatch alarm. As the room dimmed, the quiet hum of gadgets surrounded her — constant companions in her digital world. She stared at the glowing screen one last time and thought, *Technology makes everything easier, faster, smarter — but also noisier*. With that thought, she closed her eyes, wondering if one day, she would find a balance between the virtual and the real — between living online and simply living.

9

Current affairs

Rare Blood Moon Eclipse

Ruchira Dey 4th year

On the night of September 7, 2025, a rare celestial event enthralled skywatchers worldwide—a total lunar eclipse, popularly known as a "Blood Moon." This phenomenon occurs when the Earth passes directly between the Sun and the Moon, casting its shadow on the lunar surface. As sunlight filters through Earth's atmosphere, shorter wavelengths scatter, leaving longer red wavelengths to bathe the Moon in a striking reddish hue. The eclipse began at 9:28 PM UTC with the penumbral phase, causing subtle dimming, followed by the partial eclipse at 10:27 PM UTC as the Moon entered Earth's darker umbral shadow. Totality commenced at 11:30 PM UTC, peaked at 12:11 AM UTC on September 8, and concluded at 1:53 AM UTC, lasting approximately 5 hours and 27 minutes, with totality enduring around 83 minutes. Visible across Asia, Europe, Africa, and parts of Australia, including India, the event drew enthusiasts eager to witness the Moon's transformation. Scientifically, it belonged to Saros 128 and was the second of three total lunar eclipses in 2025, with the Moon near its perigee,

making it appear slightly larger and brighter. Throughout history, lunar eclipses have inspired cultural interpretations, often seen as omens, yet modern astronomy explains them through celestial mechanics and atmospheric effects. The September 7 Blood Moon reminded humanity of the dynamic and interconnected nature of our solar system, offering a shared moment to marvel at the beauty and complexity of the universe.

10

Current affairs

Women's Cricket World Cup 2025: A Landmark Tournament in India

Suhadeep Chatterjee (4th year)

The 2025 ICC Women's Cricket World Cup, held from September 30 to November 2 and co-hosted by India and Sri Lanka, marked a historic milestone in the evolution of women's cricket, emphasizing both competitive excellence and the promotion of gender equality within the sport. India's role as a host was particularly significant, marking the country's fourth time organizing the Women's World Cup, following earlier editions in 1978, 1997, and 2013. The tournament featured eight teams—Australia, Bangladesh, England, India, New Zealand, Pakistan, South Africa, and Sri Lanka—competing across five venues: Barsapara Cricket Stadium in Guwahati, Holkar Stadium in Indore, Dr. Y.S. Rajasekhara Reddy ACA-VDCA Cricket Stadium in Visakhapatnam, DY Patil

Sports Academy in Navi Mumbai, and R. Premadasa Stadium in Colombo. The tournament opened with a rain-affected match between India and Sri Lanka in Guwahati, where India secured a 59-run victory under the Duckworth-Lewis-Stern method, with Deepti Sharma contributing 53 runs and taking three wickets for 54. One of the tournament's most remarkable moments came from India's opening pair, Smriti Mandhana and Pratika Rawal, who established a new record for the highest opening partnership in Women's World Cup history with a 212-run stand, with Mandhana scoring 109 off 95 balls and Rawal contributing 122 off 134 balls against New Zealand, propelling India to 340/3 in 49 overs. Beyond individual brilliance, the 2025 edition reflected a broader commitment to gender equality, with the International Cricket Council announcing a record prize pool of \$13.88 million, surpassing the \$10 million awarded in the 2023 men's World Cup, and ensuring the women's winner would receive \$4.48 million, a significant increase from \$1.32 million in 2022. The final match, scheduled for November 2, 2025, was set to be held at either DY Patil Stadium in Navi Mumbai or R. Premadasa Stadium in Colombo, depending on team qualifications. Overall, the 2025 Women's Cricket World Cup emerged as a landmark event that not only showcased the growing prominence of women's cricket on the global stage but also highlighted the sport's evolution, the increasing support for female athletes, and the ongoing efforts to achieve gender parity in sports.

11

Current affairs

2024 Nobel Peace Prize – Nihon Hidankyo (Japan)

Argha Hens (3rd year)

In October 2024, the Norwegian Nobel Committee awarded the Nobel Peace Prize to Nihon Hidankyo, the Japan Confederation of A- and H-Bomb Sufferers Organizations, a grassroots movement founded in 1956 by survivors of the atomic bombings of Hiroshima and Nagasaki. The organization was established during the Second World Conference against A- and H-Bombs in Nagasaki with the dual mission of advocating for the social and economic rights of hibakusha, including those living abroad, and ensuring that no one ever again experiences the devastation of nuclear weapons. Through extensive educational work and personal witness statements, Nihon Hidankyo has highlighted the catastrophic humanitarian consequences of nuclear warfare, guided by their motto, "No more Hibakusha." Over the decades, the organization has played a pivotal role in nuclear disarmament advocacy, lobbying the Japanese government and international bodies, recording thousands of survivor

accounts, issuing resolutions, and sending delegations to the United Nations. A significant milestone in their efforts was contributing to the adoption of the Treaty on the Prohibition of Nuclear Weapons in 2017, bringing global attention to the humanitarian impacts of nuclear arms. The 2024 Nobel Peace Prize recognized Nihon Hidankyo "for its efforts to achieve a world free of nuclear weapons and for demonstrating through witness testimony that nuclear weapons must never be used again." At the Nobel ceremony in Oslo, 92-year-old Nagasaki survivor and co-chair Terumi Tanaka delivered a powerful speech recounting the horrors of the atomic bombings and urging global action to prevent their recurrence. As the number of hibakusha declines, Nihon Hidankyo continues its vital mission of public education and advocacy, serving as a testament to human resilience and the enduring commitment to a nuclear-free world. The Nobel recognition underscores the organization's tireless efforts and reinforces the urgent call for international peace and disarmament, ensuring that the lessons of the past guide future generations toward a safer, more secure world.

12

Current affairs

Surge in Cybercrimes in India: A Deepening Crisis

Mahamad Fahim Siddik (3rd year)

India has witnessed an alarming escalation in cybercrimes between 2024 and September 2025, with financial losses reaching unprecedented levels. In 2024 alone, citizens reported losses exceeding ₹22,845 crore due to cyber frauds, marking a staggering 206% increase from the previous year (The Times of India). This surge has been attributed to the rapid digitization of services, increased internet penetration, and the sophistication of cybercriminals employing advanced tactics. The proliferation of digital platforms has expanded the attack surface for cybercriminals, and with over 86% of households now connected to the internet, opportunities for exploitation have multiplied (Press Information Bureau). Cybercriminals have adapted by employing sophisticated methods such as phishing, fake investment schemes, and impersonation scams to deceive individuals, while the adoption of artificial intelligence by cybercriminals has further

complicated detection and prevention efforts (Reuters). Although urban areas have been significant targets, rural and semi-urban regions have also experienced a sharp rise in cybercrimes. In 2024, the number of reported cybercrime incidents rose from 4,52,429 in 2021 to 22,68,346, with rural areas witnessing an over 400% increase (The New Indian Express). The lack of digital literacy and awareness in these regions has made residents more susceptible to online frauds. In response to the escalating crisis, the Indian government has implemented several measures to combat cybercrimes. The Union Budget for 2025-2026 allocated ₹782 crore for cybersecurity projects, aiming to bolster digital infrastructure and enhance security protocols (Press Information Bureau). Additionally, the Indian Cybercrime Coordination Centre (I4C) has been actively involved in coordinating efforts between state and central law enforcement agencies to address cyber threats. Recognizing the importance of public awareness, the government has launched various campaigns to educate citizens about cyber threats and safe online practices. Initiatives such as the '1930' cyber helpline in Mumbai have been established to provide immediate assistance to victims of cybercrimes (The Times of India). These efforts aim to empower individuals with the knowledge and tools to protect themselves in the digital realm. The surge in cybercrimes in India underscores the need for a multifaceted approach to cybersecurity. While technological advancements play a crucial role in combating cyber threats, fostering a culture of digital literacy and vigilance among the populace is equally important. As the digital landscape continues to

evolve, sustained efforts from both the government and the public are essential to mitigate the risks associated with cybercrimes and ensure a secure digital future for all.



13

Current affairs

Indo-U.S. Trade Tensions Escalate: A Deepening Rift in Bilateral Relations

Atanu Das (2nd year)

Between August and October 2025, trade relations between India and the United States reached a critical juncture, marked by the imposition of sweeping tariffs by the Trump administration that significantly impacted bilateral trade, strained diplomatic ties, and prompted India to seek alternative economic partnerships. In August 2025, President Donald Trump announced a 50% tariff on a broad range of Indian exports, citing India's continued purchase of discounted Russian oil; this followed an initial 25% tariff and was framed as a reciprocal action against India's energy policy, which Washington argued indirectly supports Moscow's war in Ukraine. The tariffs targeted critical sectors such as textiles, gems and jewelry, leather goods, seafood, and automobiles, while exempting pharmaceuticals and electronics. The immediate economic repercussions were profound, with approximately 55% of India's \$87 billion

annual merchandise exports to the U.S. affected, causing significant losses for small and medium-sized enterprises (SMEs) and potential job cuts in labor-intensive industries. In response, India adopted a multifaceted strategy, focusing on export diversification by seeking new markets in Latin America, Africa, Southeast Asia, and the European Union, while leveraging trade agreements with countries like the United Kingdom, Australia, and the UAE to offset U.S. losses. Domestically, reforms including potential cuts to the Goods and Services Tax (GST) and favorable loan incentives were introduced, while Prime Minister Narendra Modi called for a boycott of American goods, urging citizens to prioritize locally made products. Diplomatically, the tariff imposition strained U.S.-India relations, overshadowing functional cooperation in defense and technology, with reports—though denied by India's Defense Ministry—suggesting a pause in major defense procurements from the U.S. In parallel, both nations engaged in extensive trade negotiations, with a potential agreement that could reduce tariffs on Indian exports to 15–16% in exchange for India gradually reducing Russian oil imports and increasing purchases of American corn and soymeal. Commerce and Industry Minister Piyush Goyal expressed optimism about finalizing the pact by November 2025, highlighting constructive dialogue between Prime Minister Modi and President Trump. Broadly, the dispute carries significant implications for global trade dynamics, as analysts warn that continued tensions could affect U.S. economic security and its strategy in Asia, while India's pivot toward alternative economic partnerships

RESTORE REAL IN DELHI

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GANDHIJI ASKS PEOPLE HIM TO VISIT W.

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14

Current affairs

China's Military Buildup along the Line of Actual Control: Strategic Implications for India

Jagannath Maji (2nd year)

China has significantly expanded its military presence along the Line of Actual Control (LAC), stationing approximately 20,000–25,000 troops in the Ngari and Shigatse regions, supported by artillery, air defense, and logistics units. The People's Liberation Army (PLA) can rapidly mobilize over 50,000 troops within days, leveraging well-developed road and air infrastructure. Beijing has also expanded support sites at Tingri, Yutian, and Yarkant, maintaining key outposts at Burang and Lhunze, which provide logistical and mobility support to operations launched from upgraded bases at Shigatse, Lhasa Gonggar, and Hotan, regularly hosting fighter and transport aircraft. Strategic bombers like the H-6K have appeared in rotational deployments, extending strike coverage despite altitude constraints. In parallel, China has constructed and expanded hundreds of “xiaokang” villages along the disputed border, accompanied by dual-use

infrastructure serving as a gray zone tool to assert claims. The PLA is leveraging rail and road networks to strengthen its positions, projecting coercive power and encroaching on disputed lands. Recent satellite imagery indicates an expansion of missile deployments near Golmud city, potentially establishing another PLA Rocket Force brigade, highlighting a growing deterrence posture on the Tibetan Plateau. Moreover, China commenced construction of the world's largest hydropower megadam on the Yarlung Tsangpo river, expected to generate 300 million MWh annually, which has raised concerns in India and Bangladesh over downstream water security, ecological risks, and potential displacement. These developments collectively enhance China's deterrence capabilities, facilitate rapid troop mobilization, and complicate regional stability, posing strategic challenges for India. In response, India has accelerated border infrastructure development, modernized its armed forces, and pursued diplomatic engagement to manage tensions and safeguard national interests, underscoring the need for vigilant and strategic planning to maintain security along the LAC.

15

Current affairs

India Hosts Miss World 2025: A Celebration of Beauty, Culture, and Global Unity

Roni Paul (3rd year)

In a historic achievement, India hosted the 72nd edition of the Miss World pageant in 2025, marking the second consecutive year the country had the honor of organizing this prestigious event. The grand finale was held on May 31, 2025, at the HITEX Exhibition Centre in Hyderabad, Telangana, with 108 contestants from across the globe competing for the coveted title. Hyderabad, renowned for its rich history, architectural marvels, and culinary delights, provided a vibrant and fitting backdrop, showcasing India's hospitality and cultural heritage to the world. The evening culminated in the crowning of Opal Suchata Chuangsri from Thailand as Miss World 2025. At 21, Chuangsri became the first Thai woman to win the title, impressing judges with her intelligence, poise, and humanitarian initiatives, including her social project "OpalForHer," focused on breast cancer awareness, inspired by her personal

experience of overcoming a benign tumor at 16. Representing India was Nandini Gupta, Femina Miss India World 2023, a 21-year-old from Rajasthan, who reached the top 20, demonstrating grace, confidence, and the rising prominence of Indian beauty queens on the global stage. Leading up to the finale, the Miss World Festival in Hyderabad featured cultural events and public engagements, including heritage walks and a visit to the Telangana Police's Integrated Command Control Center, highlighting the state's commitment to safety and tourism. Hosting the pageant for a second consecutive year emphasized India's growing influence in the global beauty and fashion industry, celebrating not only beauty but also education, humanitarian efforts, and cultural exchange. With a legacy of producing Miss World titleholders such as Aishwarya Rai and Priyanka Chopra, India continues to inspire future generations. The 72nd Miss World pageant was more than a beauty contest; it was a celebration of global unity, cultural diversity, and shared aspirations, as the crown passed to Opal Suchata Chuangsri, symbolizing the strengthening of bonds between nations through the universal language of beauty and compassion.

B. Pharm / D. Pharm (UG) and M. Pharm (PG) Entrance Exams & Cut-offs (2025)

Level	Exam Name	Category	Cut-off (2025)
UG	NEET-UG	UR / EWS	50th percentile; score range ~ 686-144
		OBC / SC / ST	40th percentile; score range ~ 143-113
PG	GPAT	General (UR)	Percentile ~ 96.24 ; marks ~ 216
		EWS	Percentile ~ 90.95 ; marks ~ 172
		OBC-NCL	Percentile ~ 90.22 ; marks ~ 168
		SC	Percentile ~ 76.45 ; marks ~ 119
		ST	Percentile ~ 55.46 ; marks ~ 85
	CUET-PG / State-PGCET	Varies by university/state	Typically ~ 60-70 percentile for CUET-PG; PGCETs



It is often the small steps, not the
giant leaps, that bring about the
most change.

~ Queen Elizabeth