05/10/2025

ASCE INSIGHTS

"Without Sight there is no Insight"

ASCE CET STUDENT CHAPTER

Monthly Newsletter

October Edition

VISION

To nurture civil engineering students to become future civil engineering leaders to serve the society.

MISSION

- **To foster student members from the fundamental to wider engineering knowledge.**
- **To adapt them with a broad set of skills and technical know how on the fields of emerging technologies and new developments in professional practices.**
- **To develop leadership and inquisitive attitude for creating innovative solutions to serve the society**

EDITORIAL BOARD

The ASCE CET student chapter has always been a platform for aspiring civil engineers to learn, collaborate and grow beyond the classroom. Through **ASCE INSIGHTS** we have embarked on a new journey of learning and has given its readers access to relevant topics and news. In this **4th edition** of our newsletter we have put special efforts to bring you excellent articles and diverse elements that could help nurture the builder in you. We have shed light upon the trajectory of our club activities as well. May it serve as a reminder that every step we take as learners and Professionals is part of a larger journey towards building stronger, smarter and more sustainable communities.

-Lavanya.R.S, Laya Rose Jijoy

LAVANYA R. S.
CONTENT TEAM

LAYA ROSE JIJOY
CONTENT TEAM

Theory of Elastic Stability stands as one of the most influential works in structural mechanics. Written by two legendary figures in engineering, this book provides a deep and systematic exploration of how and why structures lose stability. It focuses on buckling phenomena from simple columns to complex plates and shells offering both theoretical insight and practical design implications.The authors build from first principles, introducing fundamental equations of equilibrium and compatibility, and gradually extend them to cover various real-world scenarios. What makes the text remarkable is its balance it does not just present formulas, but also explains the physical meaning behind each derivation.Key Features include a thorough study of elastic stability and buckling theory, Extensive discussion on Euler's critical load, lateral-torsional buckling, and energy methods. However, it rewards readers with a profound understanding of how structural elements behave under compression and instability. Whether you're a postgraduate student, researcher, or structural engineer, this book serves as a timeless guide to mastering one of the most intricate aspects of mechanics. Timoshenko and Gere's work goes beyond equations it teaches how to think like an engineer. Their logical approach encourages readers to question assumptions, derive insights, and appreciate the elegance of structural behavior. A masterpiece that remains a cornerstone in the study of structural stability. Complex, precise, and enlightening Theory of Elastic Stability is a must-read for anyone striving to build a strong conceptual foundation in civil engineering.

ALUMNI CORNER

From Blueprints to Skylines: A CETian's Journey from Classroom to Construction Site

When I joined the College of Engineering Trivandrum (CET), I was like any other young engineering aspirant — curious, uncertain, and excited about the journey ahead. What I didn't know then was that those four years would build far more than technical knowledge. They would shape my attitude, my discipline, and the way I see the world.

CET was not just an institution; it was a training ground for life. The classrooms, corridors, and laboratories echoed with more than equations — they taught us persistence, problem-solving, and teamwork. Looking back today, as I stand on construction sites in Dubai, ensuring that every beam and column meets its mark, I realize how deeply CET laid the foundation for everything that followed.

The Foundation Years – Learning to Think Like an Engineer

Engineering in CET was never just about lectures and lab sessions. It was about understanding how things work — and more importantly, why they work that way. Those long hours in the lab, the countless model submissions, and the never-ending discussions over design calculations were all part of a much bigger lesson. Professors encouraged us not to memorize formulas but to think critically. Friends became teammates, and challenges became chances to innovate. Every small success — from a properly designed beam to a working model demonstration — gave us confidence that someday, we could handle real-world problems with the same clarity.

CET's culture instilled something special in every student — the ability to adapt, to analyze under pressure, and to stay grounded even when the workload seemed impossible. These traits, I would later realize, are far more valuable on-site than any textbook ever written.

From Concepts to Concrete – The First Steps into the Field

When I began my professional journey at Sobha Constructions in Dubai, everything felt both familiar and new. The world of construction was no longer a theoretical subject; it was a living, breathing environment where design met reality.

The first time I stood on a construction site, surrounded by the hum of machinery and the rhythm of progress, I understood the true meaning of being an engineer. Every drawing I had studied in college now existed in three dimensions — massive, precise, and full of complexity.

As a Technical Engineer, my responsibility lies in bridging the gap between design and execution. I review drawings, verify structural details, coordinate with site engineers, and ensure that the work proceeds exactly as intended. Every line on a drawing has meaning — it dictates how steel is placed, how loads are transferred, and how a building stands for decades to come.

One small error can change the entire behaviour of a structure, and that's where the CET training kicks in — the habit of checking, rechecking, and questioning until everything aligns perfectly.

The Site – A Classroom Without Walls

The field is where an engineer truly matures. No two days are the same, and no challenge repeats itself in the same way. You might start your morning solving a rebar detailing issue and end your day coordinating with consultants on structural modifications. The sun, the noise, and the constant pressure to meet timelines — they all test your patience. But they also teach resilience. The lessons you learn in the field are invaluable:

- You learn that communication is as important as calculation.
- You realize that teamwork is not just a concept but the lifeline of any project.
- You understand that even with the best planning, real-world situations require flexibility and quick thinking.

There's something deeply satisfying about standing on-site, watching workers bring to life what once existed only as lines on your computer screen. Every completed slab, every perfectly aligned column gives you a sense of pride that words cannot capture. That's when you truly understand that engineering is more than a job — it's a responsibility.

Behind Every Drawing – A Story of Precision and Passion

Being a technical engineer means being both a thinker and a doer. You spend hours poring over structural drawings, interpreting design intent, and guiding teams to execute accordingly. Your desk becomes a command center — surrounded by drawings, site photos, schedules, and endless coordination notes.

Every decision matters. Every clarification you give impacts cost, safety, and quality. And sometimes, the most critical part of the job isn't just solving a technical issue — it's ensuring that every person on-site understands the why behind what they're doing.

In this role, I've learned that leadership in engineering doesn't come from titles — it comes from clarity, confidence, and care for your work and your team.

Turning Challenges into Achievements – The Engineer's Spirit

At its core, engineering is about turning imagination into reality. The strength of a bridge, the height of a skyscraper, or the precision of a foundation — each represents an engineer's courage to dream big and build strong.

We are in a profession that silently shapes the world. Our success is not measured in applause, but in the strength and endurance of what we build.

As CETians, we carry that unspoken promise — to innovate responsibly, to uphold quality, and to never shy away from challenges. Every problem is an opportunity to make something better, safer, and more efficient.

Leaving a Legacy – Not Just a Footprint

To my juniors and aspiring engineers — remember that your journey doesn't end when you graduate. That's only the beginning. The real world will challenge you, test your patience, and sometimes even make you question your choices. But through it all, hold on to your passion.

Every project you work on is a chance to leave a legacy — not just in concrete and steel, but in the impact you create. Be the engineer who brings clarity in confusion, precision in chaos, and purpose in pressure. The world needs builders with integrity as much as it needs buildings that last.

Your mark may not always carry your name, but it will stand tall in the skyline you helped create.

A Message from an Alumnus

CET gave me my wings, but the construction field taught me how to fly. The lessons learned within those campus walls echo every day in the real world.

To all my juniors — stay curious, stay humble, and keep learning. Never underestimate the value of small experiences; they often shape the biggest parts of your career. The road ahead won't always be smooth, but every challenge will bring growth.

Someday, you'll stand where I stand today — looking at a structure rising high and thinking, "This was once just a drawing — and I helped make it real."

That's the beauty of our profession.
That's the pride of being an engineer.
That's the legacy of being a "Cetian".

ABHIRAM S,
TECHNICAL ENGINEER,
SOBHA CONSTRUCTIONS, DUBAI

FACULTY CORNER

Waste to Wealth: Recycling and Entrepreneurial Pathways for Sustainable and Cost-Effective Civil Infrastructure

Shamjas Ibrahim V. P.
Assistant Professor (Adhoc)
CET (CIVIL DEPT.)

India's ongoing infrastructure boom faces two major challenges: soaring material costs and the mounting burden of construction and demolition (C&D) waste. Transforming end-of-life concrete, masonry debris, plastics, and other industrial by-products into certified inputs provides a powerful solution. Such circular approaches not only reduce lifecycle costs but also create entrepreneurial opportunities for civil engineers, while enabling greener, more resilient infrastructure.

Circular construction connects durability-focused design, planned demolition, and high-value recycling to deliver affordable, low-carbon assets. By integrating these practices into mainstream projects, the sector can make sustainability synonymous with cost-effectiveness.

Proven Recycled Materials in Infrastructure

Recycled Concrete Aggregates (RCA)

Concrete is the backbone of modern structures and one of the most recycled construction materials.Concrete recycling has matured from experimental trials to mainstream application. RCA produced through controlled crushing and screening meets IS specifications for non-structural applications Recycled concrete aggregates can successfully feed prefabrication plants for producing culverts, ducts, and sub-base layers. With proper segregation and quality control, RCA demonstrates both technical feasibility and market acceptance.

Industrial By-Products as Supplementary Materials

Fly ash and Ground Granulated Blast Furnace Slag (GGBS) are widely recognized supplementary cementitious materials (SCMs). Incorporating them into concrete enhances durability, reduces clinker demand, and lowers carbon footprints.These materials not only divert industrial waste from landfills but enhance concrete properties.

Plastic-Modified Bituminous Mixes

India has adopted waste plastics in bituminous mixes under Pradhan Mantri Gram Sadak Yojana (PMGSY) and Indian Roads Congress (IRC) guidelines at scale. Studies reveal these roads display superior surface condition indices and reduced maintenance requirements compared to conventional pavements.

Reuse of Processed C&D fines

Processed C&D fines and screened soils can be effectively reused in embankments, landscape filling, and subgrade improvements, promoting bulk reuse of debris that would otherwise end up in landfills.

Entrepreneurial opportunity areas

Material Recovery Facility Development

Set up small material recovery facilities focused on clean concrete and masonry streams to produce graded RCA for sub-base, pavers, and non-structural precast, coupled with Quality assurance (QA) documentation to meet buyer specifications.

FACULTY CORNER

Green-certified product manufacturing:
Blocks, adhesives, plasters, and mixes with verified recycled content and third-party labels that help projects accrue Certification from The Indian Green Building Council (IGBC) or Green Rating for Integrated Habitat Assessment (GRIHA) systems provides competitive advantages in government tenders and private green projects.

Technical Consulting and LCCA Services
Civil engineers can develop specialized consulting practices focused on lifecycle cost analysis (LCCA) and sustainable material substitution. Services include material selection optimization, carbon footprint assessment, and regulatory compliance support. This knowledge-intensive approach leverages engineering expertise while requiring minimal capital investment.

Risk & Future outlook

Key risks in deploying recycled materials for infrastructure include variability in feedstock quality, regulatory compliance hurdles, and environmental or occupational hazards during processing. These can be mitigated by Implementing rigorous testing protocols based on IS codes . and contamination thresholds, ensuring traceability from source to batch, and enforcing strict emissions and worker-safety protocols during shredding and heating operations.

It will take time and effort to change perceptions before this can happen. That is because many end-users believe recycled construction products are inferior.
Overcoming perception barriers requires demonstration projects, third-party validation, and transparent performance data. Collaborating with established contractors and conducting pilot projects builds market confidence. Technical presentations to engineering communities and case study publications accelerate acceptance.

The transition from linear to circular construction models represents not just an environmental imperative but a strategic business opportunity. Civil engineers equipped with sustainability knowledge, entrepreneurial mindset, and technical expertise are uniquely positioned to lead this transformation while building profitable, impactful careers.

EVENTS HIGHLIGHTS

BUILD ONAM 2025-POOKKALAM DESIGN COMPETITION WINNERS

ASCE CET Student Chapter successfully organized the **Pookkalam Design Competition (AutoCAD)** as the **BuildONAM 2025** which combined the cultural essence of Onam with the technical creativity of engineering design. The competition witnessed enthusiastic participation from students. The event has concluded with **AKASH KRISHNA.M** from CET bagging first prize, **DEVANANDA K.P** and **ANIKA TREESA SOMY** getting second and **PARVATI B.S** and **FATHIMA AJMAL** from saintgits bagging the third prize. The ASCE CET Student Chapter extends heartfelt congratulations to the winners and gratitude to everyone who brought their creativity and festive spirit to BuildONAM 2025.

EVENTS HIGHLIGHTS

AUTOCLASH 3.0

The ASCE Committee of CET successfully hosted **AUTOCLASH 3.0** as part of Pantheon's 11th Edition on **26th September 2025**. The event served as an excellent platform for budding civil engineers to test their surveying accuracy and AutoCAD drafting expertise while fostering teamwork, technical application, and innovative thinking.

The competition was structured in three engaging phases. It commenced with an on-site surveying task, where participants were required to apply their theoretical knowledge in a practical setting by collecting precise field measurements and observations. This not only tested their technical competence but also their ability to work under real-world constraints.

The second phase involved the layout design challenge, where participants transformed their field data into efficient and practical site layouts. Here, creativity blended with engineering judgment, as teams had to ensure functionality, feasibility, and adherence to design principles.

The final stage highlighted the participants' AutoCAD drafting skills, as they meticulously converted their field notes and layouts into accurate technical drawings. This phase reflected their attention to detail and mastery of digital drafting tools, which are indispensable skills for modern-day civil engineers. The entire event was marked by a spirit of healthy competition, enthusiasm, and collaboration. Teams showcased not only their technical expertise but also problem-solving skills, time management, and coordination. The charged atmosphere was a testament to the passion and dedication of the participants.

After a rigorous evaluation by the judges, the top-performing teams were honored with prizes worth ₹3000/-, acknowledging their precision, creativity, and technical proficiency. AUTOCLASH 3.0 thus concluded as a resounding success, inspiring participants to refine their practical skills and reaffirming the importance of bridging classroom learning with field applications.





OUR COMMUNITY

The ASCE CET Student Chapter is a dynamic platform that unites aspiring civil engineers under the banner of the American Society of Civil Engineers (ASCE). With a strong membership of over 300 students, the chapter serves as a bridge between academic knowledge and professional practice, nurturing technical expertise, leadership, and innovation. Under the guidance of experienced faculty and practitioner advisors, our chapter regularly organizes impactful activities such as panel discussions, technical workshops, webinars, site visits, expert talks, and competitions. These initiatives provide members with practical exposure, teamwork opportunities, and industry readiness, equipping them to face the challenges of the civil engineering profession. Together, the ASCE CET Student Chapter forms a vibrant community dedicated to shaping not only better engineers but also responsible leaders for the future of civil engineering.

DR. ANUSHA S P
FACULTY ADVISOR

DR. KISHOR P
PRACTITIONER ADVISOR

SYAM S
PRESIDENT

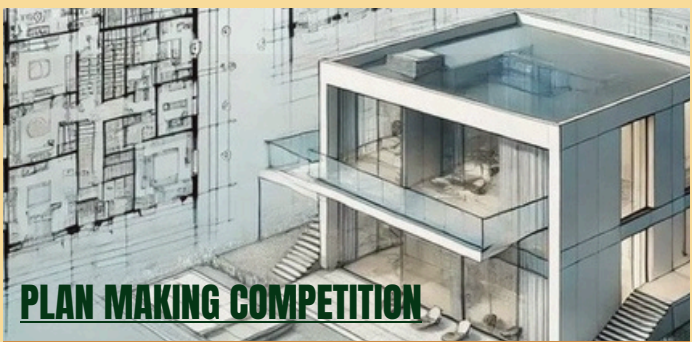
DEVANARAYANAN VINOJ
VICE PRESIDENT

EVENTS HIGHLIGHTS

The ASCE CET Student Chapter has successfully organized an insightful **session on placement guidance on 13th September 2025**, aimed at preparing students for their transition from campus to career.

The session covered key aspects of the placement process, including interview preparation, placement training, and self-preparation strategies. Students gained practical knowledge and a clearer understanding of the skills required to succeed in competitive recruitment processes.

We were honoured to host our alumnus **Mr. Abhiram S**, currently working at **Sobha Constructions**, who shared his valuable professional experiences. He provided students with first-hand insights into workplace expectations, strategies to handle real-time pressures, and guidance tailored to the challenges faced by graduating engineers.



PLAN MAKING COMPETITION

A Plan Making Competition was organised as part of its annual activities, providing students with an opportunity to showcase their planning and design brilliance. The competition concluded on **24th September 2025** with enthusiastic participation of 23 team from various college across Kerala.

The challenge required participants to prepare a 450 sq.ft. building plan complete with elevation, section, cost estimation, and material specifications, based on a site plan provided. The event tested participants' ability to combine creativity with technical accuracy, emphasizing both practical design thinking and engineering application.Submissions were evaluated on parameters such as design innovation, accuracy in drawings, material efficiency, and cost effectiveness.

ADVANCED SURVEYING TRAINING SESSION

This week on **22nd September 2025** we have successfully organized a Survey Competition Training. The training aimed to provide participants with hands-on experience and practical knowledge in surveying techniques, laying the groundwork for upcoming competitions.

The training was well-received, with our team appreciating the opportunity to enhance their technical skills, improve teamwork, and prepare effectively for survey-related competitions.

ASCE First Year Orientation Session

The ASCE Student Chapter organized an engaging and memorable orientation session exclusively for the freshers on **10th September 2025.** The program aimed to warmly welcome the first-year students into the ASCE family while familiarizing them with the vision, objectives, and diverse opportunities offered by the chapter.

The session was thoughtfully structured to be both interactive and informative, ensuring that the new members not only gained valuable insights but also felt truly connected to the community.

Following this, senior members shared their experiences in ASCE, narrating how their journey with the chapter had enhanced their academic exposure, leadership skills, and overall professional growth.

An overview of ASCE's initiatives—including technical workshops, industrial visits, competitions, paper presentations, and community service programs—was presented, giving the newcomers a glimpse into the vast learning and networking avenues awaiting them. The session also highlighted the exclusive benefits of ASCE membership, such as access to cutting-edge technical resources, opportunities to participate in international conferences, interaction with global professionals, and platforms for skill development and leadership.

The event concluded on a positive and inspiring note, leaving the first-year students motivated to actively engage with the ASCE Student Chapter and embark on a journey of growth, innovation, and collaboration.

STUDENT ARTICLES

Engineering Feats Redefining Urban Landscapes

This week has been remarkable for civil engineering, with projects that highlight both innovation and resilience. In Chennai, the city welcomed its first steel-concrete hybrid flyover, a ₹164.92-crore structure spanning 2 km over T. Nagar. Verified for seismic safety by IIT Madras, it promises smoother traffic flow across one of the busiest urban corridors. In Kochi, Cochin International Airport Ltd advanced "Operation Pravah" with the construction of three new bridges designed to improve connectivity and reduce flooding risk during monsoons. Thiruvananthapuram also saw a creative approach to urban spaces, with a ₹6.1-crore project to beautify and repurpose the under-flyover area at Chackai–Enchakkal, blending landscaping, lighting, and cultural art. Beyond India, Dubai approved an ambitious 100-year deep-tunnel drainage system to manage extreme rainfall and flooding, a global benchmark in climate-resilient infrastructure. Together, these marvels reflect the evolving role of civil engineering in shaping safer, smarter, and more sustainable cities.

Japan Building Protection from Earthquakes

Japan uses multiple methods for earth quake protection, including seismic - resistant building codes , seismic isolation and energy absorbing dampers.Building materials are flexible ,like steel and timber and structures are designed to bend rather than break. Additionally, early warning systems provide alerts, seismic sensors stop trains during quakes and robots are used for rescue operations.

- **Strict building codes**

Japan enforces rigorous building codes requiring materials like steel and concrete specifying minimum wall thickness and beam strength to withstand shaking.

- **Seismic location**

Devices are installed under foundations to absorb horizontal tremors, allowing the building to move independently from shaking ground.

- **Dampers**

These devices , often made of rubbers or steel, absorb and reduce the energy of seismic vibrations.

- **Flexible materials**

Modern buildings use reinforced concrete and steel for flexibility and elasticity,while traditional wooden buildings incorporate flexible joinery to absorb energy.

Self-Healing Concrete: The Future of Smart Infrastructure

One of the biggest challenges in civil engineering is the durability of concrete structures. Cracks, however small, can lead to corrosion of reinforcement and eventual structural failure. To overcome this, researchers have developed self-healing concrete, a revolutionary material that can repair its own cracks.This concrete uses bacteria or encapsulated healing agents that activate when cracks form. When water enters a crack, the bacteria produce limestone or the agents release compounds that seal the gap, restoring strength and extending the life of the structure. SHC is already being tested in bridges, tunnels, and marine structures, showing promise for reducing maintenance costs and enhancing safety. By integrating such smart materials, civil engineers are reshaping the way we design and maintain infrastructure.

SOFTWARE SPOTLIGHT

Revit is a powerful Building Information Modeling (BIM) software developed by Autodesk, widely used in the fields of architecture, engineering, and construction. Unlike traditional design tools, Revit allows users to create intelligent 3D models that contain both geometry and detailed data. This integration makes it possible to streamline project workflows, improve collaboration, and reduce errors across different disciplines.One of Revit's key strengths is its ability to support multidisciplinary teams on a single unified platform. Architects, structural engineers, and MEP (mechanical, electrical, and plumbing) professionals can work together on a central model, ensuring coordination and accuracy throughout the design and construction process.

Engineering Wonders Making Headlines

This week has been thrilling for civil engineering achievements across India. In Thiruvananthapuram, the Vattiyoorkavu Junction redevelopment got a revised approval of ₹531.76 crore, set to unfold in three phases covering nearly 9 km. This project, with 90% of building demolition already done, is expected to dramatically ease congestion and improve connectivity in the city's eastern corridor. (The Times of India)

In Kochi, under "Operation Pravah," CIAL (Cochin International Airport Ltd) began building three bridges in Puliyampilly, Madathimoola, and Chowara, costing about ₹40 crore and targeted for completion in 18 months. These structures will not only boost transportation links but also mitigate flooding by enhancing water flow during monsoon seasons. (The Times of India)

In Palakkad, the state has completed the tender process for its Smart City project, with an ₹1,316.13 crore EPC contract awarded. Part of the Kochi-Bengaluru industrial corridor, this development aligns urban infrastructure with industrial growth and is expected to begin construction soon. (The Times of India)

These endeavors reflect a growing trend: blending connectivity, resilience, and smart design in infrastructure — making cities not just bigger, but also better.

FIRST EVER BASKET-HANDLE BRIDGE IN INDIA

After the project was halted for nearly ten years due to safety concerns, the bridge was completed back in April 7, 2025. The 100m marvel has replaced an older, single-lane Bailey Bridge. Costing ₹40 Crore, it efficiently and safely connects the Lengpui Airport to the city of Aizawl.

The bridge is a "basket handle" network arch bridge and is the first of its kind to be used in India. It boasts a load capacity of 385 tons and was delivered using a ropeway system over the Tlawng River.

This architecturally elegant bridge over the Tlawng River is set to become a defining landmark for Aizawl. More than just a gateway to the state, it represents a durable and sustainable solution to long-standing infrastructure needs, a testament to what can be achieved when innovation meets determination.

-Vanlalpeka Chhangte

Smart Roads: Technology Meets Infrastructure

Smart Road Technology—an innovation that integrates sensors, solar panels, and digital systems into road networks. These roads are designed not just to carry vehicles but to communicate with them, improving traffic safety, energy efficiency, and user experience.

Recent pilot projects in Europe and Asia have tested solar-powered road surfaces that generate electricity while supporting vehicle loads. Meanwhile, India has been exploring sensor-based Intelligent Transport Systems (ITS) on expressways, which can detect accidents, monitor congestion, and provide real-time updates to drivers. This technology highlights the growing intersection of civil engineering, electronics, and artificial intelligence. Designing tomorrow's infrastructure will require engineers who can merge traditional construction knowledge with digital innovation. Smart roads are transforming highways into interactive systems, making travel safer, more sustainable, and technologically advanced.

KNOW YOUR CODE IS 383

IS 383 is the Indian Standard code that specifies the requirements for coarse and fine aggregates used in construction. Titled "Specification for Coarse and Fine Aggregates from Natural Sources for Concrete", it provides guidelines on grading, quality, and physical properties of aggregates to ensure strength and durability of concrete. The code covers natural sources like sand, gravel, and crushed stone, outlining limits for impurities, particle size distribution, and moisture content. Compliance with IS 383 ensures that the aggregates used in concrete structures meet the necessary standards for safety and performance.

WORD SEARCH

Word Search

A Z P K Q B G N Y A W L I A R O I P
X H I G H W A Y N V H A A Q Q I A X
W Y J V V B C D Z C A D L U I V L C
H Y Q G X F C P H M E T Y E E C H Y
O X N C P Q O C Q W T N M M N A U Q
V F F H Y E Z W K H Z I E M V N Y U
E O U U N G O F C Y N N T Y G C U S
R A R K P C C Y M I T K G W J A T T
P B L D M J C C E M B A N K M E N T
A V K I H C A C F F L F N M E D Q T
S X M W G I P W B X X W A W G Q B T
S M S O R N R I O P O X B R Q D W I
R U U P E O M K U L F J C I T L X K
U Q O R G B R E U H W H I B Q W O Z
J R P C D Z I D N S K F P D W Z A O
T F J S I A R N C T W B F T L V B Y
Y Y N Z R F G C G F C O U P V O F Q
G T T I B Y S O Z J K B G X E C N M

1)HIGHWAY **4)BRIDGE** **7)TUNNEL** **10) ALIGNMENT**

2)TRAFFIC **5)AIRPORT** **8)PAVEMENT**

3)OVERPASS **6)EMBANKMENT** **9)RAILWAY**

- **Indus Valley Civilization** (2500 BC) had advanced drainage systems and grid-planned cities, far ahead of their time.
- **Kallanai Dam (Tamil Nadu)**, built by the Chola dynasty in the 2nd century AD, is one of the world's oldest functional dams and still in use.
- **Sun Temple, Konark (Odisha)** is designed as a massive stone chariot with intricate structural balance.
- **Pamban Bridge (Tamil Nadu)** was India's first sea bridge (1914) and is still an engineering marvel.
- **Bogibeel Bridge (Assam)** is India's longest rail-cum-road bridge, spanning 4.94 km across the Brahmaputra River.
- **Delhi-Mumbai Expressway** (under construction) will be India's longest expressway at 1,386 km, reducing travel time from 24 hours to 12 hours.
- **The Atal Tunnel (Rohtang, Himachal Pradesh)** is the world's longest highway tunnel above 10,000 feet.

GATEWAY TO SUCCESS: QUESTIONS OF THE MONTH

Q1. A propped cantilever beam of span 6 m carries a uniformly distributed load of 20 kN/m over the entire span. The reaction at the prop (simply supported end) is closest to:
(a) 60 kN
(b) 90 kN
(c) 120 kN
(d) 150 kN

Q2. A soil sample has G=2.7 G=2.7, water content = 20%, and void ratio = 0.7. The degree of saturation is:
(a) 70%
(b) 77%
(c) 85%
(d) 100%

Q3. In a direct shear test, the sample failed under a normal stress of 200 kN/m² and shear stress of 80 kN/m². The angle of internal friction is closest to:
(a) 20°
(b) 22°
(c) 23°
(d) 25°

Q4. The detention time of a sedimentation tank of volume 600 m³, when the discharge through it is 0.05 m³/s, is:
(a) 2 hours
(b) 3 hours
(c) 4 hours
(d) 5 hours

Q5. For a horizontal curve of radius 300 m, the design speed is 72 km/h. The super-elevation required is:
(a) 0.04
(b) 0.06
(c) 0.08
(d) 0.10

Contact Us:

: asce_cet

: American Society of Civil Engineers CET

Articles are invited. Please do scan the below attached QR code and sent your article.