

G H Patel College Of Engineering & Technology

Vallabh Vidyanagar

Dr. C. C. Patel And Mrs. Sushilaben Patel

Department Of Civil Engineering

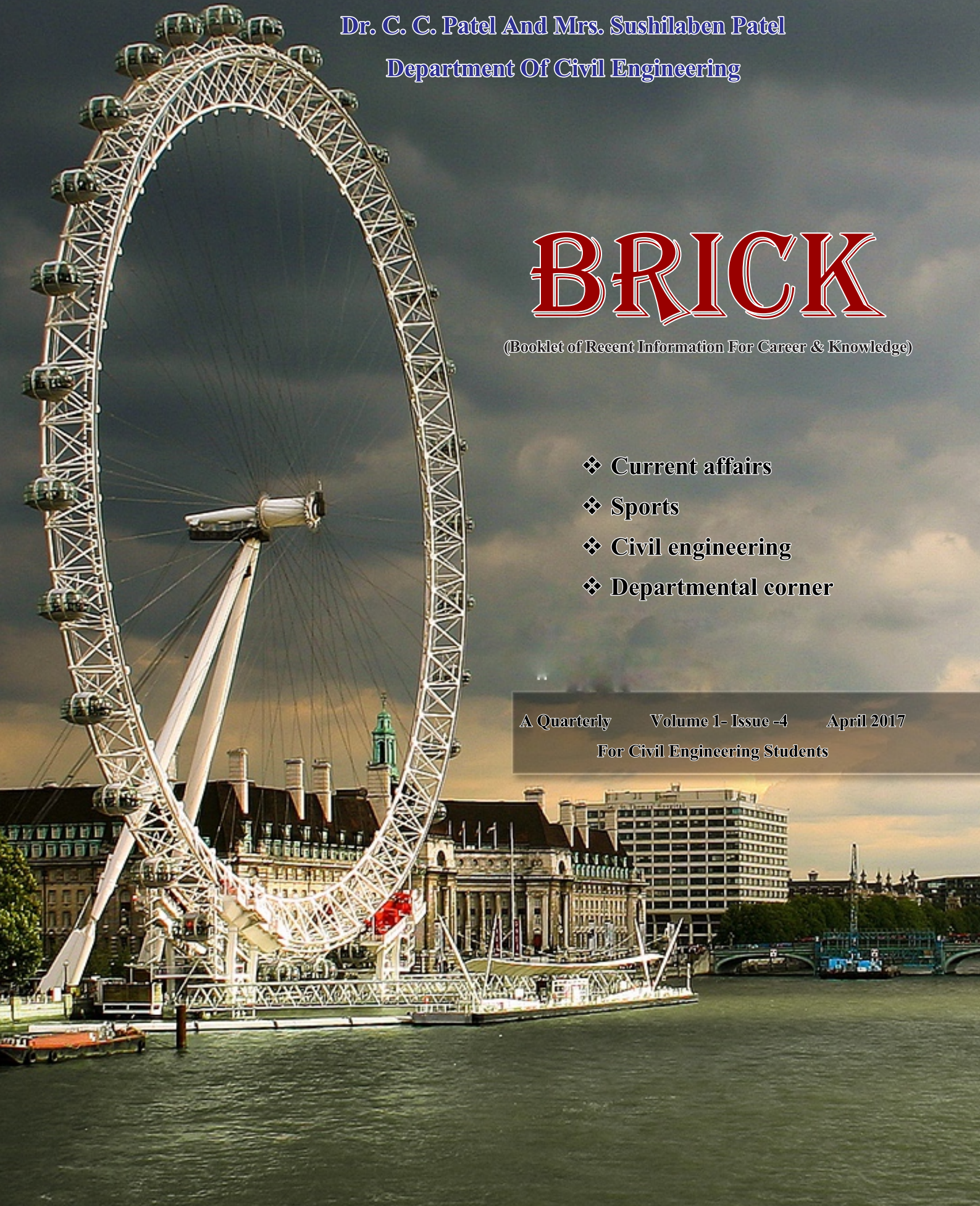
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(Booklet of Recent Information For Career & Knowledge)

- ❖ **Current affairs**
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For Civil Engineering Students



**Dr. C. C. Patel & Mrs. Sushilaben Patel Department Of
Civil Engineering,
G H Patel College Of Engineering & Technology,
Vallabh Vidyanagar.**

G H Patel College of Engineering & Technology, Vallabh Vidhyanagar started Civil Engineering branch in the academic year 2014-15 under the guidance of Charutar Vidhyamandal in view of the high demand for trained and employable Civil engineers. AICTE has approved an intake of 60 and the course is affiliated to Gujarat Technological University (GTU), Ahmadabad. The revised syllabus from the academic year 2013-14 of GTU is followed throughout the semesters.

A separate building has been constructed and is named as “Dr. C. C. Patel & Mrs. Sushilaben Patel Department of Civil Engineering, GCET”. The new building has four classrooms, six laboratories, staff rooms, department library and tutorial room as per AICTE criteria. All the basic labs for first year, Mechanics of Solids lab and Concrete lab are located in GCET main building. All other laboratories have been developed for this branch as per the syllabus of GTU. A separate computer lab has been developed in the new building with 40 computers with advanced software installations.

Highly qualified faculty members having good teaching experience are available in the Department. More faculty members and other supporting staff members will be recruited as per future requirements. Various technical events, non-technical events, educational visits, GATE classes, General Aptitude sessions, etc. Have been organized by the department.



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CURRENT AFFAIRS

G 20: THE ANNUAL SUMMIT OF GLOBAL LEADERS

The 2017 G20 Hamburg summit was the twelfth meeting of the Group of Twenty (G20), which was held on 7–8 July 2017, at Hamburg Messe, in the city of Hamburg, Germany.

The G20 digital ministerial meeting was held in Dusseldorf, Germany.



It concluded with adaptation of declaration on ‘shaping digitalization for an interconnected world’

The ministerial conference was held according to the G20 task force on the digital economy established in G20 summit held in Hangzhou, china in 2016.

Apart from the recurring themes relating to global economic growth, international trade and financial market regulation, the G20 Hamburg summit was expected to focus on the following "issues of global significance". Migration, digitisation, occupation, health, Women's Economic Empowerment and development aid.

What Is G20?

1. The Group of 20 leading industrialised and emerging powers hold annual summits on economic governance, with wars and crises often overtaking the official agenda.
2. Grouping the United States and other G7 members with giants such as China, India and Russia, it represents two thirds of the world population,

three quarters of world trade and about 80 percent of economic output.

3. The other members are Argentina, Australia, Brazil, Britain, Canada, France, Germany, Indonesia, Italy, Japan, Mexico, Saudi Arabia, South Africa, South Korea, Turkey and the European Union.

4. The G20, with its ministerial-level beginnings in 1999, first met for a summit in 2008 in Washington to discuss ways to achieve balanced and sustainable world economic growth.

5. Critics charge that the "self-appointed" club undermines the role of the international bodies, such the United Nations, International Monetary Fund (IMF) and World Bank.

6. The grouping has often been a magnet for protesters, including at this year's meet in Hamburg, Germany.

7. At the 2010 summit in Toronto, thousands of anti-capitalist protesters clashed with Canadian police, leaving dozens injured on both sides and sparking mass arrests.

8. The list of G20 members does not strictly reflect the world's 20 biggest economies. Some non-members such as Switzerland have bigger economies than, for example, member Argentina.

9. The leaders mostly meet behind closed doors and lack the power to enforce binding decisions or rules.

10. The heads of global and regional bodies are invited to the summits - among them the chiefs of the UN, IMF, World Bank, WTO, African Union, APEC and Southeast Asia's ASEAN.

11. Rotating G20 summits also invite guest nations, including "permanent guest" Spain and, this year, partner countries the Netherlands, Norway and Singapore.

12. Next year's G20 host will be Argentina.

GST (GOOD & SERVICE TAX)

The present structure of Indirect Taxes is very complex in India. There are so many types of taxes that are levied by the Central and State Governments on Goods & Services.



We have to pay ‘Entertainment Tax’ for watching a movie. We have to pay Value Added Tax (VAT) on purchasing goods & services. And there are Excise duties, Import Duties, Luxury Tax, Central Sales Tax, Service Tax, etc. How nice will it be if there is only one unified tax rate instead of all these taxes?

What Is GST?

It has been long pending issue to streamline all the different types of indirect taxes and implement a “single taxation” system. This system is called as GST (Goods & Services Tax). The main expectation from this system is to abolish all indirect taxes and only GST would be levied. As the name suggests, the GST will be levied both on Goods and Services.

GST was first introduced during 2007-08 budget session.

On 17th December 2014, the current Union Cabinet ministry approved the proposal for introduction GST Constitutional Amendment Bill.

On 19th of December 2014, the bill was presented on GST in Lok Sabha. The current central government implemented GST from 1st July 2017.

GST is a tax that we need to pay on supply of goods & services. Any person, who is providing or supplying goods and services is liable to charge GST.

How Is GST Applied?

GST is a consumption based tax/levy. It is based on the “Destination principle.” GST is applied on goods and services at the place where final/actual consumption happens.

GST is collected on value-added goods and services at each stage of sale or purchase in the supply chain. The manufacturer or wholesaler or retailer will pay the applicable GST rate but will claim back through tax credit mechanism.

But being the last person in the supply chain, the end consumer has to bear this tax and so, in many respects, GST is like a last-point retail tax. GST is going to be collected at point of Sale.

Graphical Representation Of How GST Works

The GST is an indirect tax which means that the tax is passed on till the last stage wherein it is the customer of the goods and services who bears the tax. This is the case even today for all indirect taxes but the difference under the GST is that with streamlining of the multiple taxes the final cost to the customer will come out to be lower on the elimination of double charging in the system.

Indian Government is opting for Dual System GST. This system will have two components which will be known as

Central Goods and Service Tax (CGST) and
State Goods and Service Tax (SGST).

The current taxes like Excise duties, service tax, custom duty etc will be merged under CGST. The taxes like sales tax, entertainment tax, VAT and other state taxes will be included in SGST.

Benefits Of GST Bill Implementation

- The tax structure will be made lean and simple
- The entire Indian market will be a unified market which may translate into lower business costs. It can facilitate seamless movement of goods across states and reduce the transaction costs of businesses.
- It is good for export oriented businesses. Because it is not applied for goods/services which are exported out of India.
- In the long run, the lower tax burden could translate into lower prices on goods for consumers.
- The Suppliers, manufacturers, wholesalers and retailers are able to recover GST incurred on input costs as tax credits.
- It can bring more transparency and better compliance.
- Number of departments (tax departments) will reduce which in turn may lead to less corruption
- More business entities will come under the tax system thus widening the tax base. This may lead to better and more tax revenue collections.
- Companies which are under unorganized sector will come under tax regime.

RERA

What Is The Real Estate Regulation Act (RERA)?



The Real Estate Act makes it mandatory for all commercial and residential real estate projects where the land is over 500 square metres, or eight apartments, to register with the Real Estate Regulatory Authority (RERA) for launching a project, in order to provide greater transparency in project-marketing and execution.

Introduced By

Dr. Girija Vyas, Minister (Cabinet) of Housing and Urban Poverty Alleviation

How Will RERA Impact Home Buyers?

The homebuyer will have to pay only for the carpet area, that is the area within walls, and the builder cannot charge for the super built-up area the way it is now.

How Will Real Estate Regulatory Act Affect Builders And Developers?

Builders, developers and promoters cannot advertise/promote any project, without quoting a RERA registration number and website address of RERA, after three months. If they fail to register post this period, they cannot continue with marketing and selling their projects.

Impact Of RERA

- Under RERA, all property brokers will have to register with real estate regulators in their states, thus sieving out the small-time players and consolidating major ones
- The share of affordable segment in total launches has improved.
- While sales have been weak across segments, it has been prominent in the high-end and luxury segments over the last quarter's owing to demand-supply mismatches.

INDIAN ECONOMY

RBI STARTED ISSUING NEW BATCH OF RS 500 NOTES

Reserve bank of India started issuing new batch of 500 rupee banknotes with inset letter “A” in both the number panels, bearing the signature of RBI governor Dr. Urjit R. Patel. The notes have the year of printing ‘2017’ on the reverse. The design of these notes is similar in all respects to the 500 rupee banknotes in Mahatma Gandhi (new) series which were released post demonetization.



RBI KEEPS REPO RATE UNCHANGED

RBI kept repo rate (the rate at which the central bank of a country lends money to commercial banks in the event of any shortfall of funds) unchanged at 6.25% during its bimonthly monetary policy review on June 7, 2017. This is 4th time in a row that repo rates have been kept unchanged. Cash reserve ratio has also been kept at current 4% statutory liquidity ratio was cut by 50 basis points to 20%. RBI’s target for inflation stands at 4%.



PRINTING OF RS 200 CURRENCY NOTES BEGINS

RBI has begun printing bills of 200 rupees for the first time to help ease consumer transactions. New 200 notes will carry advanced security features to prevent counterfeiting. Introduction of 200 rupee notes will replenish the middle, triggered by the withdrawal of the old series of 500 rupee notes.



INDIA TO GROW AT 7.2% IN 2017-18

GDP is a monetary measure of the market value of all final goods and services produced in a period (quarterly or yearly). As per a recent report by the World Bank, India’s economy will grow 7.2% in 2017-18. For 2017-18, the bank has projected GDP growth of 7.2% and for 2019-20, a growth of 7.7% riding on strong fundamentals, reform momentum and improving investment scenario. It was 6.8% in 2016 -17.



SPACE



ISRO LAUNCHED HEAVIEST ROCKET

ISRO launched India's heaviest rocket gslv-mk iii along with a communications satellite gsat-19 from Satish Dhawan space centre. The 43.43m rocket that weighs 640 tonnes is capable of lifting payloads of up to 4000kg into geosynchronous transfer orbit. The rocket's cryogenic engine has been developed by space scientists indigenously. It was developed by space scientist indigenously. It was developed in 15 years at a cost of 300 crore.



MANGALYAAN COMPLETES 1000 EARTH DAYS

Indian mars orbiter mission also called Mangalyaan completed 1000 earth days in its orbit on June 20, which is more than 5 times the number of days it was designated to last. It has now completed 388 orbits of mars and relayed back a storm of data including over 715 images. It was launched on November 5, 2013 and entered the orbit of mars on September 24, 2014, in its first attempt.



CHINA LAUNCHED UNMANNED CARGO SPACECRAFT

China launched its first unmanned cargo spacecraft on a mission to dock with the country's space station, marking further progress in the ambitious Chinese space program. The Tianzhou 1 blasted off atop a latest generation long march 7.



COMMUNICATION SATELLITE GSAT-17 LAUNCHED

Communication satellite GSAT-17 was successfully launched by heavy duty rocket of Arianespace from spaceport of Kourou in French Guiana. It is designed to provide continuity of services of operational satellites in C, extended C & S bands.

NASA HIRES RAJA CHARI

NASA has chosen 12 new astronauts, including an Indian-American who will be trained for missions into earth orbit and to deep space. Indian-origin Lt. Col Raja Chari, a commander of the 461st Flight test Sqarron is a part of the squad. He is the 3rd Indian-origin NASA astronaut after Sunita Williams and late Kalpana Chawla.



ISRO PUTS 31 SATELLITES

ISRO puts 31 satellites including 29 satellites from others countries through PSLV C-38 successfully. It was launched on 23 June 2017 by the Indian Space Research Organisation (ISRO) From Satish Dhawan Space Centre at Sri-harikota, Andhra Pradesh.



SCIENCE

CONSTRUCTION BEGINS ON LARGEST TELESCOPE

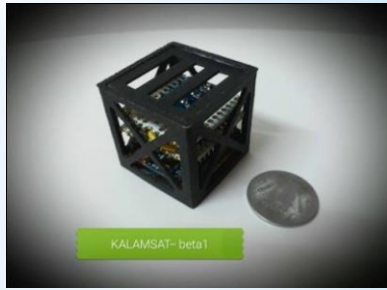
Construction work for building extremely large telescope has commenced in Chile. It will be constructed at 3000-meter-high mountain in the middle of the Atacama Desert. The ELT is being funded by the European southern observatory and is expected to begin its operation from 2024 It is five times larger than the top observing instrument in use today.



WORLD'S LARGEST X RAY LASER LIGHTS UP

World's x ray laser has generated its first light in Hamburg, Germany The 3.4km (2.1 mi) long European x ray free electron laser (XFEL) produced a pulsing laser light with a wavelength of 0.8 nm. XFEL is a billion times more brilliant than conventional synchrotron light sources and can capture images at atomic resolution.





WORLD'S SMALLEST SATELLITE FOR NASA

RifathSharook an 18-year-old student from Tamil Nadu has developed the world's smallest and lightest satellite. He is all set to break a global space record by launching a mere 64 grams satellite. The satellite made using reinforces carbon fibre polymer, is named 'Kalamsat' after former president Dr. APJ Abdul Kalam.

OTHER FIELDS



UK ELECTS ITS FIRST EVER FEMALE SIKH MP

Preet Gill has become the first female Sikh MP to be elected to the UK's houses of parliament while Tanmanjeet Singh Dhesi became the first turbaned Sikh MP in the UK parliament. Preet Gill won Birmingham Edgbaston seat by 24124 votes while Dhesi won a huge majority of 16998. Both Preet and Tanmanjeet are from Labour party.



'ASIA BUSINESSWOMAN OF THE YEAR' AWARD

An Indian origin educationalist in the UK has been named the 'Asian businesswoman of the year' in an award ceremony in Birmingham. 65-year-old Dame Asha Khemka was honoured for her efforts in the field of education and skills at the Asian business award ceremony.



IYENGAR INSTITUTE WINS FIRST YOGA AWARD

Ramamanilyengar memorial yoga institute, Pune has been selected as the first recipient of prime minister's award for outstanding contribution for promotion and development of yoga. Decision has been taken by the screening committee and evaluation committee in 2016. The institute was selected for its efforts in the field for over a period of 4 decades.

INTERNATIONAL YOGA DAY



International Day of Yoga or commonly and unofficially referred to as Yoga Day, is celebrated annually on 21 June since its inception in 2015.

The Indian Prime Minister Narendra Modi in his UN address suggested the date of 21 June, as it is the longest day of the year .Yoga is 5000 year old physical, mental and spiritual practice attributed mostly to India.

Yoga Day:

More than 3 lakh people from whole Gujarat congregated at the GMDC ground and four other venues in 'Vastrapur' and created 23 world records, on international yoga day.

The event was organised by the government of Gujarat and Patanjali yogpeeth, Makes two world records - the highest number of people taking yoga lessons at a single place (GMDC ground) and the highest number of people taking yoga lessons at multiple locations.

Twenty-two individuals had created world records in different categories in International Yoga Day.

22 records were broken during the pre-event yoga camp from June 18 to 20.

The records were confirmed by the golden book of world records, the records were set for the highest number of suryanamaskars, most suryanamaskars in one hour, the highest number of push-ups, most push-ups in an hour, the longest shirshasana, the longest shirsh-padmasana, and 51-hour yoga marathon.

International support: 175 nations, including U.S.A, Canada and China co-sponsored the resolution.” It had the "highest number of co-sponsors ever for any United Nation General Assembly resolution of such nature.

WORLD ENVIRONMENT DAY 2017

World Environment Day was first celebrated in 1974, trying to raise public awareness on rising environmental concerns from global warming. The initiative is led by United Nations. Ourselves. Every year, the World Environment Day is celebrated on 5 June.



On World Environment Day, Prime Minister Narendra Modi encouraged everyone to nurture a better planet and be committed to 'protecting our environment'. "This year's theme of 'Connecting People to Nature' is nothing but getting connected with ourselves. With Nature," he tweeted.

As well as urging Indians to help with an annual tree-planting drive around World Environment Day, Modi announced a new push to improve Indian waste management.

Starting 5 June, he said authorities will install color-coded litter bins in 4,000 towns to encourage people to separate solid waste from compostable waste and ensure more of it can be recycled or re-used, for instance as fertilizer.

Shah, a young lawyer from Mumbai, has led a drive since 2015 to remove the piles of plastic and other waste that had washed up and completely overwhelmed the beach. Volunteers from slum-dwellers to Bollywood stars have so far collected more than 4,000 tons of trash from the 2.5-kilometer strand.

IMPORTANT DAYS AND THEIR THEME OF YEAR 2017

DAY	DATE	THEME 2017
World Health Day	7 th April	Depression: let's talk
Earth Day	22 nd April	Environmental and Climate Literacy
National Technology Day	11 th may	Technology for inclusive & sustainable growth.
Mother's Day	14 th may (second Sunday of may)	Every mother knows
International Day Of Families	15 th may	Families, education and well-being.
International Museum Day	18 th may	Museum and contested histories: saying the unspeakable in museums
International Day Of Biodiversity	22 nd may	Biodiversity and sustainable tourism
World Environment Day	5 th June	Connecting people to nature
World Ocean Day	8 th June	Our oceans, our future.
World Day Against Child Labour	12 th June	In conflicts and disasters, protect children from child labour
World Blood Donor Day	14 th June	Give blood. Give now. Give often
International Yoga Day	21 st June	Yoga for health
International Day Against Drug Abuse	26 th June	Listen first- listening to children and youth is the first step to help them grow healthy and safe.

RANKING OF VARIOUS FIELDS

- ❖ India ranks 26th in World Bank power list.
- ❖ India rank 154th on healthcare index.
- ❖ India has been ranked 45th in IMD's world competitiveness list.
- ❖ Taj mahal has made it to the top 10 landmarks in the world by securing fifth position in the list
- ❖ Mumbai has been ranked the world's most densely populated city with 31,700 people per sq. Km by the world economic forum
- ❖ India has been ranked at 74th place for internet speed. Avg. 4g download speed in India (5.1 mbps) less than 1/3rd of the global avg. Speed of 16.2 mbps.
- ❖ India's cleanest city is Indore in Madhya Pradesh and the runner up, Bhopal, is also from the same state.
- ❖ Visakhapatnam railway station in Andhra Pradesh has the cleanest station followed by Secunderabad.

SPORTS

SINDHU WINS INDIA OPEN SUPER SERIES 2017

PV Sindhu produced a brilliant performance to clinch the India Open title after Olympic champion Carolina Marin.



VIRAT KOHLI -WISDEN'S LEADING CRICKETER

India cricket team skipper Virat Kohli was named Wisdom's leading cricketer in the world for 2016. Kohli scored 1215 test runs at a brilliant average of 75.93 last year. His 10 ODI appearances fetched him 739 runs at 92.37, while he scored 641 T20 International runs at 106.83.



RASHID KHAN-FIRST AFGHAN PLAYER IN IPL

Rashid Khan created history by becoming the first player from the war-torn Afghanistan to play IPL match. He will play for Sunrisers Hyderabad. Rashid was bought by SRH in Rs.4crore.



INDIA RISES TO 101 IN FIFA RANKINGS

India has climbed an unprecedented 72 places in the FIFA rankings in two years. India is now ranked 101, the highest since 1996.





ADVANI WINS ASIAN BILLIARDS CHAMPIONSHIP.

Sixteen-time world champion Pankaj Advani won his sixth Asian Billiards title and seventh overall Asian championship. The ace cueist defeated his compatriot Sourav Kothari 6-3 in an entertaining final of the Asian Billiards Championship in Chandigarh.



NADAL WINS 10th MONTE-CARLO TITLE

Rafael Nadal won the Monte Carlo Masters for a record-breaking 10th time by defeating Albert Ramos-Vinolas.



INDIA WON ALL 10 GOLD MEDALS IN TABLE-TENNIS

India won all 10 gold medals on offer at the South Asian Junior Table Tennis Championships at Mount Lavinia near Colombo, Sri Lanka.



PAKISTAN WINS CHAMPIONS TROPHY TITLE

Pakistan won the 2017 Champions Trophy cricket final after beating arch-rivals India by 180 runs at the Oval ground in Britain's capital, London.



INDIAN FENCER STRIKES GOLD

Indian fencer CA Bhavani Devi has won a gold medal in the Tournol Satellite fencing championship held in Iceland. With this win, Bhavani Devi has become the first Indian to win gold medal in an international fencing event.

CIVIL UPDATES

INDIA'S FIRST GREEN HIGHWAY

India's first smart and green highway. Eastern peripheral Expressway will be ready by August this year. It has been built at a cost of Rs.11000 crore. At least 2.5 lakh trees will be on the both sides of the roads with solar panels.



TAJ MAHAL AMONG TOP 10 GLOBAL LANDMARKS

Taj Mahal has made it to the top 10 landmarks in the world by securing fifth position in the list. It is the only Indian monument to figure in the world's top 10 travellers' choice awards for landmarks.



SECOND MOST DENSELY POPULATED CITY

Mumbai has been ranked the world's second most densely populated city with 31,700 people per sq. km by the World Economic Forum. Mumbai is also the most populous city in India and ninth most populous agglomeration in the world.



RAIL ROUTES DECLARED AS GREEN CORRIDORS

The north-western railway has declared the Barmer-Munawab and Pipad Road-Bilara rail routes in Rajasthan as green corridors. With the opening of above two routes, the total number of green corridors has increased to five. The green corridor ensures zero toilet discharge on rail tracks as part of its commitment to clean environment under the Swachh rail Swachh Bharat initiative.





FIRST UNDERWATER METRO IN INDIA

Kolkata will get India's first underwater metro system which will pass through Hooghly river. It will be connecting 2 main terminals: Howrah and Sealdah, each of which has a footfall of about 10-12 lakh passengers per day. The first tunnel which has been completed is built 30m below earth's surface near Howrah Bridge. It is first time that a tunnel has been made under a flowing river.



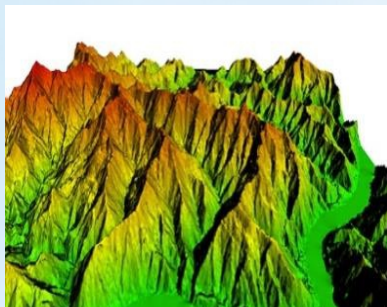
WORLD'S FASTEST ELEVATOR

World's fastest elevator is set to be installed in a skyscrapers complex in china. It is developed by Hitachi and runs at a speed of 1,200 metres per minute. It has various safety features including brake equipment using materials with outstanding heat resistance. Active guide rollers in the elevator absorb vibration during high speed operation, making the ride comfortable.



WORLD'S HIGHEST RAILWAY BRIDGE

In around two years from now, the Chenab river in Jammu and Kashmir will be spanned by the world's highest railway bridge that is expected to be 35 metres taller than the Eiffel tower. The massive arch-shaped structure, being constructed at a cost of around Rs. 1,100 crore in hostile terrain. The bridge forms a crucial link in the 111 km stretch between Katra and Banihal.



AERIAL SURVEY TO DETECT MINERALS.

An aerial geophysical survey to detect presence of minerals was launched across four minerals block in the country from Babasaheb Ambedkar international airport. Undertaken by the geological survey of India (GSI), employs low flying aircraft fitted with various equipment to detect the minerals.

MARS ROCKS TO BE TURNED INTO CONCRETE

Working with NASA, Civil Engineers at Stanford University have developed a form of concrete that humans could produce on Mars or the moon. Since it is impossible to ship tons of cement from earth to mars, the best bet is for humans to start making it when they arrive. The technique uses bovine blood to bind the materials.



CHENANI-NASHRI TUNNEL

It is India's longest road tunnel with a length of 9.28 km (5.8 mi). It is the first tunnel in the country with a fully integrated tunnel control system. The tunnel reduces the distance between Jammu and Srinagar by 30 km and cut travel time by two hours. The all-weather tunnel bypasses snowfall and avalanche prone areas in winter at places like Patnitop, Kud, and Batote that obstruct NH 44 every winter and cause long queues of vehicles - sometimes for days at length.



21 LAKH STREET LIGHTS REPLACED WITH LEDS

Replacement of 21 lakh conventional street lights with LEDs has resulted in annual energy savings of 295 million unit and reduction of 2.3 lakh tonnes of Carbon dioxide annually. The state-run Energy Efficiency Services Ltd (EESL) is the implementing agency for the SLNP.



ASIA'S LARGEST CHURCH IN NAGALAND

The Sumi Baptist Church Zunheboto (SBCZ) is said to be the largest church in Asia. The church, which is now open to public, stands tall at 1864.9 m above sea level and measures 23, 73,476 sq.ft. in the plinth area. The construction of the church took 10 years and is reportedly built on a budget of Rs 36 crore with a seating capacity of 8,5000 people.





L&T LAUNCHES FLOATING DOCK FOR NAVY

The first indigenously built Floating Dock (FDN-2) to repair Indian Navy ships was launched at Larsen & Toubro Shipyard at Kattupalli, north of Chennai. It will be handed over to the Navy after three to four months of trial. It can take up to 8,000-tonne ships with draught up to 7 metres, including submarine. FDN-2 will move to Andaman & Nicobar Islands to be used for assets not only of the Navy but also of other Services.



THE WORLD'S FIRST 'FOREST CITY'

The world's first 'Forest City,' created to fight pollution, is now under construction in Liuzhou, Guangxi Province, China. Designed by Stefano Boeri Architetti, a team that develops green projects all around the world, the futuristic Forest City will be home to a community of about 30,000 people. Liuzhou Forest City will be self-sufficient, running on renewable energy sources such as geothermal and solar energy.



FIRST TRAIN THAT RUNS ON A VIRTUAL TRACK

China has unveiled the world's first 'rail less' train. A train that runs on virtual tracks making use of sensor technology instead of metal rails. The new train is equipped with sensors that allow it to "read the dimensions of roads" and plan its own route. The new train is part of China's attempts to develop "intelligent rail express system". The 30-metre train has three carriages as of now and can carry 300 passengers.

KOCHI METRO



Kochi Metro is a newly inaugurated metro system in the south Indian city of Kochi in Kerala.

The Kochi metro is said to be India's eighth inter-city metro rail project.

The first phase is being set up at an estimated cost of 51.81 billion (US\$800 million).

The foundation stone for the Kochi metro was laid by former Prime Minister Dr. Manmohan Singh in 2012, construction work was started in June 2013 and a 13.4 km (8.3 mi) section of the line from Aluva to Palarivattom was opened to public on 17 June 2017 by Shri. Narendra Modi , the Prime Minister of India.

A second 5 km (3.1 mi) section from Palarivattom up to Maharaja's College will be made operational by August 2017.

The metro train consists of three coaches that can seat 136 passengers and it carry 975 people in total.

Maximum speed per hour is 98 kilometers. However, the average speed in Kochi has been limited to 35-40.

Features

- It is the fastest metro project in India in terms of completion time of 45 months.
- The Kochi metro project became the first metro in the country which connects rail, road and water transport facilities.
- Keeping with the best environmental practices, the Kochi metro is the first metro system in the country to use solar power to meet a quarter of its electricity requirement.
- At every sixth of the 4000 pillars, the government plans to build vertical garden that will use recycled municipal waste.
- Kochi metro was lauded for its decision to employ Kudumbashree workers (Kudumbashree is the poverty eradication and women empowerment program implemented by the State Poverty Eradication Mission of the government of Kerala) and also members from the transgender community.
- Kochi metro is also involved in sustainable initiatives with the introduction of non-motorized transport corridors in the city.
- Kochi metro also includes the technology for driverless trains and is hoping to implement this in the near future.
- The coaches are made by Alstom of France at Alstom plant in Sri city, Andhra Pradesh.
- The coaches are equipped with the regenerative breaking mechanism which recharges batteries as breaks are applied.
- Apart from the regular tickets, it has also adopted a single card, single timetable and a singular command and control.
- This debit card along with the Kochi One Mobile App will allow passengers to access all modes of public transportation as well as be utilized for mercantile and internet transaction and will introduce the 'click and collect' feature in the near future where goods ordered online can be collected in the metro stations.
- Every Kochi Metro station is designed on a specific theme around Kerala culture and geography.
- Priority seats are provided for pregnant women and for seniors in the train. These are colored lime green. Ordinary seats are colored emerald green.
- Doors of the train closes to the beat of chenda (drum) which is the part of Kerala's tradition.

DHOLA-SADIYA BRIDGE



The Bhupen Hazarika Setu (Dhola–Sadiya Bridge) is a beam bridge in India, connecting the northeast states of Assam and Arunachal Pradesh. The bridge spans the Lohit River, a major tributary of the Brahmaputra River, from the village of Dhola (Tinsukia District) in the south to Sadiya to the north. At 9.15 kilometres (5.69 mi) in length, it is the longest bridge in India. It will ensure 24X7 connectivity between upper Assam and Eastern part of Arunachal Pradesh.

Construction: The Ministry of Road Transport and Highways completed a feasibility study of the project in August 2003 after demands from local constituents. In January 2009, the bridge was approved for construction with funding from the Government of India as part of the Arunachal Pradesh Package of Roads and Highways. Construction began in November 2011 as a public-private partnership with Navayuga Engineering Company, with an expected completion in 2015. However, due to construction delays and cost increase, the bridge's completion date was pushed into 2017. The project cost around 10 billion (US\$155 million) and construction took over five years to complete.

It is 3.55 kilometres (2.21 mi) longer than the Bandra-Worli Sea Link in Mumbai, making it the longest bridge in India. The bridge was inaugurated on 26 May 2017 by Indian Prime Minister Narendra Modi and Nitin Gadkari (Minister of Road Transport and Highways). The bridge is named after Bhupen Hazarika, a famous musician, poet, filmmaker and lyricist from Assam.

THE GOLDEN QUADRILATERAL



The Golden Quadrilateral is a highway network in India connecting Delhi, Mumbai, Kolkata and Chennai, thus forming a quadrilateral of sorts.

It is the first phase of the National Highways Development Project (NHDP), and consists of building 5,846 kilometres of four/six lane express highways at a cost of Rs. 60,000 crore (US\$ 12.317 billion at 1999 prices).

As of 2008, while the Golden Quadrilateral makes up under 2 percent of India's road network, it carries about 40% of the country's traffic.

As of February 2010, 5766 km of the entire work has been completed and work on remaining 80 km is under progress.

The GQ project is managed by the National Highways Authority of India (NHAI) under the Ministry of Road, Transport and Highways.

The Mumbai-Pune Expressway, the first controlled-access toll road to be built in India is a part of the GQ Project though not funded by NHAI, and separate from the main highway.

Infrastructure Leasing & Financial Services (IL&FS) has been one of the major contributors to the infrastructural development activity in the GQ project.

Benefits:

The GQ project establishes better and faster transport networks between many major cities and ports.

It provides an impetus to smoother movement of products and people within India.

It enables industrial and job development in smaller towns through access to markets.

It provides opportunities for farmers through better transportation of Produce from the agricultural hinterland to major cities and ports for export, through lesser wastage and spoils.

Finally, it drives economic growth directly through construction as well as through indirect demand for cement, steel and other construction materials Network of highways.

Only National Highway is used in the Golden Quadrilateral. The four legs use the following National Highways:

- Dehli-Kolakata: NH2
- Delhi-Mumbai: NH 8 (Delhi-Kishangarh), NH79A(Ajmer Bypass), NH 79 (Naziabad- Chittaurgarh), NH 76 (Chittaurgarh – Udaipur), NH 8 (Udaipur – Mumbai)
- Mumbai- Chennai; NH 4 (Mumbai- Bangalore), NH7 (Bangalore-Krishnagari), NH 46 (Krishnagari – Ranipat), NH 4 (Ranipat – Chennai).
- Kolkata – Chennai: NH 6 (Kolkata – Kharagpur), NH 60 (Kharagpur – Balasore), NH 5(Balasore – Chennai).

SARDAR SAROVAR DAM: “FROM IDEA TO REALITY”



1901: Irrigation commission of India proposes a barrage near Bharuch. Later dumps the idea saying that black alluvial soil is not good for flow irrigation.

1947: Central water and power Commission takes up Narmada water resource study.

1960: On August 12, Gujarat irrigation minister Natu Adani announces

That the planning commission has approved the multipurpose Navagam irrigation project.

1961: On April 5, PM Jawaharlal Nehru says that the foundation of the Rs. 93 cr., 49.37 m high dam in Navagam. The first phase completion planned for 1968.

1962: Cost of dam escalates to Rs. 200cr. Gujarat CM Bahawanlal Mehta and Madhya Pradesh CM DP Mishara discusses a 1,600m water way through the Narmada between the Arabian sea and the Bay of Bengal, Gujarat offers to construct another dam, 95m high in Punasa in MP. Talks fail.

1964: In September Dr. A N Khosla Commission is set up by PM LalBahadur Shastri to evolve a master plan for the Navagam dam.

1965: In September, Khosla submits a report suggesting Rs. 1000cr to be spent to develop an irrigation system and hydel power. MP objects to the report.

1968: In July, Gujarat demands a tribunal under interstate Water dispute act.

1969: Three member Narmada water disputes tribunal, chaired by SC judge Justice V Ramawami, is set up.

1972: NWDT declares that Rajasthan is not entitled to any portion of Narmada water as it is not a riparian state. MP and Rajasthan appeal in the SC.

1974: Four states agree that Rajasthan to get 0.5 million acre feet of water and Maharashtra to get 0.25 MAF, NWDT proceedings begin.

1979: NWDT fixes the dam height at 138.68m. Awards 67% flow to MP and 33% flow to Gujarat, construction starts at dam at full swing.

1985: The World Bank agrees to provide \$450 million for the dam.

1986: T Scudder, an American environment expert is appointed as consultant by the World Bank to oversee rehabilitation.

1987: In April contract awarded for 1210 m long and 163 m high concrete gravity dam. On June 24, environmental day clearances given to the project.

1988: SardarSarovar Narmada Nigam Ltd formed.

1992: A former administrator of the UNDP, BradforceMoarse, is appointed by the WB to review the SSP.

1993: On March 30, India declares to do without the WB loan and refuses the last instalment of \$170 million.

1995: January, the SC stops SSP dam construction at 80m.

1999: Gujarat appeals before the SC; Interim order allows dam height to 85m.

2000: On October 18, the SC gives the go-ahead for construction to 138m in stages depending on resettlement programme.

2002: In May, dam reaches 95m.

2003: On May 18, Narmada water reaches Bhuj, dam height raised to 100m.

2004: In March, the SSP allowed to raise height to 110m. Gujarat assures Maharashtra that it will bear all rehabilitation costs.

2006: In March, the Narmada Control Authority gives clearance for the height of the dam to be 121.52m.

2006: On April 16, Gujarat CM Narendra Modi begins 51-day fast.

2014: In June, NCA headed by PM Modi gives the final clearance to raise the SSP dam height to 138m

2016: On August 10, all 30 gates were installed but kept open.

2017: On February 8, Supreme Court directs immediate completion of rehabilitation of ousters in three months.

In May, Environment sub group recommends closure of gates in its 50th meeting. On June 16, rehabilitation and resettlement sub group and NCA allow all 30 gates to be closed

MORBI “HONARAT” (FAILURE OF MACHHU - 2 DAM)



This dam was built near Rajkot in Gujarat, India, on River Machhu in August, 1972, as a composite structure. It consisted of a masonry spillway in river section and earthen embankments on both sides. The dam was meant to serve an irrigation scheme. Its,



storage capacity of $1.1 \times 10^8 \text{ m}^3$. The dam had a height of 22.56 m above the river bed, a 164.5 m of crest length of overflow section, and a total of 3742 m of crest length for the earth dam.

Not many of us know that on August 11, 1979, the four-kilometre long dam (Machhu Dam-II) on the Machhu river in Gujarat collapsed leading to a deluge in the industrial city of Morbi located five kilometres downstream and the surrounding rural areas that destroyed thousands of homes and lives. This devastating flood occurred in the wake of ten days of persistent rainfall when the dam's floodgates wrongly designed for passage of 220,000 cusecs of water received an inflow of 400,000 cusecs. The earthen dam overtopped and collapsed. Within 20 minutes floods of 12 to 30 ft height inundated the low-lying areas of Morbi town. The dam authorities had been ignoring repeated warnings from the central authorities regarding the calculation of maximum flood. The book through vivid first-person accounts exposes the systematic injustices surrounding the flood.

People scrambled for rooftops, hilltops, and other safe grounds in order to save themselves. At the Vajepar Ram Mandir, over a hundred-people breathed their last when the deluge submerged the temple. Women were compelled to drop their babies into the furious surge in order to save themselves and people lost their loved ones in a flash. The final death count is estimated to be between 5,000 and 10,000.

The Machhu Dam disaster offers a cautionary tale regarding the dangers of massive development undertaken without foresight or precaution.

CIVIL PERSONALITY: 'KANWAR SEN'



Kanwar Sen (1899–1979) was an eminent civil engineer from Rajasthan, in India. He was the Chief Engineer in the Bikaner state who came up with idea of Rajasthan Canal. He successfully implemented Gang Canal project too. He was considered the doyen of irrigation engineering of his time. He was awarded Padma Bhushan in 1956.

Career

- He was born in 1899 in Tohana in Hisar District (Haryana).
- He was educated at D.A.V. College, Lahore. He graduated as a civil engineer from Thomason College of Civil Engineering, Roorkee (now, IIT Roorkee) in the year 1927 with honours.
- For nearly half a century, the name of Dr. Kanwar Sen has been a byword for river projects and development of water resources both in India and abroad. He was closely connected with major projects - from the Damodar Valley to the Rajasthan Canal, from Hirakud Dam, to the Narmada Project.
- Besides, he contributed his utmost in design and building up the Central Water and power Commission. Dr. Sen's passionate involvement with his work - especially in saving Dibrugarh from floods and during the mishap at the Bhakra Dam, endeared him to his colleagues, both in India and abroad.

- His greatest achievement was his association with the Mekong Development Project for nine years as an UN expert. He has also been associated with the preparation of a Master Plan for the Development of the Narmada River.
- He has written a book called -Reminiscences of an engineer. KanwarSen and Karpov (1967) presented enveloping curves for Indian rivers.

Awards & Achievements

- He was awarded Padma Bhushan, the third highest civilian award in 1956.
- He was bestowed with great honours like O.B.E. (Order of British Empire).
- He was offered the Order of the Elephant by the Government of Thailand, but could not accept it, as he was serving with the United Nations. He was elected as President of Central Board of Irrigation and Power in 1953, Vice President of International Commission on Irrigation and Drainage 1954 and President of Institute of Engineers India in 1956.
- He was awarded Honorary Life Membership by the American Society of Civil Engineers and Honorary Life Fellowship by the Institution of Engineers India.

CIVIL DEPARTMENT

QUIZ COMPETITION & PRESENTATION ON BRICK MAGAZINE (JAN-MARCH 2017)

27th April, 2017

Department of civil engineering, GCET organized a Quiz Competition under Student Skill Development Program on 27th April, Thursday 2017. And on the same day, presentation on quarterly magazine of department i.e. BRICK magazine Jan-March 2017 was given by students of 2nd year.



The session was started with presentation of BRICK Magazine. At first brief information about magazine was given and then Dr. Khadeeja Priyan (HOD) was requested for inaugurating the magazine.

After completion of presentation, Quiz Competition was held in which, students of 1st and 2nd year have participated. The first round of quiz was held one day before, in which around 70 students participated with full enthusiasm and zeal. Top 10 students were selected for next round from each year. Quiz was continued on the next day after presentation of departmental magazine.

For next round, 5 teams having 4 members each were made. Each group had 2 students from each year. Second round was visual and rapid fire. In visual every team were supposed to identify personality and pictures of structures related to civil engineering. After this the second part of this round was rapid fire, in which each team was supposed to answer as many questions they can in one minute.

From the score of 2nd round, three teams were selected for final round. Final round was jeopardy. Each team was supposed to select question of specific point from any of the given categories. Negative marking was also there for this round. It was quite interesting round because each team was trying to increase their score by selecting higher point questions.



The winners of the competition were Mihir Thacker, Archana Nair from 1st year and Nirav Tank, Digvijaysinh Zeal from 2nd year.

Overall the magazine presentation and quiz competition was organized very well. It was quite informative and it is definitely going to be beneficial for all students.

TECHNICAL EVENTS OF CIVIL ENGINEERING IMAZE'17

April 8th-10th, 2017



IMAZE 2017, the technical festival of GCET was celebrated with great zeal and enthusiasm from 8th to 10th April, 2017 with the motto 'Soaring Beyond Precipice'. This year 16 Technical events and 10 non-tech events were organized. There was an educational expo for students who want to study abroad. A project competition was organized for students of 4th year who presented their final year projects and competed with students from all across Gujarat.

Civil Department had shown active participation in IMAZE 2017. There were two technical events organized by 2nd and 3rd year students of Civil Department. The overall coordination of events was managed by the branch heads Dhruv Patel, Anurag Tripathi and Yash Bhavsar 3rd year students under the guidance of Event Coordinator Prof. Nirajkumar Mandowara.

The first event (TAME THE TORRENT) coordinated by the students of 3rd year (Harsh Patel & Sohil Dadwane). Tame the Torrent was divided in three major rounds. It was a competition for topspot. The first round took place on 8th April, in which about 120 students participated. In this challenge, their aiming skills were tested and basic technical questions based on their fate were asked. The second round took place on 9th April. It was divided in two sub phases. The teams had to find a general clue and prove to be 'flash' the second phase was about chain surveying. The third round was on 10th April. For the final round, the teams had to construct a dam which can resist the raging torrent.



These cond event (CLASH OF PLANS) from civil department was coordinated by 2nd year students (Shivani Khetani and Jenus Mehta). Clash of Plans consisted of three rounds. The first round which took place in civil department garden consisted two games. The games included balloon shooting with airgun and a rapid-fire round for each team of three members. The questions were general knowledge as well as basic civil engineering questions. The next round which consisted of two elimination games was based on an American games how called Family Feud. This game got everyone on their feet to answer questions quickly in eliminated amount of time. Only 15 students (in group of 3) went to the third round, in which they had to make a 3D model of a residential home, provided that the plot size

and dimensions were given. The final round of the event was judged by Prof. Snehal Popli and Prof. Krunali Patel. Although all models were nice, the final prize went to second year students



Civil Department had also organized two workshops for students of Civil Engineering. One workshop was on GIS and another one was on Stadd Pro software (for 3rd year students). Thus, Imaze'17 was a successful event where students, faculties as well as anyone involved, learned a great deal along with enjoyment.

INDUSTRIAL VISIT TO GANDHINAGAR. (BISAG, ISRO, ISR)

21st April, 2017

The Department of Civil Engineering had organized industrial visit to BISAG, ISRO, and ISR for the students of 2nd year Civil Engineering Department, GCET. 61 students of 4th semester and 3 faculty members had accompanied the visit. The main aim of the visit was to make aware of the recent technology in the field of GIS and GPS, which is nowadays very much important in the field of planning and designing, Disaster Management, Water resources, soil investigation etc. Firstly, the students visited “BISAG”. At first step, the students have been taken to one of its studios where they record their programs and came to know about its recording and sound system. After visiting BISAG the students moved towards the ISR. The students visited two labs which one of them was geo-tech lab with one of their staff who explained some basic information about geology & showed the different equipment’s of soil testing along with the process. They also showed the seismogram along with its function where 24 hours recording of the earthquake can be done. At the end, the students reached ISRO, Ahmadabad. In this the students visited VSSE.



In the ISRO, the knowledge about the Remote Sensing, GIS & GPS had been imparted to the students in the form of presentation by one of the expert at ISRO. The session ended with a short documentary on Mars space probe, The “Mangalyaan”. After that, the students saw an artificial sphere which was showing that other planets are located around the earth. The students were even shown the live readings from a component that was connected to satellite. Then the students were explained how and what is the importance of different components of a space suit, how they worked etc.

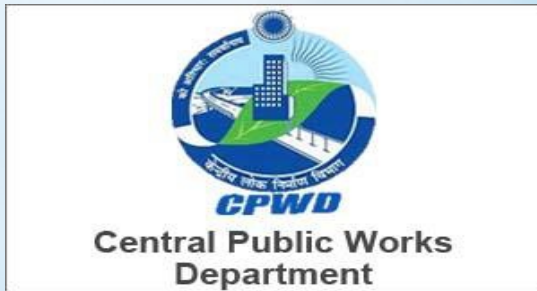
The whole visit was very much knowledgeable and informative for the students as well as faculties.

INTERNSHIP REPORT

Internship provides a platform for the students to gain exposure to real world problems and issues that perhaps are not found in textbooks.

Many students of 4th year Civil Department had done their internships in different well-known companies during their 6th semester

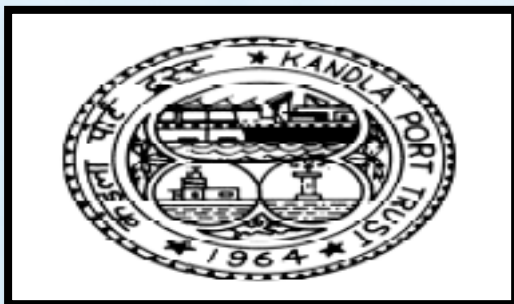
1. CENTRAL PUBLIC WORKS DEPARTMENT (CPWD), AHMEDABAD.



CPWD has been serving the nation for the last 162 years. It has now grown to a comprehensive construction management department which provides services from project concept to completion, consultancy and maintenance management.

Twenty students had done their internship in CPWD and during the internship they visited Income Tax Office, Rapid Action Force and IIT Gandhinagar and gained a lot of knowledge.

2. KANDLA PORT TRUST



Kandla port or New Kandla is a sea port in Kutch district of Gujarat state in western India, near the city of Gandhidham. It is one of major ports on west coast. Kandla was constructed in the 1950s as the chief seaport serving western India. It is the largest port of India by the volume of cargo handling.

Three students had done their internship in Kandla Port and they visited AEGIS Ltd., CRL Terminals VOPAK Pvt. Ltd., Cargo Jetty and Tuna Port.

3. INDUSTRIAL TRAINING REPORT AT L&T POWER

A 6th Semester student was chosen for the training program in L&T Power at “2X660 MW Supercritical Thermal Project.” L&T Power is an organization focused on construction of Coal based and Gas based power plants. The knowledge of basic functions of cooling tower and its construction of basic components was assimilated by the



intern. The visit of construction of Admin building and parking gave the fundamental knowledge and the practical experience of laying of slab, beams, staging, formworks. They worked at Natural Draught Cooling Tower. The work experience of the student in L&T was par-excellence. The full cooperation from the experienced people made his learning quite interesting and easy. The working environment was extremely professional apart from being healthy.

4. INTERNSHIP AT DUNGARPUR, RAJASTHAN UNDER NBCC, INDIA



13 students from 6th Semester student were chosen for a training project of Government Medical College and Hospital in Dungarpur, Rajasthan. At first, they visited the whole site of the project. They learned about the detailed measurements of the elements and components of building. They performed many tests like compressive

strength of cube, silt content test in fine aggregate and sand, slump cone test in fresh concrete, sieve analysis of fine and coarse aggregate, aggregate impact loading testing laboratory. They also visited Brick Manufacturing Plant and Ready-Mix Plant. Their overall experience was good and they learned many practical applications on field.

Literature

FRIENDS INDEED

-They say friends we are

As we are and yet we aren't

-For little do they know the definition of soul mate

Which we are and yet we aren't

-If only I could by words manifest the beauty and the charm of this friendship

Which I can and yet I can't

-For that apologies I have for times hard

In my heart gratitude glides to the one who stood beside

-When seasons changed the card

You disappeared, breaking me apart

-Mere words I chose to describe the bond we share

To manifest all my care

-Of infinity I dream, of eternity I ask

Hopes I have to get for what I ask

-However, we left, saying a final Bye,

Assured a long span for a real Hi

-Now I only have those moments shared

Recalling that sunshine, moments glared

-DEVARSH SHAH

CIVIL 2nd YEAR

DAWN

Deep into that darkness peering,
Long I stood there,
Wondering, fearing, doubting,
Dreaming dreams
No mortal ever dared to dream before.

The stars, like lanterns far away
Light a way in the midst of blue
So the wind may not wander astray
Through woods of sal and yew.

A night bird lifts its wings to flight
Like a ghost rising from the grave
And with its voice calls out the night
As it slowly ends its dark enclave

The mist falls over sea and land,
And washes away the dust.
Asleep is now both head and hand,
Asleep is hate and lust.

As the owl claims back his home,
As the waves wash towards the shore.
The stars and moon disappear in foam
Its morning, morning again, once more.

-PRATIK KABRA
CIVIL 3rd YEAR

A HUSTLE LIFE!!!

Man! Man! Unhappy man!

Come and see the green 'y' land,
Fully of grains and beautiful narrow lanes,
Love the nature, not the modern man-made land.

Man! Man! Jostle man!

Whole day running everywhere,
In search of pleasure and routine ware,
Come on man, ask the nature what she had spread everywhere.

Man! Man! Filthy man!

Living in the acidic rain,
In the city having no proper drain,
Spoiling flora-fauna on the other hand.

Man! Man! A lot of Stress!

Working every day in the press.
Searching whole day for criminal trace,
Come on man, ask the nature how to get the body rest.

-ARPIT JAIN

CIVIL 4th YEAR

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