

**G H PATEL COLLEGE OF ENGINEERING &
TECHNOLOGY, VALLABH VIDYANAGAR**

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Department of Civil Engineering**

A Quarterly

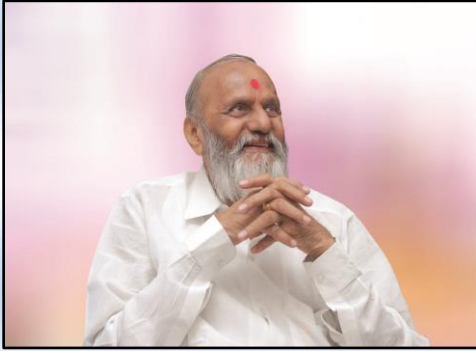
BRICK

(Booklet of Recent Information for Career & Knowledge)



For Civil Engineers

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About the Management and the Institute

Charutar Vidya Mandal decided in 1995 to set up a private engineering college as per the norms of the All India Council for Technical Education (AICTE) and the policy of the state Government. Shri Gordhanbhai Hathibhai Patel, an eminent philanthropist of Gujarat, made a generous donation of rupees three crores for the new college. In honour of this magnanimous gesture, the college was named G H Patel College of Engineering & Technology, popularly known as GCET. The college started functioning in year 1996. The institute is built on more than 10 acres of land. The architecturally imposing college building houses class rooms, offices, well-equipped laboratories, several computer centers, drawing halls, audiovisual rooms, workshop and other facilities. Spacious corridors linking different sections, various ‘open-to-sky’ quadrangles and, a garden with central fountain in front of man building – all these add up to a pleasant and harmonious academic atmosphere. In keeping with today’s needs, computing facilities with 943 computers having minimum i3 processors on network and an internet connection through 48 Mbps shared radio link have been provided for use of students and staff of the college. The entire campus is Wi-Fi enabled. A silent Diesel Generator of 125 kVA is installed for power backup. A boy’s hostel, a girls’ hostel, a library building and staff quarters, centrally air-conditioned auditorium and a seminar hall are also located on the campus.

The Charutar Vidya Mandal (CVM) is one of the largest and oldest education trusts in Gujarat, which manages 48 institutions from junior KG to higher education including four engineering colleges. The trust was established in 1945 along with the birth of Vallabh Vidyanagar. Great personalities like Bhaikaka (a

renowned Engineer), Dr. H M Patel (Former Home and Finance Minister, Govt. of India) served as Chairman of CVM for long time. Dr. C L Patel is the present Chairman of CVM since 1994. He is proactive and visionary, very effective and dynamic as well as devoted leader. Under his tenure as a Chairman he has not only maintained the existing institutes very well but started number of new courses in existing institutes and established number of new institutions in Vallabh Vidyanagar as well as in New Vallabh Vidyanagar. In fact, New Vallabh Vidyanagar is a brain child of Dr. C L Patel.



G H Patel College of Engineering & Technology (GCET) is managed by one of the highly reputed and the largest educational trusts Charutar Vidya Mandal (CVM) since inception in the year 1996. GCET has striven to develop itself into an 'Institution of Excellence' in education and research in consonance with the spirit of modern Gujarat. In meeting this challenge for excellence, GCET has shaped its institution to the contemporary as well as future demands of need-oriented education.

GCET has been awarded by DATAQUEST T-School award in 2016 as "Excellence in Infrastructure among Private institutes in the WEST". As per the latest Dataquest survey, GCET is ranked 28th position in the country. GCET was honoured By ABP News National Education Awards 2016 With "Outstanding Engineering Institute WEST". Today GCET has a total strength of 2500 UG and PG students studying in different branches of Engineering under the tutelage of 130 dedicated and competent faculty members.

Civil Engineering branch has been started in the college from the academic year 2014 with an intake of 60. A separate building is constructed for this programme and all the required laboratories have been developed.

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Current Affairs

ISRO CONDUCTS SUCCESSFUL TEST LAUNCH OF SCRAMJET ENGINE



The Indian Space Research Organization (ISRO) for the first time has successfully conducted the Scramjet (or Supersonic Combusting ramjet) engine test. The test was conducted from Satish Dhawan Space Centre, Sriharikotta in Andhra Pradesh and has successfully has met all the intended parameters.

Key facts

- The scramjet engine was test launched on board of RH 560 sounding rocket.
- RH 560 sounding rocket is two stage Advanced Technology Vehicle (ATV). The ATV along with the scramjet engines weighed 3,277 kg at lift-off. During the test, ATV was able to fly at Mach 6 (six times the speed of sound) speeds.

- The scramjet uses hydrogen as fuel and oxygen from the atmospheric air as the oxidizer.
- With this, India became only the fourth nation to flight-test a scramjet engine after United States, Russia and China.

SELF DRIVING CAR (26th AUGUST)

The world's first self-driving taxi service was launched in Singapore. This launch is significant as it offer technology demonstration that could revolutionize the future transport industry. The self-driving taxi service was launched Singapore based nuTonomy, an autonomous vehicle software startup. With this nuTonomy became entity in the world first to offer self-driving taxi rides to the public.



Key Facts

- NuTonomy has started this service with small fleet of six cars. It includes

modified versions of Renault Zoe and Mitsubishi i-MiEV electric car.

- Each car is fitted with six sets of Lidar (Light Detection and Ranging), a detection system that uses lasers to operate like radar that constantly spins on the roof.
- There are also two cameras on the dashboard to scan for obstacles and detect changes in traffic lights.
- During the trail phase, these vehicles have a computer engineer and backup human driver in case anything goes wrong.

URJIT PATEL (RBI GOVERNOR)



Urjit R. Patel (born 28 October 1963) is an Indian economist, consultant and banker, currently serving as Deputy Governor of the Reserve Bank of India (RBI).

Patel obtained his Bachelor's in Economics from the London School of Economics, M.Phil. degree from Oxford University in



1986. He received his doctorate in Economics from Yale University in 1990. He was at IMF India desk during the 1991–94 transition periods. He was posted to IMF country mission in India 1992–95. He has also been a non-resident Senior Fellow at the Brookings Institution since 2009.

After obtaining his PhD, Dr. Patel joined the International Monetary Fund (IMF) in 1990 worked on the USA, India, Bahamas and Myanmar desks at IMF till 1995. Thereafter he went on deputation the IMF to the Reserve Bank of India, where he played an advisory role in the development of the debt market, banking sector reforms, pension fund reforms, targeting of real exchange rate. After the two-year deputation with RBI, Patel became a Consultant to the Government of India in the Ministry of Finance, Department of Economic Affairs - a position he held from 1998 to 2001.

On 11 January 2013, Urjit Patel was appointed as Deputy Governor of RBI for a period of three years. He took over charge of the vital Monetary Policy Department, succeeding Subir Gokarn to the post.

On 20 August 2016, he was appointed as the governor of Reserve Bank of India (RBI) succeeding Raghuram Rajan.

KAMAL HAASAN (61) has been selected by France for its prestigious Chevalier de L'Ordre Arts et Lettres. It is also known as Knight of the Order of Arts and Letters. He has been chosen for this prestigious award recognition of his high level artistic excellence and distinguished career achievements.

THE ZHANGJIAJIE GLASS BRIDGE

“The Zhangjiajie Glass Bridge was designed to be as invisible as possible—a white bridge disappearing into the clouds,” said Dotan. The span, which soars above a gorge at the Zhangjiajie Grand Canyon, was designed by Haim Dotan Architects. The world's longest and highest glass bridge, Zhangjiajie Grand Canyon Glass Bridge opened to the public on 20th August 2016, above the breathtaking scenery of Wulingyuan area Located in Zhangjiajie, China – which was the inspiration for James Cameron’s movie Avatar.

Glass panels are set into its walkway, giving visitors vertigo-inducing views and photo opportunities of the canyon below. Steel beams support the structural glass plates, which Tel Aviv-based Dotan used to make the bridge as “invisible.”



The floor is made of double-layered glass that is 24mm (0.94in), and is reportedly 25 times stronger than regular window glass. It offers a way to enjoy a panoramic view for those thrill-seekers

willing to cross the bridge. The glass bridge will not only serve as a walkway, visitors can go bungee jumping and zip-lining off of it as well.



The Bridge can hold up to 800 people at once. Its transparent walkway is not only the largest of its kind ever built, but one of the most beautiful, with visibility over the top and sides, as well as through the bottom. The Zhangjiajie Grand Canyon Glass Bridge floats in harmony with the surrounding scenery and affords tourists incredible views of the nearby sandstone and quartz peaks, trees, and waterfalls. Plans are also in the works to introduce a bungee jump from the bridge in the coming months. It too will be the world’s highest once completed.

Key Features

- **Length:** 430 meters (1410 feet)
- **Width:** 6 meters (20 feet)
- **Height:** 300 meters (984 feet)
- **Highlights:** bungee jump and beautiful natural views of towering sandstone pillars
- Entrance tickets can only be obtained by reservation as only

8000 visitors have the opportunity to walk on the bridge

- The glass bridge is likely to be closed in severe weather
- Maximum 600 people are allowed on the bridge at one time

- The person with heart problem, high blood pressure or a fear of heights is not allowed on the bridge.

Smart City Updates

1. Why do we need Smart Cities in India?

As per the Census 2011, nearly 31% of Indian population lives in urban area and contributes 63% of India's GDP. It is estimated that the urban population will be 40% and the GDP contribution will be 75% by the year 2030. To meet the challenges of urbanization and to increase the living standards of the citizens, advanced infrastructural facilities are required and thus the Smart Cities are planned.

2. What is meant by a 'Smart City'?

Our cities are evolved through different cultures. Therefore, there is no universal solution for the problems faced by each city. Hence, the definition of smart city in the context of any other country may not be directly applicable to our cities. In general, a smart city is a comprehensive infrastructural solution for the city to be more sustainable in terms of institutional, physical, social and economic infrastructures. The city should be more resilient and accessible to the citizens through integrated systems and automated technologies such as intelligent buildings, smart grids, better mobility solutions and other infrastructural facilities.

The core infrastructure elements in a Smart City would include:

- Adequate water supply,
- Assured electricity supply,

- Sanitation, including solid waste management,
- Efficient urban mobility and public transport,
- Affordable housing, especially for the poor,
- Robust IT connectivity and digitalization,
- Good governance, especially e-Governance and citizen participation,
- Sustainable environment,
- Safety and security of citizens, particularly women, children and the elderly, and
- Health and education.

3. Smart City Mission in India

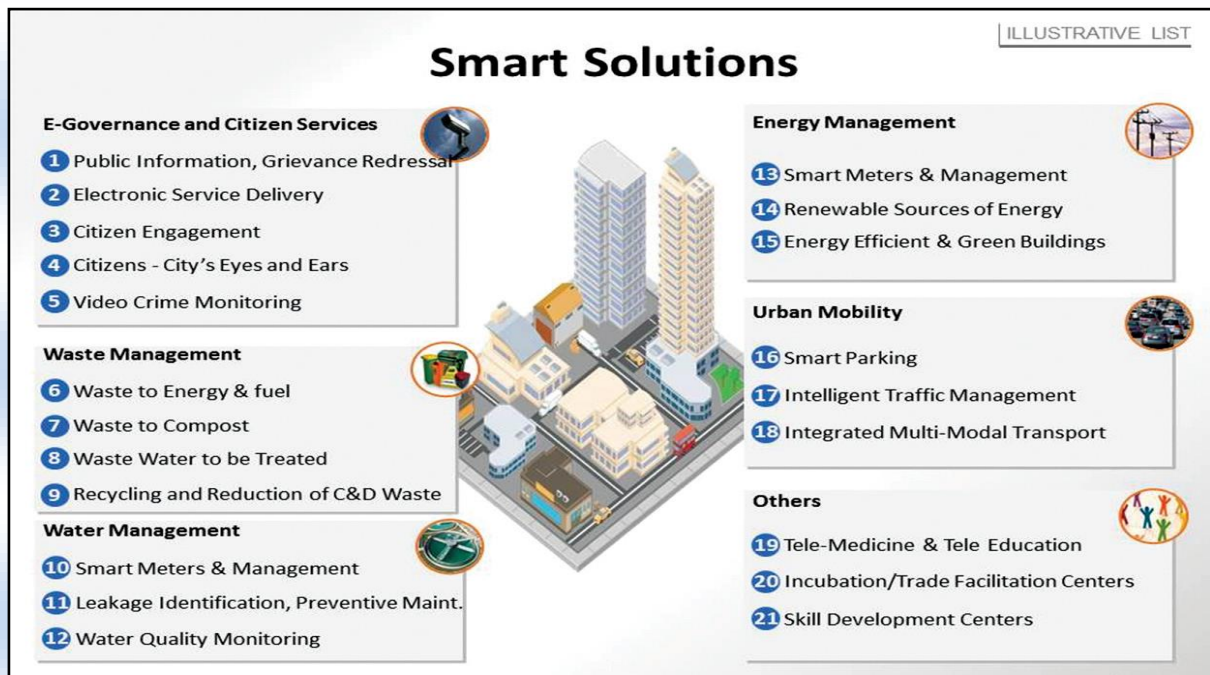
Narendra Modi Government has decided to select 100 smart cities and the Ministry of Urban Development (MoUD) has finalised different criteria for the selection. There are four area-based strategic components for the mission. They are (i) Retrofitting (City improvement i.e to make the existing area more efficient and liveable), (ii) Redevelopment (City renewal), (iii) Greenfield (City extension) and (iv) Pan-city initiatives (application of smart technological solutions to make the infrastructures and services more efficient). As per the criteria, the shortlisted smart city proposal should have either retrofitting or redevelopment or

Greenfield or a mix thereof and a pan-city smart solution(s).

The total number of 100 smart cities has been distributed based on an equal weightage (50:50) to urban population in the State / Union Territory (UT) and the number of statutory towns in the State /UT. Based on this, MoUD has decided some potential number of Smart cities for

existing service level (25 points), institutional systems and capacities (15 points), self-financing (30 points) and past track records (30 points). The parameters of the evaluation criteria for stage -2 were (i) City level evaluation (30 points) and (ii) Proposal level evaluation (70 points).

The first 20 cities out of 98 shortlisted cities were announced by MoUD and



each State /UT with at least one in each State /UT.

All the States and UTs were asked to nominate the cities for the selection and the final selection was done by MoUD through two stage competitions; Stage -1 (short listing of cities by States/UT) and Stage - 2 (The challenge round for selection). The parameters of the evaluation criteria for stage -1 were

Bhubaneswar, the capital of Odisha ranked top in the list. Surat (4th) and Ahmedabad (6th) are the two Cities from Gujarat in the list. In the first year, each of these 20 selected cities will be getting Rs 200 crores and in the next three years Rs 100 crores every year from GOI. The duration of the mission will be five years (FY: 2015-16 to FY: 2019-20). The next list of 40 cities and the last list of 38 cities will be announced later.

[REFERENCE: Mission Statement & Guidelines, Ministry of Urban Development, Government of India, June 2015]

GENERAL AWARENESS

General Awareness

Meditation is the practice of turning your attention to a single point of reference. It can involve focusing on the breath, on bodily sensations, or on a word or phrase known as mantra. The rest in meditation is deeper than the deepest sleep that you can ever have. When the mind becomes free from agitation, is calm and serene and at peace, mediation happens.

Meditation helps to form all other habits, it's helping in to become more peaceful, more focused, and less worried about discomfort, more appreciative and attentive to everything in life, improvement in communication, blossoming of skills and talents. It is necessary as it the most effective form of stress reduction. We are far from perfect, but it helps in going long way. To be unconditionally happy and to have peace of mind, we need to tap into the power of meditation.

simple as focussing on breath or silently repeating a mantra.

When we meditate, we use an object of attention, such as our breath, an image, or a mantra, which allows our mind to relax into this silent stream of awareness. When thoughts arise, as they inevitably will, we don't need to judge them or try to push them away. Instead, we gently return our attention to our object of attention. In every meditation, there are moments, even if only microseconds, when the mind dips into the gap and experiences the refreshment of pure awareness. As you meditate on a regular basis, you will spend more and more time in this state of expanded awareness and silence.

In life's paradoxical way, when we spend time meditating on a regular basis, we actually have more time. When we meditate, we dip in and out of the timeless, space less realm of consciousness. The



Meditation is easy and fun to learn if instructions are received from knowledgeable instructors. It can be as

state of pure awareness that is the source of everything that manifests in the universe. Our breathing and heart rate slow down, our blood pressure lowers, and our

body decreases the production of stress hormones and other chemicals that speed up the aging process and give us the subjective feeling that we are “running out of time.” In meditation, we are in a state of restful alertness that is extremely refreshing for the body and mind. As people stick with their meditation ritual, they notice that they are able to accomplish more while doing less. Instead of struggling so hard to achieve goals, they spend more and more time “in the flow” – aligned with universal intelligence that orchestrates everything.

Meditation isn't about stopping our thoughts or trying to empty our mind – both of these approaches only create stress and more noisy internal chatter. We can't stop or control our thoughts, but we can decide how much attention to give them. Although we can't impose quiet on our mind, through meditation we can find the quiet that already exists in the space between our thoughts. Sometimes referred to as “the gap,” this space between thoughts is pure consciousness, pure

silence, and pure peace. Probably most importantly, it has helped in understand our own mind. It helps in understanding our own self better and that will give flexibility and freedom. Highly recommended tips are available for meditation. And while I'm not saying it is easy, you can start small and get better and better as you practice. Don't expect to be good at first — that's why it's called “practice”!

Meditation helps in

- Brings happiness in life
- Reduces stress and depression
- Regulates heart rate
- Increases happiness
- Increases energy
- Increases immunity
- Balances emotions
- Improves focus and memory
- Releases fear

[REFERENCE: www.artofliving.org
Zenhabits.net/meditation-guide/
www.freemeditation.com
www.psychologytoday.com]

Sports Updates



Kabaddi World Cup in Gujarat

The International Kabaddi Federation (IKF) has announced that 2016 Kabaddi World Cup will be hosted in Ahmedabad, Gujarat between October 7 and 22, 2016. The event will see participation of 12 Kabaddi teams from around the world representing all the five geographies of the Olympic Games. These 12 teams are India, Canada, United States, United Kingdom, Iran, Australia, Poland, Pakistan, Bangladesh, South Korea, Japan and Kenya.

2016 Rio Olympic



The 31st Summer Olympics (or 2016 Rio Olympics) hosted by Brazilian City, Rio de Janeiro ended after 16 days of sporting spectacle. The games had seen participations of nearly 11,000 participants from 205 countries, including a first-ever refugee team featuring in 306 events of 42 sporting disciplines.

Key Facts

Medals Tally:

- United States ended the Games at the top of the medals tally. They finished with 46 Gold, 37 Silver and 38 Bronze.
- Great Britain finished on second spot with 27 Gold, 23 Silver and 17 bronze.
- China finished on third position with a tally of 26 Gold, 18 Silver and 26 Bronze.
- India finished at joint 67th position in the medals tally with two medals. They were won by Sakshi Malik (Bronze medal in 58 kg weight class of Wrestling) and PV Sindhu (Silver medal in Badminton).

Sports Personalities In 2016 Puserla

Venkata Sindhu (born 5 July 1995) is an Indian professional badminton player. At the 2016 Summer Olympics, she became the first Indian woman to win an Olympic silver medal.



Sindhu came to international attention when she broke into the top 20 of the BWF World Ranking in September 2012 at the age of 17. In 2013, she became the first ever Indian women's singles player to win a medal at the Badminton World Championships. In March 2015, she became the youngest recipient of India's fourth highest civilian honour, the Padma Shri. Her silver medal win in the women's singles event of the 2016 Summer Olympics made her the first Indian shuttler to reach the final of an Olympics badminton event and the youngest Indian to make a podium finish in an individual event at the Olympics.

Shakshi Malik became the fourth Indian to win a medal at the Summer Games and ended the agonising wait for a medal at the Rio 2016 Olympics.

Malik's inspiring performance becomes all the more significant when we trace her journey from Rohtak to Rio. Hailing from



a small village named Mokhra in the Rohtak District of Haryana; she began her

training at the age of 12. Sakshi had to fight boys early in her career and face social issues with women not allowed participating in wrestling in Haryana. She took up wrestling in 2002 under coach Ishwar Dahiya and since then has won several tournaments including gold medals in national tournaments.



Michael Phelps born on June 30, 1985, in Baltimore, Maryland, competed in his first Olympics at the age of 15, as part of the U.S. men's swim team.

28 medals—23 gold, three silver and two bronze—and setting the record for the most medal wins by any Olympic athlete.

Phelps announced his retirement in 2012, however, in April 2014, he announced he was coming out of retirement and would return to professional competition at the age of 28. In June 2016, he clinched his spot on the 2016 U.S. Olympic swim team, making him the first American male swimmer to earn a spot on five Olympic teams.

At the 2016 Olympic Games, he won one silver and five gold medals, becoming the oldest individual gold medalist in Olympic swimming history, as well as the first swimmer to win four consecutive golds in the same event, the 200-meter individual medley.

He went on to win medals at the Olympic Summer Games in Athens, Beijing, London and Rio, accumulating a total of

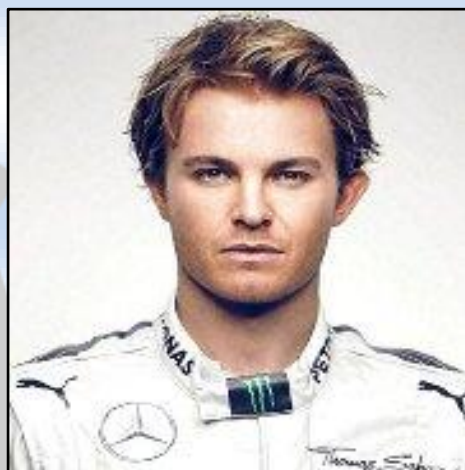
Saketh Myneni Qualifies For Us Open Singles



Saketh Myneni took another significant step forward in his professional career by entering the main draw of the US Open.

The 28-year-old Myneni, ranked 143 in the world, outplayed Pedja Krstin of Serbia 6-3, 6-0 in the third and final qualifying round. He did not drop a set in the three rounds of the qualifying event.

Belgian Grand Prix-2016



Mercedes driver Nico Rosberg from Germany has won the 2016 Belgian Grand Prix of Formula One. It was Rosberg's overall tenth championship title of F1 in his career and the sixth win in the 2016 season. Earlier, he had won Australian Grand Prix, Bahrain Grand Prix, Chinese

Grand Prix and Russian Grand Prix. 2016 Belgian Grand Prix was the thirteenth race of the 2016 season of Formula One in which total 11 teams had participated. The race was run on Circuit de Spa-Franco champs

Result of 2016 Belgian Grand Prix

- First Position: Nico Rosberg (Germany) of Mercedes team.
- Second Position: Daniel Ricciardo (Australia) of Red Bull.
- Third Position: Lewis Hamilton (United Kingdom) of Mercedes Team.
- Fourth Position: Nico Hulkenberg (Germany) of Force India.
- Fifth Position: Sergio Perez (Italy) of Force India.

Thank U ‘Dilscoop’ Dilshan

Tillakaratne Dilshan, a formidable Sri Lanka opening cricketer, has announced his retirement from ODIs after the third match against Australia on Sunday. He has also announced his retirement from T20 internationals after a match on September 9.



Dilshan, who made his ODI debut against Zimbabwe in 1999, played as a middle-order batsman in his early years. In 2007, he and Sanath Jayasuriya opened the innings for their country and there was no looking back for him. Dilshan is known for his innovative shots in both ODIs and T20Is. He invented a scoop, a shot played over the keeper's head, and it was called 'Dilscoop'. Many international stars have put this shot to effective use.



Facts & Figures



Dr. M Visvesvaraya

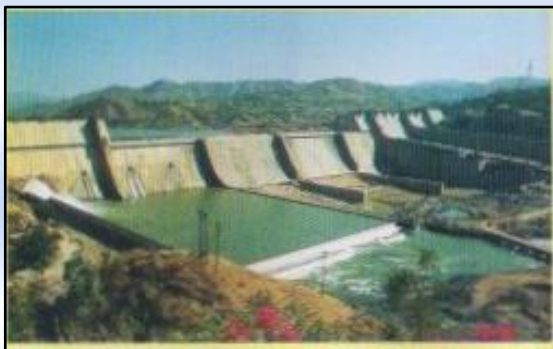
Sir Mokshgundam Visvesvaraya (Popularly known as Sir MV) was a notable Indian Engineer, scholar, states man and the divine of Mysore during 1912 to 1918. He was born on 15th September 1860 and was a recipient of the Indian republics highest honour, the “Bharat Ratna” in 1955. Every year 15th September is celebrated as engineer’s day in India in his memory. He studied Civil Engineering at the prestigious college of engineering, Pune. He was the chief designer of the flood protection system for the city of Hyderabad and he was responsible of the construction of “Krishnaraja Sagara” dam in Mysore.

SARDAR SAROVAR PROJECT:

The Sardar Sarovar Project is considered to be the life line of Western India. This is a multipurpose river valley project on the west flowing river Narmada. The Project envisages construction of a concrete gravity dam on the river Narmada in the Nandod taluka of Bharuch District; two power houses; one river bed underground power house and other canal head power house and a right bank main canal and distribution system to create an irrigation potential of 17.92 lakh ha. in Gujarat. It will also provide water for domestic and industrial use to more than 8215 villages and 135 urban centers.

Concrete dam 1210 m. long will have an average height of 125 m. so as to have the full reservoir level (FRL) at 138.68 m. The underground River Bed Power House will have an Installed capacity of 1200 MW whereas the canal head power house will have an installed capacity of 250 MW. The main Canal which will be 460 km long will have a capacity of 1133 cumec (40,000 cuses) at its head and 71 cumec (2,500 cusec) at its tail at Gujarat Rajasthan border.

I: BRIEF HISTORY OF THE PROJECT:



Although survey and investigations for the Narmada Project were initiated as far back as in the year 1947, It was only in 1961.

Subsequently, the scope of the project was revised and it was proposed to construct a dam with greater height than envisaged in Bharuch Irrigation Project to take the maximum advantage and full benefits, this being a terminal project. However, the work on the project could not be taken up due to interstate disputes. When the disputes could not be settled by negotiations, the Govt. of India at the instance of Gujarat constituted Narmada Water Disputes Tribunal in October 1969. After long deliberations, the Tribunal gave its final report in December, 1979. Thereafter the clearance from Environment and Forest Dept. was obtained in April-1987; only after which actual work on the project was taken up in the right earnest. To expedite the work, Sardar Sarovar Narmada Nigam Ltd. was created in 1988. Since then works of Sardar Sarovar Project are carried out by the Nigam. At present, works on the main dam, Power houses and the appurtenant works and Main Canal from 0 to 458 Km are completed.

II. PROGRAMME OF WORKS:

The phased programme of construction of the project, starting from the year 1987 is as under:

1. Main Dam = 11 Years
2. Diversion of water for irrigation = 8 Years
3. Hydro Power = 10 Years
4. Main Canal & Distribution System
 - (a) First Phase up to Mahi River = 8 years
 - (b) Rest = 13 Years

However due to certain problems beyond the control of the Sardar Sarovar Nigam work is delayed beyond Schedule.

III. PRESENT STATUS OF THE PROJECT

Subsequent to the declaration of the decision of Narmada Water dispute Tribunal in August-1979 the preliminary works of the project were immediately taken up for implementation. The works of over diversion, foundation excavation, the treatment of fault-zone plug in the deep river channel treatment for geologically weak features like argillaceous sand stone layers on the right bank and red bole layer on the left bank. Partial construction of left Non-over flow block 1 to 20 has been completed. The work of four rock fill dykes (dams) and link channels is also completed The environmental clearance for the project was obtained in April, 1987 and the final acceptance of the project from the Planning Commission was also obtained in October 1988.

Country	India
Location	Navagam , Gujarat
Coordinates	 21°49'49"N 73°44'50"E Coordinates:  21°49'49"N 73°44'50"E
Status	Operational
Owner(s)	Narmada Control Authority
Dam and spillways	

Type of dam	Gravity dam, concrete
Impounds	Narmada River
Height (foundation)	163 m (535 ft)
Length	1,210 m (3,970 ft)
Spillway capacity	84,949 m ³ /s (2,999,900 cu ft/s)
Reservoir	
Total capacity	9,500,000,000 m ³ (7,701,775 acre·ft)
Active capacity	5,800,000,000 m ³ (4,702,137 acre·ft)
Catchment area	88,000 km ² (34,000 sq mi)
Surface area	375.33 km ² (144.92 sq mi)
Max. length	214 km (133 mi)
Max. width	1.77 km (1.10 mi)
Normal Elevation	138 m (453 ft)
Power station	
Operator(s)	Sardar Sarovar Narmada Nigam Limited
Commission date	June 2006
Turbines	Dam: 6 x 200 MW Francis pump-turbine Canal: 5 x 50 MW Kaplan-type ^[1]
Installed capacity	1,450 MW
Website www.sardarsarvardam.org	



English Comprehension

The first step is for us to realize that a city need not be a frustrate of life; it can be among other things, a mechanism for enhancing life, for producing possibilities of living which are not to be realized except through cities. But, for that to happen, deliberate and drastic planning is needed. Towns as much as animals must have their systems of organs-those for transport and circulation are an obvious example. What we need now are organ systems for recreation, leisure, culture, community expression. This means abundance of open space, easy access to unspoilt Nature, beauty in parks and in fine buildings, gymnasias and swimming baths and recreation grounds in plenty, central spaces for celebrations and demonstrations, halls for citizens' meetings, concert halls and theatres and cinemas that belong to the city. And the buildings must not be built anyhow or dumped down anywhere; both they and their groupings should mean something important to the people of the place.

1. Cities can be made to provide full facilities for life, only if:

- (a) These can be mechanically developed.
- (b) Proper transport system is introduced.
- (c) Cinemas, theatres and concert halls are established there.
- (d) These are thoughtfully and vigorously designed to serve people's needs.

Ans: (d)

2. A suitable title for the passage would be:
Towns versus Animals.

- (a) Time versus Animals.
- (b) The Need for Planned Cities.
- (c) Transport and Communication System in a City.
- (d) The Need for Entertainment centers in a City.

Ans: (b)

3. "A city need not be a frustrater of life" means that:

- (a) One does not expect fulfillment of all life's requirements from a city.
- (b) City life provides all the essential needs of life.
- (c) A city does not necessarily lift man's standard of living.
- (d) A city should not defeat the fulfillment of life's aspirations and aims.

Ans: (b)

4. Which one of the following has the opposite meaning to the word 'frustrater' in the passage?

- (a) Promoter
- (b) Applauder
- (c) Approver
- (d) Executer

Ans: (a)

5. "The building must not be built anyhow or dumped down anywhere"....the statement implies that building:

- (a) Should be built with suitable material.
- (b) Should be constructed, according to some suitable design, not indiscriminately.

- (c) Should be scattered to provide for more of open space.
- (d) Should be built to enable citizens to enjoy nature.

Ans: (c)

6. The word 'drastic' in the passage means:

- (a) Orderly
- (b) Powerful
- (c) Consistent
- (d) Determined

Ans: (b)

7. The author talks about 'Unspoilt Nature'. In what way can Nature remain unspoilt?

- (a) If Nature is not allowed to interfere with people's day-to-day life.
- (b) By building cities with the system of organs like those of animals.
- (c) By allowing free access to parks and open spaces.
- (d) By allowing Nature to retain its primitive, undomesticated character.

Ans: (b)

8. According to the author, the function of a city is to:

- (a) Provide adequate community expression.
- (b) Make available centres of recreation and public gatherings.
- (c) Facilitate traffic and communication.
- (d) Raise the tone of life and make it more meaningful.

Ans: (d)

9. The opening sentence of the passage implies that:

- (a) The possibilities of living a decent life cannot be found in a city.

- (b) Only a city can provide the means to lead a full life.
- (c) Among other places, a city can also help man to lead a successful life.
- (d) A city provides better opportunities for good living than a village.

Ans: (b)

Quantitative Quantitative Aptitude **APTITUDE**

1. What is the probability of getting a number less than 4 when a die is rolled?

- A. 12
- B. 16
- C. 13
- D. 14

2. Ten years ago, P was half of Q's age. If the ratio of their present ages is 3:4:3, what will be the total of their present ages?

- A. 4545
- B. 4040
- C. 3535
- D. 30

3. What will be the day of the week 15th August, 2010?

- A. Thursday
- B. Sunday
- C. Monday
- D. Saturday

4. If the cost of x metres of wire is d rupees, then what is the cost of y metres of wire at the same rate?

- A. Rs. $(\frac{xd}{y})$
- B. Rs. xd
- C. Rs. $(\frac{yd}{x})$
- D. Rs. yd

5. $\log_5(0) = ?$

- A. None of these
- B. 5
- C. 0
- D. 1

6. Find the ratio in which rice at Rs. 7.20 a kg be mixed with rice at Rs. 5.70 a kg to produce a mixture worth Rs. 6.30 a kg.

- A. 4 : 3
- B. 3 : 4

C. 2 : 3

D. 3 : 2

7. A man takes 5 hours 45 min in walking to a certain place and riding back. He would have gained 2 hours by riding both ways. The time he would take to walk both ways is

A. 11 hrs

B. 8 hrs 45 min

C. 7 hrs 45 min

D. 9 hrs 20 min

8. A train is running at a speed of 40 km/hr and it crosses a post in 18 seconds. What is the length of the train?

A. 190 metres

B. 160 metres

C. 200 metres

D. 120 metres

9. How much time will it take for an amount of Rs. 900 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

A. 2 years

B. 3 years

C. 1 year

D. 4 years

10. A can run 224 metre in 28 seconds and B in 32 seconds. By what distance A beat B?

A. 36 metre

B. 24 metre

C. 32 metre

D. 28 metre

Multiple Choice Multiple Choice Questions Questions

1. Wrought iron contains carbon up to

- (a) 0.25%
- (b) 1.0%
- (c) 1.5%
- (d) 2%.

Ans: (a)

2. Pick up the polymineralic rock from the following:

- (a) Quartz sand

(b) Pure gypsum

(c) Magnesite

(d) Granite

Ans: (d)

3. Ultimate strength to cement is provided by

(a) Tricalcium silicate

(b) Di-calcium silicate

(c) Tri-calcium aluminate

(d) Tetra calcium alumino ferrite.

Ans: (b)

4. Bitumen felt

(a) is used as water proofing material

(b) is used as damp proofing material

(c) is made from bitumen and hessian fibres

(d) All the above.

Ans: (d)

5. Queen closer may be placed

(a) in header course

(b) in stretcher course

(c) in header course next to first brick

(d) in stretcher course next to first brick

Ans: (c)

6. The under surface of an arch, is called

(a) Soffit

(b) Intrados

(c) Haunch

(d) Back.

Ans: (a)

7. Black cotton soil is unsuitable for foundations because its

(a) bearing capacity is low

(b) permeability is uncertain

(c) particles are cohesive

(d) property to undergo a volumetric change due to variation of moisture content.

Ans: (d)

8. The concrete slump recommended for beams and slabs ; is

- (a) 25 to 50 mm
- (b) 25 to 75 mm.
- (c) 30 to 125 mm
- (d) 50 to 100 mm

Ans: (c)

9. To obtain cement dry powder, lime stones and shales or their slurry, is burnt in a rotary kiln at a temperature between

- (a) 1100° and 1200°C
- (b) 1200° and 1300°C
- (c) 1300° and 1400°C
- (d) 1400° and 1500°C

Ans: (d)

10. Hydrographic surveys deal with the mapping of

- (a) large water bodies
- (b) heavenly bodies
- (c) mountainous region

(d) canal system

Ans: (a)

11. Pick up the correct statement from the following :

- (a) the eyepiece plays no part in defining the line of sight
- (b) the diaphragm plays no part in defining the line of sight
- (c) the optical center of the objective plays no part in defining the line of sight
- (d) none of these.

Ans: (a)

12. In chain surveying tie lines are primarily provided

- (a) to check the accuracy of the survey
- (b) to take offsets for detail survey
- (c) to avoid long offsets from chain lines
- (d) to increase the number of chain lines.

Ans: (c)

Career Options & Job Updates

What is the scope of civil engineering in India?

Civil engineering has quite a beautiful scope in India. But remember, you will have to be patient. And I can explain why...!!

Civil engineering is a branch of engineering which deals with people, civilization of a country, their needs and basic facilities. So as long as there are humans and as long as we have natural phenomenon like earthquakes and tornadoes civil engineers will be required. Just take an example of a routine life of Mr. Sharma. He wakes up in the morning brushes his teeth, takes showers, has breakfast, goes to office, works over there, has lunch, again works, comes back to home, has fun with family, has lunch, watches TV and then goes to bed.

Now in above example, he wants water for his morning activities, it has been indicated that if people do not get morning water supply their whole day is disturbed. He needs public transportation or roads to travel everyday to anywhere. His kids should have a nearby school. He needs electricity which is generated by hydro-power or nuclear or thermal or solar or wind. To produce that electricity we need some giant or small scale structures, to transmit that electricity we need some poles located at certain distance. He should have food to eat, so we need good farming and irrigation systems. To have better irrigation we should have Canals and good water supply. To dispose of his waste he

should have better sewer system. And so on...

As per Chris Neary | August 23, 2011,

Would you like to make the world safer and cleaner? Civil engineers make sure people have safe places to live and work. They provide clean drinking water and find ways to reuse garbage, for example. Civil engineering has five specialties:

Environmental engineers remove contaminants from water, reduce non-hazardous solid waste volumes, eliminate pollutants from the air and develop groundwater supplies.

Geotechnical engineers develop projects below ground and determine ways to support structures on and in the ground. These engineers perfect mixtures for pavements and other structures by developing methods to stabilize soil conditions.

Materials engineers develop concrete and pavement systems for construction and soil stabilization methods.

Structural engineers face the challenge of designing structures that can withstand gusting winds, extreme temperatures, hurricanes, earthquakes, and other natural forces. They design structures for bridges, buildings, airplanes, and more.

Transportation engineers determine ways to meet the increasing travel needs of people, goods, and materials on land, air, and water.

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Recruitment of Engineers on regular basis

RITES Ltd., a Mini Ratna Central Public Sector Enterprise under the Ministry of Railways, Govt. of India is a premier multi-disciplinary consultancy organization in the fields of transport, infrastructure and related technologies.

RITES Ltd. is in urgent need of dynamic and hard working professionals as under:

VC No.	Post	No. of Vacancies				
		UR	OBC	SC	ST	Total
93/16	Deputy General Manager (Civil)	5	1	1	1	8

JOIN INDIAN ARMY
RECRUITING DIRECTORATE WEBSITE: www.joinindianarmy.nic.in
48th SHORT SERVICE COMMISSION (TECH) MEN AND
19th SHORT SERVICE COMMISSION (TECH) WOMEN COURSE (APR 2017)
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Discipline wise vacancies are as given below:-

(i) For 48 SSC(T) Men: Vacancies (150) (ii) For SSCW(T)-19 Women : Vacancies (20)

Engineering Streams	Equivalent Stream (AICTE Approved)	Vacancies	
		Men	Women
Civil	Civil Engg, Civil Engg (Structural Engg), Structural Engg	36	06

J. Kumar Infraprojects Ltd.
Leading Mumbai based infrastructure company is hiring candidates for Mumbai Metro Project
Walk in interviews on 27, 28 May, 3, 4, 10, 11 June 2016 from 10 a.m. to 6 p.m.

DESIGNATION	EXP	QUALIFICATION	PROFILE
Project Manager	Total Exp. 15 + Years for BE / Diploma 20 Yrs. 10 Years as Project Incharge in Metro Projects	BE / Diploma (Civil)	Exp. In Precast Segmental, U Girder Pile Foundation etc. Should have worked with Large Infrastructure Company.
Dy. Project Manager	Total Exp. 10 + Years for BE / Diploma 15 Years as Dy. Project Manager in Metro Projects	BE / Diploma (Civil)	Should have worked as Dy. Project Manager for Elevated Metro Project with large infrastructure Company.
Dy. Project Manager - Launching	Total Exp. 10 + Years for BE / Diploma 15 Years	BE / Diploma (Civil)	Minimum 10 Yrs. in the field of Launching / Crane working out of which Minimum 3 Yrs. should be launching work.
Dy. Manager - Casting Yard	Total Exp. 10 + Years for BE / Diploma 15 Years 3 to 5 Years as Casting Yard Incharge	BE / Diploma (Civil)	Should have Experience of Setting up Casting Yard & Casting of U Girder / Segments for Elevated Metro Projects.
Quality Assurance Engineer	Total Exp. 10 + Years for BE / Diploma 15 Years	BE / Diploma (Civil)	Minimum 10 Yrs. in the field of Quality Assurance out of which Minimum 7 Yrs. in QA Field and at least two years as Incharge for Metro Project.
Interface Manager	Total Exp. 10 Years for BE - Civil & 15 Years for Diploma	BE - Civil / Elec / Mech.	Should have worked for Elevated Metro Project as Interface Manager.
Planning Engineer	Total Exp. 10 Years & above	BE (Civil)	Should have Minimum Exp. of 3 years in Planning of Elevated Metro, Should be proficient in Primavera & MS Project.
Geo. Tech. Engineer	Total Exp. 5 Years & above	BE (Civil)	Should have worked for Elevated Metro Project as Geotechnical Engineer with minimum 3 Yrs. for Similar work.
Environmental Specialist	Total Exp. 5 Years & above	Phd. / Msc. in Environmental Science	Should have worked for Metro Projects as an Environmental specialist.
Safety Manager	Total Exp. 10 Years & above	Degree / Diploma in Construction Safety	Exp. in Metro Projects as Safety Manager Should have worked with large infrastructure companies.
Electrical / Mechanical Engineer	Total Exp. 5 Years & above	BE / Diploma Elec / Mech.	Should have experience of Mechanical / Electrical works for Elevated Metro / Bridge Projects.
Civil Engineer	Total Exp. 5 Years & above	BE / Diploma (Civil)	Should have Minimum 5 Yrs. experience for Degree & 8 Yrs. for Diploma for Elevated Metro / Bridge Projects.

Interviews will be held at 14, Andheri Industrial Estate, Veera Dasai Road, Andheri West, Mumbai 400 053
Contact : Mr. Deepak - 075068 59779 / 091677 71807
Interested candidate who are not in a position to attend interviews can apply on jobs@jkumar.com

IRCON Announces Recruitment of Executive Trainees Through GATE 2015 / GATE 2016!

Position	Eligibility Criteria	Vacancies
Executive Trainee (Civil)	Full time regular Bachelor's Degree in Civil Engineering from recognized Indian University/Institute approved by AICTE with minimum 60% marks or equivalent grade**	Total Posts: 30 (UR: 16, SC-4, ST-2, OBC- 8)



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