

CURRENT AFFAIRS

1ST DEC. TO 10TH DEC. 2016

OPEC ACCORD FOR OUTPUT CUT

- The accord announced by the Organization of the Petroleum Exporting Countries in Vienna conference is aimed at reducing a global supply glut that has kept prices painfully low.
- It represents a dramatic reversal from OPEC's Saudi-led strategy, introduced in 2014, of flooding the market to pressure rivals, in particular US shale oil producers.
- The reduction by OPEC will be “1.2 million barrels per day, to bring its ceiling to 32.5 million barrels per day.”
- It is the first joint output cut announced by OPEC since 2008 after tough talks in Vienna, sending oil prices soaring.
- OPEC said it would exempt Iran, Libya and Nigeria from cuts as their output has been crimped by unrest and sanctions.

How low oil prices have impacted OPEC members:

OPEC members' public finances have been shot to bits by two years of rock-bottom prices.

- It has exacerbated an already desperate situation in Venezuela, where Human Rights Watch says shortages of basics are so bad that there is a "profound humanitarian crisis".
- Even fabulously wealthy Saudi Arabia has slashed salaries and spending and is on course for a budget deficit of \$87 billion in 2016, and owes foreign firms billions in unpaid bills.
- The low crude price has also hit investment in oil facilities, raising the prospect of oil shortages further down the line.

OPEC:

- The Organization of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental Organization, created at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela.
- The five Founding Members were later joined by nine other Members: Qatar; Indonesia (suspended from the organisation in November 2016); Libya; United Arab Emirates; Algeria; Nigeria ; Ecuador; Angola and Gabon.
- Headquarters: Vienna, Austria
- OPEC accounts for a third of global oil production.

SUPREME COURT'S ORDER ON NATIONAL ANTHEM

The Supreme Court ordered all cinema halls across the country to play the national anthem before the screening of films and that all present must "stand up in respect" till the anthem ended.

Prevention of Insults to National Honour Act, 1971:

- The Act, which addresses insults to the Constitution, the national flag and the national anthem, has its genesis in Article 51 (a) of the Constitution, which enjoins a duty on every citizen of India to abide by the Constitution and respect its ideals and institutions, the national flag and the national anthem.
- The object of the Act is to provide for punishment for the cases involving deliberate disrespect to the national symbols.
- The Act states that whoever intentionally prevents the singing of the national anthem or causes disturbances to any assembly engaged in such singing, shall be punished with imprisonment for a term, which may extend to three years, or with fine, or with both.

FAST APERTURE SPHERICAL TELESCOPE OR FAST

- It is the world's largest telescope with a whopping 1,640 feet (500 meter) wide dish, the size of 30 football fields.
- Located in China's Guizhou province
- Its field of vision is almost twice as big as the Arecibo telescope in Puerto Rico that has been the world's biggest single aperture telescope for the past 53 years.
- Russia's RATAN-600 telescope is larger than FAST by diameter with panels arranged in a 576 meter wide ring but it's not one single dish and its collection area is much smaller than FAST and Arecibo.
- Because of FAST's incredible sensitivity, it will be able to chart the hydrogen distribution even in far flung galaxies.
- Its sensitivity will be capable of detecting exoplanets in ways that other telescopes cannot.
- FAST will also enable scientists to detect many more pulsars- dense, rotating stars that act as cosmic clocks. This could provide scientists with the capability to detect gravitational waves - ripples in space-time - that shed light on how galaxies evolved.
- Its potential to discover an alien civilization will be five to 10 (times) that of current equipment, as it can see farther and darker planets.
- FAST may help explain the origin of the universe and the structure of the cosmos, but it's unable to project the trajectories of comets or asteroids.
- The telescope requires a radio silence within a five-km radius, which has resulted in the relocation of more than 8,000 people.

UNESCO: INTANGIBLE CULTURAL HERITAGE

In news:

- UNESCO included Indian ancient practice of yoga in its Representative List of Intangible Cultural Heritage of Humanity. The decision was taken in Addis Ababa, Ethiopia, during the 11th session of the intergovernmental committee for the Safeguarding of the Intangible Cultural Heritage.
- Yoga is the 13th intangible cultural heritage to be listed from India so far. The others include the Chhau dance, the Buddhist chanting of Ladakh and Ramlila.

Background:

The General Conference of UNESCO adopted in 2003, at its 32nd session, the Convention for the Safeguarding of the Intangible Cultural Heritage.

The World Heritage Committee meets annually to evaluate nominations proposed by States Parties to the 2003 Convention and decide whether or not to inscribe those cultural practices and expressions of intangible heritage on the Convention's Lists.

List of Intangible Cultural Heritage in Need of Urgent Safeguarding (2016):

- Bisalhaes black pottery manufacturing process (Portugal): A black pottery manufacturing process from the Portuguese village of Bisalhaes.
- Chapei Dang Veng (Cambodia)
- Cossack's songs of Dnipropetrovsk Region (Ukraine): The songs tell stories about the tragedy of war and personal relationships of Cossack soldiers.
- Ma'di bowl lyre music and dance (Uganda): Uganda's Ma'di Bowl Lyre music and dance is one of the oldest cultural practices of the Madi people of Uganda. It is still performed at some weddings and to celebrate harvests.

Representative List of the Intangible Cultural Heritage of Humanity (2016):

- Yoga (India)
- Beer culture in Belgium (Belgium): Belgium produces some 1,500 types of beer.
- Bhojpuri folk songs in Mauritius, Geet-Gawai (Mauritius)
- Rumba dance (Cuba): rumba dance sprang from poor communities.

KIGALI MEET

In news: The government gave its ex-post facto approval to the India's position at recent negotiations at Kigali, Rwanda over the issue of phasing down the climate-damaging refrigerants hydrofluorocarbons (HFCs).

Background:

- In the Kigali meet, India had successfully negotiated the baseline years and freeze year for phasing down the use of HFCs.
- The country's position is aimed at allowing sufficient room for growth of its domestic sectors using refrigerants.
- Freezing year is the year when use of HFCs will peak before being scaled down while the baseline years are the years for which the average production\consumption quantity of HFCs is taken as the upper limit (serves as a level).
- It was agreed at Kigali that there would be two set of baselines years for developing countries. India along with nine other countries will have baseline years of 2024-26 while other developing countries including China (largest producer of HFCs in the world), Brazil and South Africa will have 2020-22 baseline. The developed countries, led by the US, will on the other hand reduce use of HFCs over a 2011-13 baseline.
- The freeze year for India will be 2028, with a condition that there will be a technology review in 2024/2025 and, if the growth in the sectors using refrigerants is above certain agreed threshold, India can defer its freeze up to 2030. The freeze year of China, Brazil, South Africa and others will be 2024.
- As per the decisions taken in Kigali, India will complete its phase down in four steps with cumulative reduction of 10% in 2032, 20% in 2037, 30% in 2042 and 85% in 2047. On the other hand, the developed countries including the US, Japan and west European nation will reduce production and consumption of HFCs by 70% in 2029 and 85% by 2036.

NATIONAL DEFENCE AUTHORISATION ACT (NDAA) 2017

- The National Defence Authorisation Act (NDAA) 2017 scheduled to be passed by the U.S Congress seeks executive action to recognise India's status as a major defence partner of the United States, is expected to enhance India-U.S defence ties.
- The draft bill said technology transfer to India and defence cooperation must be "consistent with United States conventional arms transfer policy."

- It mandates to “designate an individual within the executive branch who has experience in defense acquisition and technology” to ensure the success of bilateral defence ties and to help resolve remaining issues impeding them.

MERGER OF BHARATIYA MAHILA BANK LTD (BMBL) WITH SBI

In news: The Competition Commission of India (CCI) has approved the merger of Bharatiya Mahila Bank with the country's largest lender State Bank of India.

Background:

- In August, the SBI board cleared the merger of Bharatiya Mahila Bank Ltd (BMBL) and that of five associate lenders with itself.
- As per the deal, the combination is in the form of an amalgamation whereby the business of BMBL, including its assets and liabilities, will be acquired by the SBI.
- While the SBI has global presence, BMBL is a nascent bank set up in November 2013.

Competition Commission of India:

- The Competition Commission of India (CCI) has been established by the Central Government Act with effect from 14th October 2003.
- CCI consists of a Chairperson and 6 Members appointed by the Central Government.
- It is the duty of the Commission to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.

FIXED DRUG COMBINATIONS (FDCS)

In news: The high court in Delhi quashed a central government order banning 344 fixed dose combinations (FDCs) of drugs.

What are Fixed Drug Combinations?

An FDC is a 'cocktail' drug. These are drugs with two or more active ingredients in a single dosage, acceptable only when the drugs so combined have a therapeutic advantage. The concept is widely accepted in global markets, due to less cost and patient convenience.

Background:

The Centre issued the ban notification in March, pursuant to the **Kokate committee report** under Section 26A of the Drugs and Cosmetics Act.

- The ban had been issued after the committee's observations that the specified FDCs lacked therapeutic justification. This impacted several high-selling brands such as Corex, Phensedyl and Vicks Action 500 Extra.

- Most large pharmaceutical manufacturers, including Pfizer, Abbott, GlaxoSmithKline and Cipla, immediately appealed to the high court in Delhi.
- Petitioners' Argument: The petitioners drew the court's attention to relevant provisions of the Drugs and Cosmetics Act requiring prior consultations by the government. And, argued the same conditions applied to notifications under Section 26A, under which the ban was issued.
- Government's argument: The government attempted to highlight its authority to conduct periodic testing exercises and also withdraw previously issued approvals under concerns of public interest.
- Court's Decision:
 - Rejecting the Centre's arguments, the verdict quashed the March notification and agreed with the petitioners on the lack of mandatory consultations with the Drug Testing Advisory Board and the Drug Consultative Committee, statutory requirements under Section 26A.
 - As a result, the Centre's decision without such consultations has been held to be void. The order also said that Kokate committee report could not substitute the functions of the Drugs Controller. And, there had been lack of discussion on the panel's report. This further vitiated the breach, though the Centre might have acted for the public good.

HIV SELF-TESTING

World Health Organisation has released guidelines on HIV self-testing, thus clearing a major obstacle in improving access to diagnosis.

What is HIV Self-testing?

- The WHO-approved OraQuick HIV self-testing is based on HIV antibodies present in oral and blood samples.
- The test can detect antibodies developed within three months of getting infected.
- It is a screening test, and a positive result should be reconfirmed through a blood-based test.
- But there are challenges in terms of counselling and sensitivity, with the accuracy of the tests pegged at around 93 per cent.
- Unlike the conventional method of getting tested at Integrated Counselling and Testing Centres (ICTCs), people self-testing should be more aware about the possibility of false negatives. But the risk of not getting tested far outweighs the limitations posed by self-testing.
- Twenty-three countries have in place policies that support HIV self-testing. It is time India adopted it quickly to enable more people to test themselves and help break the transmission cycle.

Need:

- Though much progress has been achieved in India in making HIV testing accessible and free of cost, many infected persons remain unaware of their status.
- Despite greater awareness, people with HIV still face stigma and discrimination. As a result, getting everyone at risk of HIV infection tested has been a challenge.

- Across the world, nearly 40 per cent of people with HIV are unaware of their infection and run the risk of unknowingly transmitting it.

INDIA'S 1ST PRIVATE MISSION TO MOON

- Team Indus, a Bengaluru-based private aerospace company, is sending a spacecraft to the moon on December 28, 2017, aboard an Indian Space Research Organisation (ISRO) rocket (PSLV).

Team Indus:

- Team Indus will be the first private entity to exclusively use India's main rocket, the Polar Satellite Launch Vehicle.
- Except for the launch vehicle, all of the technology that will power the rover and lander is developed in-house by Team Indus.
- It is one of the four international teams and the only one from India in the running for the Google Lunar XPRIZE.
- Two U.S.-based companies, Moon Express and Synergy Moon and one Israeli company SPACE 1 L have so far announced agreements with space-launch-vehicle companies such as SpaceX. Other than technical requirements, the prize rules also require that companies be 90% privately funded.

About the mission:

- After completing a rotation around the earth, spacecraft will ideally land in 21 days at Mare Imbrium, a region in the North-Western hemisphere of the Moon
- The mission's aim is to land this spacecraft on the moon, have it travel at least 500 metres and beam high- definition video, images and data back to the earth.

Google Lunar XPrize :

- A \$30 million (approx. Rs. 200 crore) competition, to encourage private companies to launch space missions.
- It was announced in 2007 following the success of the Ansari X Prize, which offered \$10 million to the first non-governmental organization to launch a reusable manned spacecraft twice in two weeks.
- The Ansari prize was won by the company Scaled Composites, with a vehicle that would become the basis for Virgin Galactic's still unrealized space tourism hopes.

'VITTIYA SAKSHARATA ABHIYAN'

Launched by: Human Resource Development Ministry

- To encourage, create awareness and motivate all people around them to use a digitally enabled cashless economic system for transfer of fund.

- The purpose of the 'Vitiya Saksharta Abhiyan' is to actively engage the youth/ students of Higher Education Institutions to encourage and motivate all payers and payees to use a digitally enabled cashless economic system for transfer of funds.
- HRD Ministry also launched a webpage where students can register themselves, give continuous feedback and suggestions on the initiative as well as upload the progress of their work.

WORLD'S FIRST WATER WAVE LASER

- Scientists in Israel have developed the world's first "water-wave laser," demonstrating that light and water waves can combine to generate laser radiation.
- Laser radiation is produced when electrons in atoms are excited by an external source, in this case, a combination of frequencies from light and water oscillations.
- Until now, scientists thought the frequency difference between water waves and light waves would diminish the energy transfer necessary to generate laser emissions.
- Researchers at the Technion-Israel Institute of Technology skirted the drawback using an optical fiber to deliver high-frequency light waves through a tiny droplet of octane and water.
- The light and water waves intersect more than a million times inside the droplet, producing the energy necessary to trigger a water-wave laser.
- Ultimately, the technology could be used to create tiny sensors for the study of cell biology or to test new drugs.
- For now, scientists can use the laser to study light-fluid interactions at nanoscale.

HEALTH EMERGENCY

In news: The Supreme Court has ordered the government to urgently notify a graded response action plan to combat a new and heightened level of air pollution called 'health emergency' in Delhi and the National Capital Region.

When is Health Emergency declared:

- This almost-lethal level of pollution is reached when the air quality worsens beyond the 'severe' category. As of now, air pollution is graded from 'moderate to poor', 'very poor', and lastly, 'severe'.
- While the worst category according to air quality index is 'severe' at 250 microgram per cubic metre at PM2.5 and 401 microgram per cubic metre at PM10, the "health emergency" grade demands more stringent action.
- The threshold for this category (health emergency) will be 300 microgram per cubic metre for PM2.5 and 500 microgram per cubic metre for PM10, which are five times the standard.

HEART OF ASIA- ISTANBUL PROCESS CONFERENCE

- The sixth edition of ‘Heart of Asia- Istanbul Process of Afghanistan’ conference, an annual regional gathering of Asian and other countries was held in Amritsar, Punjab (India).
- The theme of this edition of the conference was “Addressing Challenges, Achieving Prosperity”.
- The issues discussed in the conference were
 - Countering terrorism to create stability in Afghanistan,
 - Providing Afghanistan connectivity to strengthen economic activities and the development which is essential for its progress.

Amritsar Declaration:

The Conference concluded with adoption of Amritsar Declaration with its prime focus on terrorism.

- Expressed concern over violence caused in Afghanistan and region by terrorists groups like Al Qaeda, Lashkar-e-Toiba, Daesh (ISIS) and Jaish-e-Mohammed. It also mentions Haqqani Network.
- It stressed on Early finalisation of the draft comprehensive convention on international terrorism (CCIT).
- Specific initiatives for regional connectivity including Iran-India-Afghanistan trilateral agreement on developing Chabahar were acknowledged.

About Heart of Asia-Istanbul Process:

- The Heart of Asia-Istanbul Process (HoA) was founded in 2011 in Istanbul, Turkey.
- The Heart of Asia provides a platform for sincere and results-oriented regional cooperation by placing Afghanistan at its center, in recognition of the fact that a secure and stable Afghanistan is vital to the prosperity of the Heart of Asia region.
- The Heart of Asia is comprised of 14 participating countries, 17 supporting countries, and 12 supporting regional and international organizations.
- 14 participating countries: Russia, China, India, Pakistan, Afghanistan, Iran, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Saudi Arabia, UAE, Azerbaijan and Turkey.

PUBLIC FINANCIAL MANAGEMENT SYSTEM

The Public Financial Management System (PFMS) is a web-based application for payment, accounting and reconciliation of Government transactions and integrates various existing standalone systems.

- The PFMS platform compiles, collates and makes available in real-time, information regarding all government schemes, and, significantly, provides the government real-time information on resource availability and utilisation across schemes.
- In addition, the platform will allow government expenditure to adopt a Just-in- Time (JIT) approach, with payments made only when they are needed.

- Integration with GST Network: Regardless of whether the Goods and Services Tax is implemented from April 2017 or not, the PFMS would be ready and will be integrated with the IT network of the GST by then.

Advantages of PFMS:

- The Centre stands to save a significant amount on interest costs when the Public Financial Management System is implemented.
- The electronic fund tracking mechanism will allow the government to monitor and access the more than Rs.1 lakh crore of idle funds lying with it under various heads.
- Now, if the government can access these funds through PFMS, it need not borrow that amount. At 7 per cent interest, that works out to a saving in interest costs of at least Rs.7,000 crore.
- Projects will not need a budget at the beginning of the year, which then has no transparency of how it is used and how much is left. They will be paid for only when payment is needed.

'SUDHARMA'

- It is India's sole surviving Sanskrit daily.
- It has been published for 47 years and even has an e-paper, but its fortunes are declining
- Sudharma, with its mix of political, civic, sports and culture coverage is waging a struggle to stay afloat as costs rise and advertisement revenue shrinks.
- Reaching 3,000 print subscribers by post, the two-pager also has a ten-year old electronic paper version that reaches 1.5 lakh readers internationally, but fetches no revenues.

URGYEN TRINLEY DORJE: THE 17TH GYALWANG KARMAPA

In news: The government allowed Urgyen Trinley Dorje, the 17th Gyalwang Karmapa, to address a public gathering at Mon in Arunachal Pradesh recently.

It comes soon after the U.S Ambassador to India Richard Verma visited Tawang, which China claims as a "disputed" territory despite China's objections.

Background:

- The border dispute between India and China covers the 3,488-km long Line of Actual Control (LAC).
- India asserts that the dispute covered Aksai Chin area which was occupied by China during the 1962 war.
- Arunachal Pradesh is claimed by China as a part of southern Tibet.
- India's extension of hospitality to Tibetan leaders, especially the Dalai Lama and Karmapa has come up as a repeated irritant in relations between New Delhi and Beijing.

Significance of the visit:

- The last visit to Arunachal Pradesh by a Karmapa was about 900 years ago, by the 3rd Karmapa, Rangjung Dorje, who died in 1339.
- Religiously and culturally, Urgyen Trinley's visit is significant as he is one of the two major claimants to the seat of the Karmapa, the head of the Karma Kagyu school of Tibetan Buddhism.
- A majority of the Karma Kagyu monasteries and leaders have already accepted him as the Karmapa. However, a significant minority recognises Trinley Thaye Dorje instead.

Tibetan Buddhism:

Buddhism first reached Tibet in the 7th century. By the 8th century teachers such as Padmasambhava were traveling to Tibet to teach the dharma. In time Tibetans developed their own perspectives and approaches to the Buddhist path.

INDIA –QATAR

In news: Qatari PM Sheikh Abdullah bin Nasser bin Khalifa Al Thani visited India

- energy cooperation:
 - Both stressed on going beyond the buyer-seller relationship to include Joint Ventures, Joint Research and Development and Joint Exploration.
 - Qatar is also the largest supplier of LNG to India, accounting for 66 per cent of the total imports in 2015-16.
- Qatari leader invited India's participation in infrastructure and investment opportunities coming up in the wake of Qatar hosting the FIFA World Cup in 2022.
- India called for a long-term arrangement with Qatar for the supply of urea as India imports eight million tonnes of urea per year to meet its needs.
- Indians form the largest expatriate community in Qatar and their positive contribution in the progress and development of their host country is well recognised. There are over 630,000 expatriate Indians in Qatar.

MARKET STABILIZATION SCHEME (MSS)

In news: Reserve Bank of India (RBI) has revised the ceiling on issuance of securities under the market stabilization scheme (MSS) to Rs6 trillion, from the previous limit of Rs30,000 crore for financial year 2016-17.

Background:

- MSS bonds are typically issued by the central bank to manage liquidity operations when intervening in the foreign exchange market.
- When the RBI buys dollars, it releases rupee liquidity in the system, which can then be mopped up by sale of MSS bonds.

Description of the Scheme:

- The MSS scheme was launched in 2004 to strengthen the RBI's ability to conduct exchange rate and monetary management.
- The bills/bonds issued under MSS have all the attributes of the existing treasury bills and dated securities.
- These securities will be issued by way of auctions to be conducted by the RBI.
- The timing of issuance, amount and tenure of such securities will be decided by the RBI.
- Unlike regular bonds, these are not issued to meet the government's expenditure and the funds raised are kept in a separate cash account. As a result, their issuance will have a negligible impact on the fiscal deficit of the government.

BITCOINS

In news: For two reasons-

- The team behind bitcoin company, GBMiners, has started South Asia's first Blockchain incubator called Satoshi Studios. Named after Satoshi Nakamoto, the mysterious creator of bitcoin, the incubator is inviting applications from entrepreneurs working in South East Asia region with a vision to build New Delhi as the blockchain knowledge hub of Southeast Asia.
- Unocoin, an Indian bitcoin start-up, has unveiled a new app that will allow consumers to buy, sell, send, receive and store bitcoins, all in one place, from any remote device. This includes 24/7 access to real-time bitcoin market prices and instantaneous trading transactions.

Blockchain and Bitcoins:

- Blockchain is a kind of distributed database that keeps a permanent and tamper-proof ledger of transaction data. It is commonly associated with bitcoin which is a digital currency that is not supported by any country's government or central bank.
- Also known as crypto-currency, bitcoin can be traded for services or goods with sellers who accept bitcoins as payment.

INDIA-AFGHAN AIR CARGO LINK

In news:

India is likely to finalize an air cargo service pact with Afghanistan to boost bilateral trade and gain leverage in the war-ravaged country as Pakistan continues to deny transit link for India-Afghan trade through its territory.

Likely Benefits:

- The cargo service will aim to improve landlocked Afghanistan's connectivity to key markets abroad and
- boost the growth prospects of its fruit and carpet industries while it battles a deadly Taliban insurgency

- Reduce dependence on Pakistan: Afghanistan depends on the Pakistani port of Karachi for its foreign trade. It is allowed to send a limited amount of goods overland through Pakistan into India, but imports from India are not allowed along this route.
- The potential for trade between two countries was far greater than allowed by land and so the two countries had decided to use the air route.

Background:

- India and Afghanistan have been exploring various connectivity projects for greater two-way trade.
- Earlier, India, Iran and Afghanistan had signed an agreement to set up a trade and transport corridor with **Chabahar in Iran** as the hub.
- The sea-land route of Chabahar Port is designed to bypass Pakistan and the project is seen as India's effort to counter China's plan to develop Gwadar port in Pakistan.

ARCHAEOLOGICAL DISCOVERY IN LADAKH

- An ancient camping site used by pre-historic man and datable to circa 8500 BCE, has been found at an altitude of about 4,200 metres near Saser La in the Nubra Valley, Ladakh. Saser La leads to the Karakoram Pass.
- A camping site is a place where hunter-gatherers stayed temporarily before they moved on to another place. “A camping site” is “a seasonal settlement, not a permanent settlement.”
- Charcoal pieces from hearth activity and remains of bones associated with it were found at the site.
- It has been called the earliest camping site in Ladakh. Such an early antiquity on the basis of a scientific date is the very first for that region

INDIA INTERNATIONAL SCIENCE FESTIVAL (IISF-2016)

- The largest festival of science in this country with its focus on “Science for the Masses”.
- Undertaken by Ministry of Science & Technology and Earth Sciences
- India International Science Festival (IISF) as a major science event was conceptualized last year which was organized at IIT, Delhi. It also won the distinction of Guinness Book of World Record for successful conduct of Largest Practical Science Lesson by 2000 school students.

NEW METHOD FOR PRODUCING HIGH QUALITY NUCLEAR FUEL

In news: Scientists in Russia have developed a unique, low-cost method for producing high-quality nuclear fuel using electricity.

The main type of fuel for nuclear power reactors is the uranium oxide pellet composition.

It is produced from a powder by granulation, pressing, and sintering with the subsequent control of the quality and size of the pellets. The new technology reduces the number of production stages without increasing the cost.

What is the new technology?

- The researchers have proposed an alternative mode of production, which forms the basis of powder metallurgy: electric pulse sintering under pressure.
- The key idea of the method is heating by an electric current passing through the mold with the powder placed in.
- Under these circumstances, the uranium oxide fuel is simultaneously influenced by the powerful pulse discharge and mechanical pressure.

Advantages of the new method:

- increase in production rate
- product quality improvement
- the fuel pellets may be produced even from uranium dioxide powder, which is not suitable for the conventional technology.
- the proposed method can be adapted in industrial applications thanks to the low cost of one unit of product - up to USD 10.
- With its help it is possible to obtain high-quality samples of fuel, including that for fast breeder reactors.

AUROVILLE FOUNDATION

In news: Dr Karan Singh, an eminent scholar and a Rajya Sabha Member has been re-nominated as the Chairperson of the Governing Board of Auroville Foundation.

Background:

- Auroville (City of Dawn) is an experimental township in the state of Tamil Nadu, with some parts in the Union Territory of Puducherry.
- The formal inauguration of the city happened in 1968 and was attended by representatives of 124 nations and all the states of India.
- Today Auroville is recognized as International living experiment in human unity, endorsed by the UNESCO and supported by the Government of India.
- It is also a centre for applied research in environmentally sustainable living practices, experimenting new system of education, social research and cultural activities.

Auroville Foundation:

- The Government of India notified the constitution of Auroville Foundation as a Statutory Body in 1991 as per the Auroville Foundation Act, 1988.
- The Auroville Foundation, headed by a chairman, is an autonomous body under the Ministry of Human Resource Development.

ABDUS SALAM

In news: Pakistan govt. had given approval for the National Centre for Physics at the Quaid-i-Azam University in Islamabad, the capital, to be renamed after Salam.

- Salam, the first Muslim to win the prize for science, was a member of the Ahmadi sect, which is considered heretical by law in Pakistan, denounced by Muslim leaders and targeted by violent extremists.
- Salam shared the 1979 Nobel Prize in Physics with Sheldon Glashow and Steven Weinberg for helping to pave the way to the discovery of the “God particle,” one of science's greatest achievements in the last 100 years.
- However, under pressure from right-wing clerics and students, Salam was banned from lecturing at public universities during his lifetime, and even after winning the Nobel.

ENVIRONMENTAL ACTIVIST KEHKASHAN BASU WINS CHILDREN’S PEACE PRIZE

Ms. Basu is being honoured for the work done by her child-run organisation Green Hope, based in the United Arab Emirates, which now has more than 1,000 volunteers in 10 countries around the world.

- The ambitious teen founded Green Hope at the age of 12 and within four years managed several successful environmental projects, including planting 5,000 trees in Colombia, France, Mexico, Nepal, Oman and the United States.
- Apart from planting trees, Green Hope also focuses on activities such as cleaning up mangrove swamps around the UAE, in order to draw special attention to the threats facing fragile coastal forests.
- Past winners include Pakistani education campaigner Malala Yousafzai and the prize's first recipient, Nkosi Johnson, a South African boy who shone a light on the plight of children with HIV/AIDS.

International Children’s Peace Prize:

- The International Children’s Peace Prize is an initiative of the Dutch KidsRights Foundation, and
- It is awarded annually to a child, anywhere in the world, for his or her dedication to children’s rights.
- The prize was launched during the 2005 Nobel Peace Laureates’ Summit chaired by Mikhail Gorbachev. Since then, the prize has been presented every year by a Nobel Peace Laureate.
- It includes a 100,000 euro (\$106,000) investment for projects in the winner's home country.

MERCOSUR SUSPENDS VENEZUELA

- The South American economic bloc's founding members-Brazil, Argentina, Paraguay and Uruguay made the decision after concluding Venezuela had not incorporated key rules on trade and human rights into national law.
- Venezuela, which joined the bloc in 2012, has argued that some accords conflict with its domestic legislation. Venezuela has refused to recognise the suspension.

Mercosur:

- Mercosur, created in 1991, is a common market established based on Treaty of Asuncion.
- Associate members: Bolivia, Chile, Colombia, Ecuador, Guyana, Peru, and Surinam. These members receive tariff reductions but do not enjoy full voting rights or complete access to the markets of Mercosur's full members.
- The political and economic crisis in Venezuela has revealed fractures within the group.

ARMY'S FIRST MOTORISED TRANSPORT (MT) HERITAGE PARK

- The park, a first of its kind resting place for the Army's most popular transport vehicles inaugurated in Bengaluru. The idea is based on a similar museum in England.
- Army is tracking down decommissioned vehicles that it had once used through its vibrant history. The aim is to curate jeeps, trucks, among other vehicles.

HELEN MARTEN WINS 2016 TURNER PRIZE

Helen Marten has been named the winner of the 2016 Turner prize. It comes after she won the £30,000 Hepworth Prize for Sculpture.

Turner Prize:

£25,000 prize was set up in 1984. It has become one of the best-known visual arts prizes. The prestigious prize is awarded to a British artist, under the age of 50, considered to have put on the best exhibition of the past year.

Each year, four artists are shortlisted, and the prize is awarded for an outstanding exhibition or other presentation in the preceding year.

JAGDISH SINGH KHEHAR: NEW CJI

Chief Justice of India Tirath Singh Thakur Tuesday recommended the name of seniormost Supreme Court Judge Jagdish Singh Khehar to be appointed CJI on his retirement.

He will be the first Sikh CJI of the country. His term will end on August 28, 2017. He was elevated as a judge in the top court in September, 2011.

**TATA INSTITUTE OF FUNDAMENTAL RESEARCH (TIFR) DISCOVERY CHALLENGES
THEORY OF SUPERCONDUCTIVITY**

Researchers at the Tata Institute of Fundamental Research (TIFR), Mumbai, have made a landmark discovery that challenges the conventional understanding of superconductivity by discovering semi-conductivity in bismuth at around -273 C° .

- The team has discovered bismuth semi-metal in bulk form becoming a superconductor when the temperature is lowered to 530 microKelvin (about -273 degree C), which is three orders of magnitude higher than the theoretical prediction. (By BCS theory).
- The Bardeen-Cooper-Schrieffer (BCS) theory [which explains superconductivity in most low T_c superconductors] cannot explain the superconductivity seen in bismuth.
- BCS theory applied to bismuth gives a superconducting transition temperature of the order of nanokelvins, much less than the 0.5 milli-kelvin seen in the work of the TIFR group.
- As a result, physicists will now have to find new explanations and rework a four-decade-old Nobel-Prize-winning theory (1972).
- This discovery provides an alternative path for discovering new superconducting materials which are very different from the conventional superconductors.

What are Superconductors?

- These are materials that conduct electricity with no resistance whatsoever. If an electric current enters a superconducting wire at one end, it will emerge out of the other without any loss.
- Perhaps the most well known super conductor is a compound called yttrium barium copper oxide , which offers zero resistance to the flow of current when cooled to 90 kelvin (-183.15° C).

What is BCS Theory?

To be able to conduct electricity, the atoms of a metal must have some mobile electrons that can move throughout the metal instead of being trapped around the atoms. In superconducting metals that have been cooled to low temperatures, these electrons overcome the repulsion due to their 'like' charges, come together, and form pairs known as Cooper pairs. The sea of electron-pairs around the metal then flow as one like a fluid, and refuse to be jolted out of their reverie by vibrating atoms unless the metal is warmed up beyond a threshold temperature. This explanation is called the Bardeen-Cooper-Schrieffer (BCS) theory.

How is Bismuth different?

- Bismuth has unusual phenomenon — while metallic superconductors have one mobile electron per atom, bismuth has only one mobile electron per 100,000 atoms. Since carrier density is so small, people did not believe that bismuth will superconduct.
- Also, bismuth's electronic energy (Fermi energy) is comparable to the lattice (phonon) energy. So the conventional BCS theory and its extensions which assume that Fermi energy is two to three orders of magnitude higher than phonon energy is not valid in bismuth.

BRICS NATIONS VOW TO AUTOMATIC SHARING OF TAX INFORMATION

In news: Brazil, Russia, India, China and South Africa (BRICS), have pledged to share tax information automatically and adopt global standards on tax transparency to check cross border tax evasion.

- The five countries pledged support to increase their tax administrations' capacity and implement the Organisation for Economic Co-operation and Development (OECD)/G20 standard on Automatic Exchange of Information (AEOI).
- They also extended their continued support to all international initiatives towards reaching a globally fair and universally transparent tax system.
- It will help in preventing cross-border tax evasion
- automatic exchange is expected to begin by 2018

Base erosion and profit shifting (BEPS)

It refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations.

The **OECD/G20 BEPS** Project provides governments with solutions for modernising international tax rules. It provides them with measures for closing gaps in existing international rules that allow corporate profits to artificially shift to low or no tax environments, where little or no economic activity takes place.

RESOURCESAT-2A REMOTE SENSING SATELLITE

- In its thirty eighth flight (PSLV-C36), ISRO's Polar Satellite Launch Vehicle successfully launched the 1,235 kg RESOURCESAT-2A Satellite from the Satish Dhawan Space Centre SHAR, Sriharikota.
- This is the thirty seventh consecutively successful mission of PSLV.
- The vehicle achieved a polar Sun Synchronous Orbit of 824 km height inclined at an angle of 98.725 degree to the equator (very close to the intended orbit).
- After separation from the PSLV 4th stage, the two solar arrays of RESOURCESAT-2A deployed automatically and ISRO's Telemetry, Tracking and Command Network (ISTRAC) at Bangalore took over the control of the satellite

- Like its predecessors RESOURCESAT-1 and 2, RESOURCESAT-2A has a unique 3-Tier imaging system with Advanced Wide Field Sensor (AWiFS), Linear Imaging Self Scanner-3 (LISS-3) and Linear Imaging Self Scanner-4 (LISS-4) cameras.
- The AWiFS provides images with a sampling of 56 metres, a swath of 740 km and a revisit of 5 days whereas the LISS-3 provides 23.5 metre sampled images with 141 km swath and a revisit of 24 days. LISS-4 provides 5.8 metre sampled images with 70 km swath and a revisit of 5 days.
- The total number of satellites launched by India's workhorse launch vehicle PSLV including today's RESOURCESAT-2A has now reached 122, of which 43 are Indian and the remaining 79 are from abroad.
- In the coming days, the satellite will be brought to its final operational configuration following which it will begin to provide imagery from its three cameras.

Utility of the satellite:

The data sent by RESOURCESAT-2A will be useful for agricultural applications like

- crop area and crop production estimation,
- drought monitoring,
- soil mapping, cropping
- system analysis and
- Farm advisories generation.

JOHN GLENN (JULY 18, 1921 – DECEMBER 8, 2016)

- John Glenn was a NASA astronaut.
- In 1962, he became the first American to orbit Earth.
- After leaving NASA, he became a U.S. senator.
- Later, he became the oldest person to fly in space.

STEPS TAKEN TO BOOST DIGITAL TRANSACTIONS

Digital transactions have surged in the range of 400-1,000 per cent since November 8 when government announced discontinuation of old Rs 500/1000 notes

- The government has launched free-to-air channel **DigiShala** which will be available on Doordarshan's DTH platform and **'CashlessIndia' website** to educate people about digital transactions.
- Central Govt. Petroleum PSUs will offer discount at the rate of 0.75% of the sale price to consumers making payment through digital means.
- 1 Lakh villages with population less than 10,000 to get 2 PoS machines free of cost, supported through financial inclusion fund.
- Govt. will support RRBs and Cooperative Banks through NABARD to issue "Rupay Kisan Cards" to 4.32 crore Kisan Credit Card holders

- Sub-urban railway consumers making digital payment for monthly/season tickets to get discount upto 0.5% from January 1, 2017.
- All railway passengers buying online ticket shall be given free accidental insurance cover of up to Rs. 10 lakhs if digital payment is made.
- Railways to provide a discount of 5% for digital payment of paid services offered through its affiliates.
- Public Sector Insurance companies to provide incentive on digital payment of premium for new policies sold through their customer portals.
- Central Govt. Dept & PSUs to ensure that transactions charges associated with digital payment shall not be passed on to the consumers.
- PSBs to ensure that merchants should not be required to pay more than Rs. 100/month as monthly rental for PoS terminals/Micro ATMs/mobilePoS
- No service tax will be charged on digital transactions up to Rs. 2000 per transaction
- A discount of 10% will be available for using RFID card/Fast Tags making digital payments at Toll Plazas on National Highways.

Benefit of digital transactions:

- With digital transactions money will come into system, it will be accountable, generate tax and develop country's economy.
- When money will come in to bank then government will be able to come up with better welfare schemes
- Digital payments are important for making society free from corruption and control flow of black money.

FEMALE GENITAL MUTILATION (FGM)

In news: A group of women from the Dawoodi Bohra community have petitioned the United Nations, demanding that India be recognised as a country where Female Genital Mutilation (FGM) or Female Genital Cutting (FGC) is practised.

The petition says that due to the secrecy around the practice, it is ignored by the government and there is no data on FGM from India. The petition was put up by a group called Speak Out on FGM.

Since the group formed in 2015, it has run several campaigns to reach out to the community.

- Their campaign, Not My Daughter, has over 150 Bohra parents pledging that they wouldn't put their daughter through the suffering.
- Their most recent campaign, Each One Reach One, in collaboration with another group called Sahiyo, asks each participant to reach out to at least one Bohra woman to have a conversation about khatna.

What is Female Genital Mutilation (FGM)?

- The World Health Organization defines FGM, sometimes called female circumcision as all procedures that involve partial or total removal of the external female genitalia, or other injury to the female genital organs for non-medical reasons.
- The WHO also emphasizes that the procedure has no health benefits.

Background:

- In India, the commonly practiced form of cutting is clitoridectomy, the partial removal of the clitoris, specifically the clitoral hood that is made of erectile tissue and protects the glans.
- Called 'khatna' or 'khafz' in India, it is common in the two-million-strong Dawoodi Bohra community.
- The procedure is carried out secretly, by women who are not qualified medical practitioners, usually in non-sterile environments, and without anaesthesia or painkillers. The 'tradition' is that girls should bear the pain and never let others know what they feel.
- The act of female cutting is carried out with an idea of reducing sexual pleasure or reducing libido in women.

ONLINE RIVER WATER AND AIR QUALITY MONITORING (WAQM) SYSTEMS

- It is a joint programme of Department of Science and Technology (DST) and Intel in Public-Private Partnership (PPP) mode.
- The program will be administered by the bi national Indo-U.S. Science and Technology Forum (IUSSTF).
- It is soliciting proposals from Academic/Research Institutions and providing grant-in-aid support to the selected project(s), recognizing the importance of developing the online River Water and Air Quality Monitoring (WAQM) systems.
- The goal of this research would be to enable the development and eventual deployment of low-cost, low-power, autonomous wireless sensor networks to provide a fine-grained view of several critical water and air quality metrics over large geographic areas (cities, rivers , watersheds etc.).
- This real time data will significantly further strengthen and complement the Missions of National priority like Namami Gange Programme and others by serving as critical data feeders for pre and post treatment analysis.

Need for Water Monitoring:

- Discharge of untreated sewage from urban centres is a major cause of water quality degradation in the river.
- The total wastewater generation from 222 towns in Ganga basin is reportedly 8250 MLD, out of which 2538 MLD is directly discharged into the River, 4491 MLD is disposed into its tributaries and 1220 MLD is disposed on land or low lying areas.
- River Yamuna is another one of the most grossly polluted rivers in the country.

UN COMMITTEE AGAINST TORTURE

In news: In a recently released report, the UN Committee Against Torture expressed deep concern over evidence it has found for ongoing instances of torture in Sri Lanka.

Background:

- The island's protracted civil war is said to have claimed an estimated 40,000 civilian lives in its final stages, before the State armed forces defeated the rebel LTTE in May 2009.
- While pointing to "positive aspects" of the government's initiatives, such as the adoption of the 19th Amendment to Sri Lanka's Constitution which led to the appointment of independent constitutional commissions, the UN committee observed that the investigations were not moving ahead.

UN Committee Against Torture:

- The Committee Against Torture (CAT) is the body of 10 independent experts that monitors implementation of the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment by its State parties
- All States parties are obliged to submit regular reports to the Committee on how the rights are being implemented.
- States must report initially one year after acceding to the Convention and then every four years. The Committee examines each report and addresses its concerns and makes recommendations to the State party in the form of "concluding observations".

ROHINGYA ISSUE

In news:

- Bangladesh, which shares a 168-km border with Myanmar, has refused to accept more Rohingya refugees following a military crackdown in the Rakhine State of Myanmar.
- According to the International Organization for Migration, around 21,000 Rohingyas have already fled to Bangladesh in recent weeks to escape violence in Myanmar.
- Dhaka has urged Myanmar's leadership to resolve the Rohingya Muslim issue through political means, remarking that military measures could not be the answer to the problem.

Background:

- Since the enactment of the 1982 Burma Citizenship Law, which effectively denies to the Rohingyas the possibility of acquiring a nationality, the 1.33 million Rohingyas have led perilous and uncertain lives and have migrated in large numbers to safer places.
- The recent military intervention was initiated to track down unidentified insurgents thought to be responsible for the attack on police border posts.

This new democracy needs to find a lasting solution to the Rohingya crisis, as much for itself as for the refugees who should not be either forgotten or forsaken by the global community.

INDIA'S FISHING SUBSIDIES**In news:**

- India has notified the World Trade Organisation (WTO) on the subsidies it pays fisher folk amid demands from a U.S.-led group of nations 'Friends of Fish' for a ban on subsidies given for illegal, unregulated and unreported (IUU) fishing.
- The filing to the WTO Committee on Subsidies and Countervailing Measures (SCM), shows 'fishery subsidy schemes' at the Central, state and union territory-levels mainly aim to protect and secure the livelihood of traditional and poor fishing communities.

'Unsustainable' fishing

- The U.S.-led group, 'Friends of Fish', is seeking a ban on subsidies given for IUU fishing, citing the rising global demand for fish and the consequent increase in 'unsustainable' fishing.
- The demands of the grouping include ensuring a ban on subsidies, including that on fuel, which cut operating costs. India will be one of the countries that will be impacted by such a ban.
- According to the UN Food and Agriculture Organisation's 'State of World Fisheries and Aquaculture', almost a third of commercial fish stocks are now fished at biologically unsustainable levels, triple the level of 1974.

India's stand: India, among others, has expressed apprehensions that the demand for a ban on subsidies for IUU fishing could lead to prohibition even on fishing that could be termed non-IUU. This could, in turn, harm the interests of lakhs of subsistence fisherfolk in poor and developing nations.

- Currently there is no unanimity among WTO members on what constitutes IUU fishing.
- Several countries including India are wary about agreeing to stringent norms on this aspect due to its possible impact on the livelihood of millions of workers in the fisheries sector.

- ‘Cherry picking’ of topics of interest to developed nations and prioritising negotiations on fisheries subsidies are happening even as progress of talks has slowed on the Doha Development Agenda’s other aspects such as food security of interest to India and many other developing nations.
- Even when it came to negotiations on fisheries subsidies, the ‘Friends of Fish’ group is not targeting the subsidies given by the U.S., which among other sectors also benefits its fishing industry, to be banned.

1000 MW ROOFTOP SOLAR PV SCHEME FOR GOVERNMENT SECTOR

- As a step towards fulfilment of the Government of India’s target for installation of 40 GW rooftop solar power plants by the year 2022, Solar Energy Corporation of India (**SECI**) is launching a tender of 1000 MW capacity for development of grid-connected rooftop solar capacity for Central Government Ministries/Departments.
- This would be the largest rooftop tender to be launched by SECI, and is expected to give a big boost to the hugely potent rooftop solar power generation segment.
- The upcoming 1000 MW tender is especially targeted at utilising the numerous buildings of the Central Government Ministries/Departments.
- The highlight of this tender is its innovative ‘Achievement-Linked Incentives scheme’ wherein the incentives in terms of capital subsidy shall be provided on the basis of performance achieved by designated Ministries/departments against their committed targets in the given timespan.
- A toll-free number is being set up to ensure ease of communication of various stakeholders to SECI.

SECI: SECI is the leading PSU in the rooftop solar segment, and has already commissioned over 54 MW capacity of rooftop solar projects under multiple government schemes

PARK GEUN-HYE’S IMPEACHMENT

- South Korean lawmakers voted to impeach President Park Geun-hye over an influence-peddling scandal, setting the stage for her to become the country’s first elected leader to be pushed from office in disgrace.
- The Constitutional Court will decide whether to uphold the motion, a process that could take up to 180 days. It will determine whether parliament followed due process and whether there were sufficient grounds for impeachment. Arguments from the two sides will be heard in public hearings.
- Under the constitution, Park’s duties will be assumed by Prime Minister Hwang Kyo-ahn on an interim basis until the court rules.

COMMON SERVICES CENTRES

- The CSCs help people apply online for a range of services- passport registration, PAN cards and Aadhaar cards, and a whole host of other certificates without them having to visit a government office.
- CSC operators scan documents and upload them through a portal to the relevant government office that will then send back a completed certificate or card.
- They are like cybercafes, except they connect only to Digital India.
- Over the past two or three years, a huge number of these centres have added services like banking and insurance to their offerings.

Background:

- The concept of CSCs was approved in 2006 as part of the National e-Governance Plan.
- CSCs are set up in a public-private partnership mode, with a designated state agency being a franchisor of sorts for village level entrepreneurs (VLEs) to set up centres.
- VLEs must have passed a matriculation-level examination by a recognised board, be fluent in reading and writing the local language, and make arrangements for infrastructure.
- According to Union Ministry for Information Technology, now there are close to 2,00,000 CSCs across India.
- The government has now renamed the project CSC 2.0 and announced plans to scale up to the point that there is at least one centre in each of the 2.5 lakh gram panchayats in the country.

Concern Areas:

- The network's obvious potential to bridge policy and people is hampered by inconsistency in government mechanisms and the legal framework that it needs to rest on.
- Awareness of the existence of CSCs is low.

CYCLONE VARDHAH

Vardah is a major cyclonic storm originating in the Bay of Bengal. It made landfall in Tamil Nadu and coastal Andhra Pradesh.

India was also affected by other major cyclones Roanu, Kyant and Nada this year.

How are cyclones named?

Tropical cyclones passing over the northern part of the Indian Ocean are named by eight countries in the region, namely India, Pakistan, Bangladesh, Sri Lanka, Maldives, Myanmar, Oman and Thailand.

- The process only began in 2004, four years after World Meteorological Organization agreed in principle to allow them to name cyclones originating in the Bay of Bengal and Arabian Sea.

- The alphabet system is used to designate the name of a cyclone, which means the name of the year's first cyclone begins with A. Previously, till 1979, cyclones were only given female names. Male names were only introduced in the same year.
- World Meteorological Organization (WMO) maintains the database of cyclone/hurricane/typhoon names.
- There are six lists of names used in rotation and they are recycled every six years. The names are picked from this pre-designated list and are usually familiar with the people living in the region.
- India has so far contributed the following names: Agni, Bijli, Akash, Jal, Lehar, Megh, Sagar and Vayu.

Who named cyclone Vardah?

The name Vardah, which means red rose, was given by Pakistan. The name was originally part of a standby list that is used to replace retired names in the original list.

What is the difference between hurricane, cyclone and typhoon?

They all mean the same, except that they differ in terms of their geographical location. Hurricanes form in Atlantic and the Northeast Pacific oceans, typhoons in Northwest Pacific ocean and cyclones in South Pacific and Indian oceans.