

NATIONAL

GOI launched Leadership for Academicians Program (LEAP)

The government has launched Leadership for Academicians Programme (LEAP) for higher education faculty.

About the Leadership for Academicians Programme (LEAP):

- Leadership for Academicians Programme (LEAP) is a three weeks Flagship leadership development training programme (2 weeks domestic and one week foreign training) **for second level academic functionaries in public funded higher education institutions.**
- **The main objective** is to prepare second tier academic heads who are potentially likely to assume leadership roles in the future.
- **The programme would provide** senior faculty, with high academic credentials, the required leadership and managerial skills including skills of problem-solving, handling stress, team building work, conflict management, developing communication skills, understanding and coping with the complexity and challenges of governance in HEIs, financial & general administration.
- **The implementation** of LEAP Programme will be through 15 NIRF top ranked Indian Institutions namely. The foreign Universities identified for the training are also within the top 100 in the world global rankings.

Annual Refresher Programme in Teaching (ARPIT)

The Central govt. has launched Annual Refresher Programme in Teaching (ARPIT) for higher education faculty.

About Annual Refresher Programme in Teaching (ARPIT):

Annual Refresher Programme in Teaching (ARPIT) is a major and unique **initiative of online professional development of 15 lakh higher education faculty using the MOOCs platform SWAYAM.**

- For implementing ARPIT, 75 discipline-specific institutions have been identified and notified as National Resource Centres (NRCs) in the first phase, which are tasked to prepare online training material with focus on latest developments in the discipline, new & emerging trends, pedagogical improvements and methodologies for transacting revised curriculum.
- **ARPIT will be an ongoing exercise** so that every year NRCs will continuously develop new refresher module in their earmarked discipline each year. The training materials will be uploaded and made available through SWAYAM. NRC will publish the list of the faculty who have been certified. The NRCs will revolutionize professional development of faculty by catering to massive numbers by leveraging ICT and online technology platform of SWAYAM.
- **NRCs are located** in a mixed range of institutions such as, Central Universities, IISc, IUCAA, IITs, IISERs, NITs, State Universities under the Ministry's Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMNMTT); UGC's Human Resource Development Centres (HRDCs), National Institutes for Technical Teachers Training (NITTTRs), IIITs and IGNOU.

Indian Health Fund

Tata Trust and The Global Fund backed Indian Health Fund (IHF) has chosen four innovators for early detection of tuberculosis (TB), malaria to effectively tackle these eradicate diseases.

Key Facts:

- The aim for selecting these innovators aims at leveraging technology for improving early detection and prompt treatment along with promoting diagnostics feasible for primary health care facilities.
- It also aims to supporting national efforts to effectively tackle eradicate these diseases which is crucial health challenges in India.
- Government has set a target of eliminating TB by 2025 and malaria by 2030. India contributes to 27% of the global TB burden and 68% of all malaria cases in the Southeast Asia region

What is Indian Health Fund (IHF)?

- IHF was launched in 2016 by Tata Trusts in collaboration with The Global Fund, to drive innovations towards key infectious disease challenges in India.
- It supports individuals and organisations with already germinated innovative strategies, services, products, such that they become sustainable and scalable solutions in addressing TB and malaria.
- The initiative is a long-term exercise aligned with country's goal of eliminating TB by 2025 and malaria by 2030. It will promote innovative solutions such that they are widely accessible and are affordable.

Indian Ocean Naval Symposium (IONS)

The 10th anniversary celebrations of the Indian Ocean Naval Symposium (IONS) was held in Kochi.

- The commemorative Special Cover of IONS 10th Anniversary celebrations depicts a map of the Indian Ocean and littoral countries of the IOR, signifying the geopolitical importance of the region.

About IONS:

- IONS, the 21st century's first significant international maritime security initiative launched in February 2008, provides a forum for discussion of regional maritime issues and promotes friendly relationships among member nations. It presently has 24 members and eight observer navies.

- ***It is a voluntary initiative*** that seeks to increase maritime co-operation among navies of the littoral states of the Indian Ocean Region by providing an open and inclusive forum for discussion of regionally relevant maritime issues and, in the process, endeavors to generate a flow of information between naval professionals that would lead to common understanding and possibly agreements on the way ahead.
- Under the charter of business adopted in 2014, the grouping has working groups on Humanitarian Assistance and Disaster Relief (HADR), Information Security and Interoperability (IS&I) and anti-piracy now renamed as maritime security.

New index to check ease of doing agri-business

The centre is planning to develop an online dashboard to track State performances and the Index will be rolled out in January 2019.

Ease of Doing Agri-Business Index:

- The new Ease of Doing Agri-Business Index will rank the States on the basis of reforms in the sector as well as their investment in agriculture, increased productivity, reduction of input costs, and risk mitigation measures.
- The Agri Ministry will consider rewarding the higher performing States both in absolute and incremental terms by linking the performance with allocation from flexi funds made available in various flagship.
- The proposed index will focus on reforms, with marketing reforms (25%) and governance and land reforms (20%) carrying almost half of the weight of the parameters in its scoring system.

Parameters:

- The parameters are process-oriented, and are meant to evolve as and when new reforms or initiatives are proposed.
- Another major parameter which States will be rated on is their success in reducing the cost of farm inputs (20%) by distributing soil health cards and encouraging organic farming and micro-irrigation.
- Risk mitigation measures such as crop and livestock insurance carry a 15% weightage, while increased productivity and investment in agriculture carry a 10% weight each.

Way ahead:

As agriculture is a State subject, the success of policies and reform initiatives proposed at the Centre is dependent on implementation by the States. To ensure that reform agenda of the government is implemented at a desired pace by all State governments, there is a need to develop a competitive spirit between the States.

Indian Wind Turbine Certification Scheme (IWTCS)

Ministry of New and Renewable Energy, in consultation with National Institute of Wind Energy Chennai, has prepared a draft of new Scheme called Indian Wind Turbine Certification Scheme (IWTCS) incorporating various guidelines.

About the Indian Wind Turbine Certification Scheme (IWTCS):

- The IWTCS is a consolidation of relevant National and International Standards (IS/IEC/IEEE), Technical Regulations and requirements issued by Central Electricity Authority (CEA), guidelines issued by MNRE and other international guidelines. It also incorporates various best practices from other countries to ensure the quality of the wind energy projects.
- The draft Scheme enlists the guidelines for the benefit of all the stakeholders from concept to lifetime of wind turbine, including Indian Type Approved Model (ITAM), Indian Type Certification Scheme (ITCS), Wind Farm Project Certification Scheme (WFPCS) and Wind Turbine Safety & Performance Certification Scheme (WTSPCS).
- The IWTCS is envisaged to assist and facilitate the following stakeholders; (i.) Original Equipment Manufacturers (OEMs) (ii.) End Users -Utilities, SNAs, Developers, IPPs, Owners, Authorities, Investors and Insurers (iii.) Certification Bodies (iv.) Testing Laboratories.

Need for a scheme in this context:

Wind sector in India is growing at a rapid pace with increased utilization of wind energy for the power development. The modern wind turbines have higher hub heights, larger rotor diameter, higher capacity and improved Capacity Utilization Factor (CUF) along with technological improvements.

Under these developments, there is a need for comprehensive document which provides the complete technical requirements which shall have to be complied by the wind turbines for the safe and reliable operation by all the stakeholders viz, OEMs, Independent Power Producers (IPPs), wind farm developers, Financial Institutions, Utilities and others. Also, there is a need for technical regulations which shall facilitate common ground for OEMs, Developers, Investors and Financial Institution for systematic development.

Global Digital Content Market 2018

The Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, has hosted a conference on Global Digital Content Market (GDCM)2018.

Key facts:

- The conference will feature sessions on music, film, broadcasting and publishing, as well as collective management, emerging models and the implications for the market and policy makers.
- India has been chosen as a host nation for the conference by World Intellectual Property Organization(WIPO) due to the strong creative industry in the country in films, music and media.
- The focus for this year's conference is the Asia Pacific region.

About Global Digital Content Market (GDCM)2018:

- GDCM is a platform to discuss vital issues and enhance development of the digital and IP generating industries such as publishing, films, music, and gaming all of which are major contributors to the Indian GDP.
- The GDCM 2018 will see participation of professionals from various creative fields, the digital industry around the world and delegates of the diplomatic community from Missions to the United Nations.
- The aim of GDCM 2018 is to give industry stakeholders a platform to come together and discuss new avenues in the films, music, gaming and creative industry along with points of challenge that is presented due to the changing creative landscape because of the disruption brought about by digital technologies.

National Green Tribunal (NGT) ruling on Stubble Burning

Stating that State governments had failed to curb stubble burning, the National Green Tribunal (NGT) has directed the Chief Secretaries of Delhi, Punjab, Haryana and Uttar Pradesh to draw up a plan to provide economic incentives and disincentives to farmers.

What's the issue?

Stubble burning is adversely affecting environment and public health. The problem has not been fully tackled and the adverse impacts on the air quality and consequent impacts on the citizens' health and lives are undisputed.

What needs to be done- Supreme Court's observations?

- The problem is required to be resolved by taking all such measures as are possible in the interest of public health and environment protection.
- Incentives could be provided to those who are not burning the stubble and disincentives for those who continue the practice.
- The existing Minimum Support Price (MSP) Scheme must be so interpreted as to enable the States concerned to wholly or partly deny the benefit of MSP to those who continue to burn the crop residue.
- Secretary, Union Ministry of Agriculture and Farmers' Welfare has also been directed to be present to "find a lasting solution."
- The Central government should convene a meeting with the States.

About the National Green Tribunal (NGT):

What is it? NGT has been established under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.

Ambit: The tribunal deals with matters relating to the enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property.

Members:

- ***Sanctioned strength:*** currently, 10 expert members and 10 judicial members (although the act allows for up to 20 of each).
- ***Chairman:*** is the administrative head of the tribunal, also serves as a judicial member and is required to be a serving or retired Chief Justice of a High Court or a judge of the Supreme Court of India.
- 1. ***Selection:*** Members are chosen by a selection committee (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews. The Judicial members are chosen from applicants who are serving or retired judges of High Courts.
- ***Expert members*** are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Principal Secretary if serving under a state government) with a minimum administrative experience of five years in dealing with environmental matters. Or, the expert members must have a doctorate in a related field.

Other facts:

- The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.
- The Tribunal's dedicated jurisdiction in environmental matters shall provide speedy environmental justice and help reduce the burden of litigation in the higher courts.
- The Tribunal is mandated to make and endeavour for disposal of applications or appeals finally within 6 months of filing of the same.

India's first multi-modal terminal on inland waterways in Varanasi

Prime Minister Narendra Modi recently inaugurated India's first multi-modal terminal on the Ganga river in Varanasi and received the country's first container cargo transported on inland waterways from Kolkata.

Key facts:

- The first consignment containing food and beverage had set sail from Kolkata in the last week of October.
- This is the first of the four multi-modal terminals being constructed on the National Waterway-1 (river Ganga) as part of the World Bank-aided Jal Marg Vikas project of the Inland Waterways Authority of India.

Benefits of container movement on inland waterways:

Container cargo transport comes with several inherent advantages. Even as it reduces the handling cost, allows easier modal shift, reduces pilferages and damage, it also enables cargo owners to reduce their carbon footprints.

About Jal Marg Vikas Project:

What is it?

The Jal Marg Vikas Project seeks to facilitate plying of vessels with capacity of 1,500-2,000 tonnes in the Haldia- Varanasi stretch of the River Ganga. The major works being taken up under JMVP are development of fairway, Multi-Modal Terminals, strengthening of river navigation system, conservancy works, modern River Information System (RIS), Digital Global Positioning System (DGPS), night navigation facilities, modern methods of channel marking etc.

Implementation: The JMVP, which is expected to be completed by March, 2023, is being implemented with the financial and technical support of the World Bank. The project will enable commercial navigation of vessels with the capacity of 1500-2,000 tons on NW-1.

Its objective is to promote inland waterways as a cheap and environment-friendly means of transportation, especially for cargo movement. The Inland Waterways Authority of India (IWAI) is the project implementing agency.

NW 1:

Ganga-Bhagirathi-Hooghly river system from Allahabad to Haldia was declared as National Waterway No.1. The NW-1 passes through Uttar Pradesh, Bihar, Jharkhand and West Bengal and serves major cities and their industrial hinterlands.

Competition Commission of India

Ashok Kumar Gupta has been appointed as the chairperson of the Competition Commission of India (CCI). It was approved by the Appointments Committee of the Cabinet (ACC).

About Competition Commission Of India:

The Competition Commission of India (CCI) was established under the Competition Act, 2002 for the administration, implementation and enforcement of the Act, and was duly constituted in March 2009. Chairman and members are appointed by the central government.

The following are the objectives of the Commission:

- To prevent practices having adverse effect on competition.
- To promote and sustain competition in markets.
- To protect the interests of consumers.
- To ensure freedom of trade.

Functions of the commission:

- 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.
- The Commission is also required to give opinion on competition issues on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

The Competition Act:

The Competition Act, 2002, as amended by the Competition (Amendment) Act, 2007, prohibits anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.

National body set up to study Monogenic diabetes

A National Monogenic Diabetes Study Group has been formed to identify cases of monogenic diabetes across the country. Supported by the Indian Council of Medical Research (ICMR), the Madras Diabetes Research Foundation (MDRF) and Dr. Mohan's Diabetes Specialities Centre (DMDSC) will be the national coordinating centre for the study group.

What is Monogenic Diabetes?

Monogenic diabetes is a group of disorders where mutation of a single gene causes diabetes; the three commonest forms being – Maturity Onset Diabetes of the Young (MODY), Neonatal Diabetes Mellitus (NDM) and Congenital Hypoglycaemia.

Factors of Monogenic diabetes:

- Monogenic diabetes is usually passed on in an autosomal dominant gene, (a sex independent gene that's inherited from one of the parents). This means only one copy of the mutation is needed to develop diabetes.
- There is usually a strong family history of diabetes and in multiple generations, (although it's possible for someone to have a spontaneous mutation). Diagnosis, therefore, involves genetic testing for these diabetes-causing gene mutations that disrupt insulin production.
- Monogenic diabetes patients are also usually antibody negative, (though there are cases where low levels of antibodies have been detected). Once treatment for the diabetes begins, the antibodies usually resolve.

In addition to blood sugar issues, some of the forms of Monogenic diabetes involve metabolic issues such as:

- Growth problems.
- Impaired glycogen storage in the liver.
- Impaired fatty acid metabolism.
- Exocrine pancreatic insufficiency.

INSPIRE 2018

The second edition of International Symposium to Promote Innovation & Research in Energy Efficiency (INSPIRE) is being held in New Delhi. The symposium will focus on enhancing grid management, e-Mobility, financial instruments and technologies for energy efficiency in India.

About INSPIRE 2018:

- INSPIRE 2018 has been organised in collaboration with the Bureau of Energy Efficiency (BEE), The Energy & Resources Institute (TERI), Asian Development Bank (ADB), the United Nations Environment Program (UNEP), and the Administrative Staff College of India (ASCI).
- The event is bringing together policy-makers, influencers, innovators, thought leaders, researchers, leading energy-efficient companies, government agencies, business leaders and other stakeholders to deliberate on key energy policies, market transformation strategies, and sustainable business models that will help leverage the full potential of energy efficiency and bring its multiple co-benefits to the fore.

About Energy Efficiency Revolving Fund (EERF):

Alongside, to support investments in new, innovative and scalable business models, EESL and Asian Development Bank (ADB) have signed an agreement for a Global Environment Facility (GEF) grant of USD 13 million to establish an Energy Efficiency Revolving Fund (EERF).

EERF aims to expand and sustain investments in the energy efficiency market in India, build market diversification, and scale up existing technologies.

About EESL:

Energy Efficiency Services Limited (EESL), under the administration of Ministry of Power, Government of India, is working towards mainstreaming energy efficiency and is implementing the world's largest energy efficiency portfolio in the country.

- Driven by the mission of Enabling More – more transparency, more transformation, and more innovation, EESL aims to create market access for efficient and future-ready transformative solutions that create a win-win situation for every stakeholder. By 2020, EESL seeks to be a US\$ 1.5 billion (INR 10,000 crore) company.

EESL has pioneered innovative business approaches to successfully roll-out large-scale programs that allow for incentive alignment across the value chain and rapidly drive transformative impact. EESL aims to leverage this implementation experience and explore new overseas market opportunities for diversification of its portfolio. As on date, EESL has begun its operations in UK, South Asia and South-East Asia.

Double jeopardy

The Supreme Court of India has ruled that ***the bar of double jeopardy does not arise if an accused was discharged of a criminal offence, even before the commencement of trial, on the basis of an invalid sanction for prosecution.***

Background:

The judgment is based on an appeal filed by the State of Mizoram against an order passed by the Gauhati High Court in August 2015.

- The corruption case was filed by the Aizawl police in February 2009 for misappropriation of public money. During inquiry, it was detected that the respondent had acquired valuable assets disproportionate to known sources of income.
- The first invalid sanction for prosecution was issued by the Commissioner-Secretary, Department of Personnel & Administrative Reforms (DP & AR) directly without the Governor's approval.
- Following the discharge of the accused by the special court, the Governor accorded a fresh sanction in December 2013. However, the high Court upheld a Special Court decision to decline to entertain a second chargesheet filed in a corruption case against the accused on the ground of double jeopardy.

What has the Court ruled?

- Article 20 (2) of the Constitution mandates that a person cannot be prosecuted or punished twice for the same offence.
- The court held that if an accused has not been tried at all and convicted or acquitted, the principles of double jeopardy cannot be invoked at all. If an earlier order of sanction was found to be invalid, there is no bar for the competent authority to issue a proper order of sanction for prosecution.
- The courts are not to quash or stay the proceedings under any Act merely on the ground of an error, omission or irregularity in the sanction granted by the authority unless it is satisfied that such error, omission or irregularity has resulted in failure of justice, the SC observed.

About Article 20- Protection in respect of conviction for offences:

1. No person shall be convicted of any offence except for violation of the law in force at the time of the commission of the act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the offence.
2. No person shall be prosecuted and punished for the same offence more than once.
3. No person accused of any offence shall be compelled to be a witness against himself.

Key facts:

- Article 20 has taken care to safeguard the rights of persons accused of crimes.
- Persons here **means the citizens, non-citizens as well as corporations.**
- This article **cannot be suspended even during an emergency in operation under article 359.**
- Article 20 also constitutes the limitation on the legislative powers of the Union and State legislatures.

Ex-Post facto Law Article 20 (1):

It says that no person shall be convicted of any offence except for violation of a law in force at the time of the commission of the Act charged as an offence, nor be subjected to a penalty greater than that which might have been inflicted under the law in force at the time of the commission of the offence. This is called Ex-Post facto Law. It means that legislature can not make a law which provides for punishment of acts which were committed prior to the date when it came into force. This means that a new law can not punish an old act.

Doctrine of Double Jeopardy:

Article 20(2) says that no person shall be prosecuted and punished for the same offence more than once. This is called Doctrine of Double Jeopardy. The objective of this article is to avoid harassment, which must be caused for successive criminal proceedings, where the person has committed only one crime.

There are two aspects of Doctrine of Jeopardy viz. *autrefois convict* and *autrefois acquit*. *Autrefois convict* means that the person has been previously convicted in respect of the same offence. The *autrefois acquit* means that the person has been acquitted on a same charge on which he is being prosecuted. Please note that **Constitution bars double punishment for the same offence. The conviction for such offence does not bar for subsequent trial and conviction for another offence and it does not matter the some ingredients of these two offences are common.**

Self Incrimination Law:

Article 20(3) of the constitution says that no person accused of any offence shall be compelled to be a witness against himself. This is based upon a legal maxim which means that No man is bound to accuse himself. The accused is presumed to be innocent till his guilt is proved. It is the duty of the prosecution to establish his guilt.

Global IT Challenge for Youth with Disabilities 2018

The Global IT Challenge for Youth with Disabilities, 2018, being organised by the Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment in association with Rehabilitation International Korea and their associated partner LG Electronics, was held in New Delhi.

About the Global ICT Challenge for Youth with Disabilities:

The Global ICT Challenge for Youth with Disabilities is a capacity building project that helps youth with disabilities to overcome their limitations and challenge themselves for a better future by providing them with access to ICT and related experiences, improving their ability to leverage information and social participation while setting ICT agendas for participant countries related to disabilities and boosting international cooperation and exchange.

The objective of the event is to leverage IT skills among youth with disabilities and also to spread awareness about the application of Information and Computer Technology (ICT) in enhancing the quality of life of persons with disabilities especially in Asia-Pacific region.

Participants: This year around 100 youth with disabilities (visual disability, hearing disability, locomotor disability and intellectual disability/developmental disorder) from 18 countries are participating in the event.

The competition is focused on strategies for strengthening IT skills of youth with disabilities as a critical requirement for enhancing their access to information and communication services on an equal basis with others. It is being held with a total of four events including e-Tool Challenge to evaluate the skills of using the MS Office programme and e-Life Map Challenge to evaluate the online information search ability in specific situations.

Significance of ICT:

Today, we have plethora of applications and softwares across the world that can be used for improving the life skills of persons with disabilities to enable them to lead the dignified life such ICT tools can work as communication bridge for the persons with disabilities. The use of ICT can reduce digital divide and expand social integration of persons with disabilities across communities and counties by creating an accessible global information network.

Way ahead:

India has always been in the forefront of software development in the world. However, there is a need to create deeper and wider awareness about the application of ICT at the grass root level for empowering the person with disabilities.

Advanced Motor Fuels Technology Collaboration Programme

The Union Cabinet has been apprised of India joining as Member of Advanced Motor Fuels Technology Collaboration Programme (AMF TCP) under International Energy Agency (IEA).

- The primary goal of joining AMF TCP by India to bring down emissions and achieve higher fuel efficiency in transport sector.

What is Advanced Motor Fuels Technology Collaboration Programme?

- AMF TCP is **an international platform under the framework of International Energy Agency (IEA)** for co-operation among countries to promote cleaner and more energy efficient fuels & vehicle technologies.
- The activities of AMF TCP are deployment and dissemination of Advanced Motor Fuels. It looks upon the transport fuel issues in a systemic way taking into account the production, distribution and end use related aspects.
- AMF TCP also provides an opportunity for fuel analysis, identifying new/ alternate fuels for deployment in transport sector and allied R&D activities for reduction in emissions in fuel intensive sectors.

India and Other Members:

Ministry of Petroleum & Natural Gas has joined AMF TCP as its 16th member in May, 2018. The other member Countries of AMF TCP are USA, China, Japan, Canada, Chile, Israel, Germany, Austria, Sweden, Finland, Denmark, Spain, Republic of Korea, Switzerland and Thailand.

Benefits for India:

- India's association with AMF TCP will help in furthering its efforts in identification & deployment of suitable fuels for transport sector for higher efficiency and lesser emissions.
- The benefits of participation in AMF TCP are shared costs and pooled technical resources.
- The duplication of efforts is avoided and national Research and Development capabilities are strengthened.
- There is an information exchange about best practices, network of researchers and linking research with practical implementation.
- After becoming member, India will initiate R&D in other areas of its interest in advanced biofuels and other motor fuels in view of their crucial role in substituting fossil fuel imports.

Supreme court refuses to stay ruling on sabarimala issue

- The Supreme Court has agreed to hear in open court review petitions against its majority judgment which lifted a ban on women aged between 10 and 50 years from undertaking the pilgrimage to the Sabarimala temple in Kerala.
- The Review Bench of five judges, led by Chief Justice of India Ranjan Gogoi, however, refused to stay the majority judgment by a Constitution Bench on September 28. The majority judgment had declared the exclusion, solely based on the menstrual status of women, to be a smear on individual dignity. It said the bar amounted to "treating women as the children of a lesser God".
- The refusal to stay the judgment would mean that worshippers, both men and women of all ages, can still undertake the pilgrimage when the temple re-opens on November 16 evening for Mandala Pooja.
- Advocate G. Prakash, who represents the Kerala government in the issue, said the Bench has only taken a prima facie decision to hear the review petitions in open court. "It has not issued notice. On January 22, the same Review Bench will hear the petitioners and decide whether their pleas should be admitted or not," he said.
- The September judgment had triggered widespread protests in Kerala. The State Police has arrested thousands of protestors even as Kerala Chief Minister Pinarayi Vijayan staunchly stood by the judgment.
- Justice Indu Malhotra held that imposing the court's morality on a religion would negating the freedom to practise religion according to one's faith and beliefs. Justice Malhotra's judgment has become a rallying point for petitioners.

Election Commission warns political parties on furnishing of false statements

- Candidates with criminal antecedents and their political parties can be charged with contempt of the Supreme Court if they fail to widely publicise the cases against them as prescribed. They may also be penalised for false statements, the Election Commission has said.

- Separate formats have been specified for the candidates and the parties to submit reports about publication of the declaration. The failure of the candidates and the parties to publicise the details in the manner prescribed may be a ground for post-election action like election petition or contempt of court.
- The court has made it mandatory for the candidates and their parties to publish or broadcast details of the cases against them at least three times ahead of elections. The ruling applies to all candidates in the Rajasthan, Madhya Pradesh, Chhattisgarh, Mizoram and Telangana Assembly elections. The parties are also required to upload the details on their websites.
- If anyone furnishes a false statement, the Election Commission can act under various provisions, including Section 171 (G) of the Indian Penal Code that prescribes a fine.
- The Election Commission has received a representation about expenses on television and newspaper advertisements of criminal antecedents, and it may take a decision on Monday

Supreme court says long term cohabitation of couples is equivalent marriage

- The Supreme Court has upheld the "presumption" that a couple who live together as husband and wife are legally married and the woman can claim maintenance under Section 125 of the Code of Criminal Procedure.
- Citing past judgments of the apex court, the Bench quoted that "where a man, who lived with a woman for a long time and even though they may not have undergone legal necessities of a valid marriage, should be made liable to pay the woman maintenance if he deserts her".
- "The man should not be allowed to benefit from the legal loopholes by enjoying the advantages of a de facto marriage without undertaking the duties and obligations. Any other interpretation would lead the woman to vagrancy and destitution, which the provision of maintenance in Section 125 is meant to prevent," the court said in a recent judgment.
- The judgment was based on an appeal filed by a woman against a Karnataka High Court decision of June 2009. The High Court set aside a family court order, directing the man she lived with since 1998, and had two children by, to pay maintenance. Their relationship had been solemnised in a temple. He had later abandoned the family.
- The family court had ordered him to pay the woman Rs. 3000 and the children Rs. 2500 each on a monthly basis. The court said they were accepted as husband and wife by society. The man had, however, moved an appeal in the High Court, which pronounced that there was no proof that she was his legally-wedded wife.

Human-Tiger conflict

The shooting of a tigress in Maharashtra shows that big cats were victims of human-tiger interface conflict. Click [here](#) to know more on the issue.

How has the issue evolved?

- The six-year-old tigress, named Avni, is survived by her two cubs who are 10 months old.
- Of the 13 people killed in tiger attacks in the Pandharkawda divisional forest in over two years, at least five deaths were attributed to Avni.
- The first order to shoot T1 was issued in January but was stayed by the Nagpur bench of the Bombay High Court after the tigress was found to be moving with her cubs.
- The second order came after the three successive fatal attacks in August, leading to massive public outrage.
- The operation to capture or kill T1 and capture her cubs had been going on since then, making it one of the longest such in the country to capture or kill a tiger.
- The tigress was finally shot down recently.

What are the concerns with tiger protection in India?

- India is in a leadership position on the tiger front with almost 70% of the global tiger population.
- India pioneered tiger conservation with Project Tiger by conserving 2.4% of our geographical area as tiger reserves.
- However, our tiger reserves, national parks and sanctuaries exist only as small areas in a vast sea of human, cattle and unsustainable land use.
- The stakeholders are many here, from primary (local people) to secondary (government departments) and tertiary (business groups, semi-urban scape).
- Urbanisation and growth agendas alter landscape dynamics, which has a cascading effect on the ecological dynamics of wildlife.
- This results in ecological dislocation of sorts, wherein endangered wild animals like tigers either cause distress or land themselves in trouble.
- Our per capita forest is just 0.064 ha compared to the global average of 0.64 ha, which partly explains the forest resource dependency of a large number of rural people.
- India has 668 protected areas, which add up to 14% of her forest area and 50 of these protected areas are tiger reserves.
- But the concessions in our forests have caused overuse and abuse of resources.

- Loss of forest productivity in terms of forage for wild herbivores has meant that the bulk of our forests cannot sustain medium-sized wild herbivores like deer, mega herbivores like elephants or big cats like tigers.
- In fact, successive assessments have revealed that tigers are largely confined to their source areas (core areas of tiger reserves) and their fringes (buffers).
- The bulk of other forests in most of India's tiger states have practically lost their habitat value owing to excessive biotic pressure.
- Consequently, agriculture and cash crops beyond protected areas readily lure wild pigs and other preys, which in turn lure big cats.
- The inevitable outcome is "conflict of interface" between wildlife and humans, which cause distress to people.
- This "interface" is further influenced by urbanisation, rail and road transport infrastructure and intensive operations like mining or special economic zones which are part of the growth agenda in any developing country.

What should be done?

- Human-wildlife interface is here to stay and while there can be no "co-existence" with tigers or elephants, a "co-occurrence" agenda with a proactive management control is available.
- The National Tiger Conservation Authority (NTCA) has brought out several Standard Operating Procedures (SOPs) to deal with various challenges of the human-tiger interface.
- An incapacitated tiger or leopard has to be captured on priority.
- A prime animal straying close to human settlements requires active monitoring and translocation to suitable habitat as in the case of an orphaned tigress shifted from the fringes of Bandhavgarh to Satpura.
- This requires –
 1. 24x7 monitoring using technology
 2. Management of corridors
 3. Building up the frontline capacity
 4. Creating village teams for reporting wild animal presence
 5. Intersectoral portfolio at the landscape level akin to the "master plan" envisaged for an eco-sensitive zone.
- Human-tiger interface management demands proactive measures.
- One cannot allow a big cat to get habituated and then brutally eliminate it.
- The Avni story is a tragic end for our national animal, and a complete travesty of the responsibility reposed on foresters and wildlife experts.

INTERNATIONAL

SpiNNaker- World's largest brain-like supercomputer

SpiNNaker is the world's largest supercomputer designed to work in the same way as the human brain. It has been switched on for the first time.

The newly formed million-processor-core Spiking Neural Network Architecture (SpiNNaker) machine is capable of completing more than 200 million million actions per second, with each of its chips having 100 million transistors.

What are biological neurons?

- The SpiNNaker machine, designed and built in The University of Manchester in the UK, can model more biological neurons in real time than any other machine on the planet.
- Biological neurons are basic brain cells present in the nervous system that communicate primarily by emitting 'spikes' of pure electro-chemical energy.
- Neuromorphic computing uses large scale computer systems containing electronic circuits to mimic these spikes in a machine.

What is unique about SpiNNaker?

SpiNNaker is unique because, unlike traditional computers, it does not communicate by sending large amounts of information from point A to B via a standard network. Instead it mimics the massively parallel communication architecture of the brain, sending billions of small amounts of information simultaneously to thousands of different destinations.

How it works?

- Researchers eventually aim to model up to a billion biological neurons in real time and are now a step closer. To give an idea of scale, a mouse brain consists of around 100 million neurons and the human brain is 1,000 times bigger than that.
- One billion neurons is one per cent of the scale of the human brain, which consists of just under 100 billion brain cells, or neurons, which are all highly interconnected via approximately one quadrillion synapses.

- One of the fundamental uses for the supercomputer is to help neuroscientists better understand how our own brain works. It does this by running extremely large scale real-time simulations which simply aren't possible on other machines.
- For example, SpiNNaker has been used to simulate high-level real-time processing in a range of isolated brain networks. This includes an 80,000 neuron model of a segment of the cortex, the outer layer of the brain that receives and processes information from the senses.

Potential for neurological breakthroughs:

- It also has simulated a region of the brain called the Basal Ganglia – an area affected in Parkinson's disease, meaning it has massive potential for neurological breakthroughs in science such as pharmaceutical testing.
- The power of SpiNNaker has even recently been harnessed to control a robot, the SpOmnibot. This robot uses the SpiNNaker system to interpret real-time visual information and navigate towards certain objects while ignoring others.

UNESCO Asia-Pacific award for conservation

UNESCO Asia-Pacific Awards for Cultural Heritage Conservation have been announced as follow.

- **Award of Distinction:** Restoration of LAMO Center from a state of partial ruin in Ladakh.
- **Honourable Mention:** Rejuvenation of iconic Rajabai Clock Tower and Ruttonjee Muljee Jetha Fountain in Mumbai, along with a project in China.
- **Award of Excellence:** Shijo-cho Ofune-hoko Float Machiya, of Kyoto, Japan.
- **New Design in Heritage Contexts:** Kaomai Estate 1955, Chiang Mai (Thailand) and Harts Mill, Port Adelaide, (Australia).

Facts for Prelims:

Mumbai has won 19 recognitions since the inception of the awards in 2000 – the most for any city in India.

About the award:

- **Launched in 2000**, Unesco Asia-Pacific awards for cultural heritage conservation programme is aimed at acknowledging the efforts taken to restore and conserve historical structures without affecting their heritage value in the region comprising 48 countries.
- **The awards are classified under four categories** — Award of Excellence, Awards of Distinction, Awards of Merit and Award for New Design in Heritage Context.
- **They are being given to encourage** the efforts of all stakeholders and the public in conserving and promoting monuments and religious institutes with rich heritage in the Asia-Pacific region.

PM visited Singapore to attend East Asia Summit & ASEAN

- Prime Minister Narendra Modi arrived in Singapore on a two-day visit to attend the East Asia Summit, ASEAN-India informal meet and the Regional Comprehensive Economic Partnership, RCEP Summit.
- Mr.Modi addressed the Fintech Festival. About Thirty thousand people attended the keynote address of Mr.Narendra Modi who became the first head of government to deliver an address at this Festival. This is one of the largest events on financial technology.
- Prime Minister Modi also attended the RCEP Summit to review the progress made on the negotiations to finalise the proposed free trade agreement.
- It is being negotiated amongst sixteen countries including ten ASEAN Member States and India, Australia, China, Japan, New Zealand and Republic of Korea.
- Mr. Modi also held several bilateral meetings like with US Vice President Mike Pence and Prime Ministers of Singapore, Australia and Thailand

UN urges Bangladesh to stop Rohingya repatriation plan

- UN High Commissioner for Human Rights Michelle Bachelet has urged Bangladesh to halt plans for the repatriation of more than 2,200 Rohingya refugees to Myanmar.
- In a statement, the UN Human Rights Office has said that forcibly returning them to their home country would be in violation of international law and put their lives and freedom at serious risk.
- Bachelet said, the refugees in Bangladesh's Cox's Bazar are the victims of human rights violations committed in the midst of the violence that erupted in August 2017 and are unwilling to return under current conditions.
- She appealed to the Government of Bangladesh to ensure scrupulously that any repatriation takes place in line with international standards of voluntariness, safety and dignity, with full transparency, and only when the conditions are right.

Bachelet also called on the Government of Myanmar to show its seriousness in creating the conditions for return by addressing the root causes of the crisis in Rakhine state, in particular, the systematic discrimination against and persecution of Rohingyas.

Trump and Emmanuel Macron agree on revamping European defence

- France's Emmanuel Macron and U.S. President Donald Trump agreed on Saturday on the need for Europe to bear more of the burden for defence, papering over an earlier Trump tweet that described Mr. Macron's call for a European army as "very insulting".

- Meeting for talks at the Elysee ahead of commemorations to mark the 100th anniversary of the end of the First World War, Mr. Macron welcomed Mr. Trump with a firm handshake, but there appeared to be less immediate warmth between them than in the past.
- Mr. Macron echoed those sentiments, saying that he wanted Europe to bear a greater share of the defence costs within NATO, a point he has made repeatedly since taking office, alongside calls for Europe to develop its own military capability. "That's why I do believe my proposals for European defence are totally consistent with that," Mr. Macron said in English.
- Fresh off U.S. congressional elections that saw his Republican Party's power eroded, Mr. Trump is in Paris to bolster the U.S.-European alliance during the Armistice commemorations.
- Discussing the threat from cyberhacking and outside meddling in the electoral process, Mr. Macron said Europe needed to protect itself against China, Russia "and even the United States".

Centre affirms to no direct talks with Taliban

- Facing a barrage of questions on its sudden shift in policy on attending talks with the Taliban, the Centre has clarified that its delegation at the second 12-nation 'Moscow format meeting of consultations on Afghanistan' would not hold direct talks with the insurgent group there.
- The government said its policy on Afghanistan was "consistent", despite its decision to send two former diplomats, Amar Sinha and TCA Raghavan, to the talks.
- It would mark the first time an Indian delegation would be at the table with a Taliban delegation from its political office in Doha.
- India had refused to recognise the Taliban government in Afghanistan (1996-2001) and had opposed talks with the Taliban at least until a few years ago, insisting thus far on an "Afghan-owned, Afghan-led and controlled" process.
- The Opposition parties sought to know why India had sent representatives to the talks when they weren't being led by the Ghani government.
- Asked for the rationale behind the turnaround, the MEA spokesperson denied that the decision had been taken under pressure from either Moscow or Kabul.
- "There was no compulsion here. Whatever we think will take the process forward, consistent with our policy, we will participate in. And we made it very clear that our participation at the meeting will be at the non-official level," Mr. Kumar said.

India –Singapore naval exercise to celebrate silver jubilee

- The 25th edition of SIMBEX, an acronym for "Singapore-India Maritime Bilateral Exercise" is scheduled from 10th to 21st November 2018 off Andaman Sea and Bay of Bengal. Bilateral cooperation between Singapore and India was first formalised when RSN ships began training with the Indian Navy in 1994.
- . What began as a modest endeavour to exchange best practices in the field of Anti-Submarine Warfare (ASW), has in the recent years evolved into a complex high stakes exercise with both nations attaching premium in terms of time, complex advanced exercises and type of platforms involved.
- Complementing India's 'Act-East' policy, there have been a number of agreements and high level visits in the recent past between the two countries. Indo-Singapore bilateral relations have been on an upswing in the recent past.
- Both countries have a full calendar of more than 20 bilateral mechanisms, dialogues and exercises, many of which take place annually. In November 2015, the robust relationship between the two countries was elevated to 'Strategic Partnership'.
- Both sides agreed to undertake continuous and institutionalised naval engagements in their shared maritime space including establishing maritime exercises with like-minded regional / ASEAN partners.
- SIMBEX 2018 will be the largest edition since 1994 in terms of scale and complexity. The initial harbour phase will be held at Port Blair, the capital of Andaman and Nicobar Islands from 10 to 12 November followed by Sea Phase from 12 to 16 November in the Andaman Sea.

U.S tightens asylum policy for migrants

- President Donald Trump has invoked extraordinary national security powers to deny asylum to migrants who enter the country illegally, tightening the border as caravans of Central Americans approach the U.S.
- Mr. Trump is using the same powers he used to push through a version of the travel ban that was upheld by the Supreme Court. The proclamation puts into place regulations adopted that circumvent laws stating that anyone is eligible for asylum no matter how he or she enters the country.
- Administration officials say the measures, likely to face legal challenges, go into effect on Saturday for at least three months, but could be extended. They don't affect people who are already in the country.
- The changes are meant to funnel asylum seekers through official border crossings for speedy rulings, officials said, instead of having them try to circumvent such crossings on the nearly 3,200-km border.
- But the busy ports of entry already have long lines and waits, forcing officials to tell some migrants to turn around and come back to make their claims. Even despite that, illegal crossings are historically low.
- The announcement was the latest push to enforce Mr. Trump's hardline stance on immigration through regulatory changes and presidential orders, bypassing Congress which has not passed any immigration law reform. But those efforts have been largely thwarted by legal challenges and, in the case of family separations this year, stymied by a global outcry that prompted Mr. Trump to scrap them.

India's Shifting Position on Taliban

What is the issue?

- India sent two former diplomats as "non-official" participants at the recent "Moscow format" multilateral meeting that included Taliban delegates.
- Indian government-nominated representatives sharing the table with a Taliban delegation for the first time is notable.

What is Afghanistan's stance?

- Afghanistan did not send delegates from its foreign ministry, but from the Afghan High Peace Council (HPC).
- They were joined by the Ambassador to Russia.
- The HPC is a government-appointed forum tasked with the peace and reconciliation process.
- India is understood to have consulted Kabul about the level of its participation.
- The Indian representatives did not make a statement at the meeting.

What was India's traditional position?

- India was among the countries that had refused to recognise the Taliban regime of 1996-2001.
- India watched Taliban's growth with concern, assessing early that it was being driven by Pakistan's army and the ISI.
- The Kandahar hijack of Indian Airlines flight IC-814 forced India to negotiate.
- At other times, it supported anti-Taliban forces in Afghanistan.
- Throughout the 1990s, India gave military and financial assistance to the Northern Alliance fighting the Pakistan-sponsored Taliban regime in Afghanistan.
- Meanwhile the 9/11 attacks and the US crackdown leading to the fall of the Taliban regime took place.
- When the Taliban re-emerged in 2006-07 to once again challenge US forces, India maintained it was not going to talk with the Taliban.

What was the further development?

- The Taliban grew in strength, and the US decided to withdraw troops by 2009.
- So the Afghan government reached out to the Taliban with a peace and reconciliation process.
- In the International Conference on Afghanistan in London in 2010, India made a quiet shift.
- It said it is for the elected Afghanistan government to draw the "red lines" - the terms for negotiating with the Taliban.
- [The red lines are the rights of the people, especially women's rights, the right to education, the democratic process all of which are enshrined in constitution.
- The "red lines" had defined the Kabul-Taliban negotiations and these will not be compromised during the talks.]
- The Afghan government had stated that the Taliban must accept the Afghan Constitution.
- It called for it to renounce violence and sever all ties with al-Qaeda and other terrorist organisations.
- This was endorsed during the International Conference. That was the first diplomatic opening.
- Although India would not directly talk to Taliban, this shift meant it was approving the outreach if the Taliban adhered to these red lines.

What is the significance of the recent move?

- Over the last couple of years, the US, China and Russia brokered reconciliation and peace talks between the Afghan government and the Taliban.
- With this, India stopped public articulation and insisting on the "red lines".
- It just insisted that the peace process be "Afghan-led" and "Afghan-owned".
- But it is felt that the current efforts as the Moscow format meeting are not being "Afghan-led"; Russians or the Americans are taking the lead.
- India's participation, however, is crucial, even though it is at a non-official level.

ECONOMY

Central Board of the RBI

The RBI Board recently entered the news during the public spat between the central bank and the Finance Ministry. One of the reasons for the disagreement was the government's alleged threat of invoking **Section 7 of the RBI Act**.

Section 7 basically empowers the government to supersede the RBI Board and issue directions to the central bank if they are considered to be "necessary in public interest".

What is the RBI Board?

The RBI Board is a body comprising officials from the central bank and the Government of India, including officials nominated by the government. According to the RBI, the "general superintendence and direction of the affairs and business of the RBI is entrusted to the Central Board" and the Board exercises all powers and does all acts and things that are exercised by the RBI. The Board is also to recommend to the

government the design, form and material of bank notes and also when and where they can serve as legal tender.

The Board consists of official directors, who include the Governor and up to four Deputy Governors, non-official directors, who include up to ten directors from various fields and two government officials, and one director from each of four local boards of the RBI.

- The Governor and Deputy Governors hold office for not more than five years, the ten directors nominated by the government hold office for four years, and the government officials are to hold a term on the RBI Board as long as the government sees fit.
- According to the RBI Act, the director of the RBI Board cannot be a salaried government official (except for the ones specifically nominated by the government), be adjudicated as insolvent or have suspended payments to creditors, an officer or employee of any bank (again, this does not include the government nominee), or, interestingly, "is found lunatic or becomes of unsound mind".

When does the Board meet?

The Governor has to call a Board meeting at least six times in a year, and at least once each quarter. A meeting can be called if a minimum of four Directors ask the Governor to call a meeting. The Governor or, if for any reason unable to attend, the Deputy Governor authorised by the him to vote for him, presides the Board meetings. In the event of split votes, the Governor has a second, or deciding vote.

Centre to roll out new Ease of Doing Agri-Business Index

- States may soon start receiving extra funding for the Agriculture Ministry's flagship schemes on the basis of their performance in encouraging agri-business, especially with regard to marketing, land and governance reforms.
- The Centre expects to roll out a new Ease of Doing Agri-Business Index early next year, which will rank the States on the basis of such reforms, as well as their investment in agriculture, increased productivity, reduction of input costs, and risk mitigation measures.
- "In future, the Ministry may consider rewarding the higher performing States [both in absolute and incremental terms] by linking the performance with allocation from flexi funds made available in various flagship schemes of this Ministry," says a recent concept note for the Index.
- NITI Aayog already brings out a Agricultural Marketing and Farm Friendly Reforms Index, rating States on their implementation of such reforms. In the initial edition of that Index in 2016, Maharashtra stood first in the rankings, followed by Gujarat.
- The proposed index has a wider ambit, but the focus is still on reforms, with marketing reforms (25%) and governance and land reforms (20%) carrying almost half of the weight of the parameters in its scoring system.
- As agriculture is a State subject, the success of policies and reform initiatives proposed at the Centre is dependent on implementation by the States. "To ensure that reform agenda of the government is implemented at a desired pace by all State governments, there is a need to develop a competitive spirit between the States," says the note.

RBI unlikely to support NBFC's to increase liquidity

- Amid growing demand for liquidity support for non-banking finance companies, the Reserve Bank of India (RBI) is unlikely to provide any special support to the sector, though it will continue to provide funds to the banking system as liquidity deficit in the system is a concern.
- According to sources, the RBI is of the view that bigger NBFCs that have high ratings from rating agencies are not facing any liquidity issues.
- It is the mid-sized and smaller NBFCs, mostly housing finance firms, that will face some issues. According to market estimates, about Rs.1.5 lakh crore of commercial paper face redemption this month, a bulk of which are issued by NBFCs.
- NBFCs can avail refinance facility from SIDBI or National Housing Bank and can also sell loans to banks. NHB has recently increased its refinancing limit by Rs. 6,000 crore to Rs. 30,000 crore to eligible institutions, including housing finance companies, for the July 2018-June 2019 period.
- The liquidity issue for NBFCs, along with other issues like capital requirement for banks and more dividend from RBI to the government, has been a bone of contention between the central bank and the Finance Ministry.
- The Centre has cited the never-used provision under section 7 of the RBI Act to initiate consultations with RBI. Under this section, the government can issue directions to RBI.

Experts say RBI reserves belong to the centre ultimately

- The RBI and the government seem to have a problem figuring out what belongs in their respective domains.
- At stake principally, is the disposition of sums parked by the RBI to the tune of roughly Rs. 9,22,000 crore of its surplus under two heads: Foreign Currency and Gold Revaluation Account and the Contingency Fund Account.

- The former comes to Rs. 6,90,000 crore and the latter, another Rs. 2,32,000 crore. The government wants to lay claim to all of it or at least the amount that is accounted for under the head, 'Contingency Fund'.
- The RBI thinks otherwise and hints darkly of the 'wrath of the financial markets' if the government has its way. The policy experts too, have jumped into the fray with prognostications of rampant inflation and other dire consequences for the economy if the government has its way.
- To be fair, the position was reiterated in later years by another RBI-appointed expert committee headed by the noted finance professional and a former member of the RBI Central Board of Governors, Y.H. Malegam.
- Even this committee was tasked to come up with an answer to the accounting question of how to present the future balance sheets of RBI! Put differently, an important question of deciding the disposition of future surpluses of the RBI was dismissed as an arcane aspect of debits and credits of financial transactions of RBI.
- Common citizens and private corporations alike, had suffered a loss on their imports as the RBI intervention had the effect of jacking up the rupee cost of their imports. The litre of petrol that you bought at the petrol bunk cost a little bit extra because RBI's intervention in the forex market led to the rupee suffering a higher depreciation in its value relative to the dollar, said an expert.

NIA gives report on seizure of fake currencies

- Two years after demonetisation, the fake currency notes seized so far are not of a high quality, a probe by the National Investigation Agency (NIA) has found.
- Another Home Ministry official said the network of same fake currency operators was still intact as two years ago, that pushed fake notes from the Bangladesh border. But there was not much evidence to link it to Pakistan yet. A reason cited by the government for scrapping Rs. 500 and Rs. 1,000 notes in 2016 was to wipe out fake notes.
- India had accused Pakistan's Inter-Services Intelligence (ISI) of printing high-quality fake notes and channelling it into India. Agencies suspected that certain security features of Rs. 500 and Rs. 1,000 notes were compromised as the supplier of raw currency notes, ink and silver thread was same for India and Pakistan.
- The NIA and the Rapid Action Battalion (RAB), the anti-crime and anti-terror unit of Bangladesh, signed a memorandum of understanding (MoU) in 2015, to share intelligence on fake notes and other terrorist modules in real time.

Though there was no definite account of the number of fake notes in circulation with the government when demonetisation was announced, a study done by the Indian Statistical Institute (ISI), Kolkata, in 2015, had said that at any given point of time, fake notes of Rs. 400 crore face value were in circulation.

SCIENCE & TECHNOLOGY

ISRO to launched communication satellite GSAT-29

- Indian Space Research Organization launched the communication satellite GSAT-29 from the Satish Dhawan Space Centre in Sriharikotta.
- The ISRO's heaviest ever launch vehicle GSLV Mark-III is set to inject the satellite into a geostationary transfer orbit.
- The satellite GSAT-29 has high throughput communication transponders in the Ka and Ku bands. It can augment high speed data transfer in India's far flung and remote areas. It weighs 3,423 kg during lift off and has an operational life of over ten years.
- The mission assumes significance, as its success would qualify the national space agency's fifth generation launch vehicle GSLV-Mark Three, for regular launches of four-tonne class payloads. It is also set to provide a further fillip, to the prestigious Chandrayaan-II mission, that is being planned early next year.

ISRO invites riders to Venus

- An 18-month-old pitch for what could be the first Indian orbiter mission to Venus has just been refreshed and relaunched, opening it up now for international experiments.
- Tentatively marking the yet to be named 'Mission Venus' for mid-2023, the Indian Space Research Organisation (ISRO) plans to study the planet from an elliptical orbit that is closest to Venus at 500 km and 60,000 km at the farthest end — similar to its Mars Orbiter Mission (MOM) of 2013.
- The latest announcement opportunity (AO) does not specify the weight of the spacecraft; it plans to send up instruments or payloads totally weighing 100 kg. (MOM's payloads weighed nearly 15 kg.)
- Currently being handled by the Space Science Programme Office, the entire project must be vetted by the Advisory Committee on Space Sciences and approved by the Space Commission and eventually the government.
- From the Moon orbiter mission Chandrayaan-1 in 2008 and the Rs. 450 crore MOM, the Venus voyage if approved would be ISRO's third interplanetary dash.

- ISRO says that it may lower the orbit of its future Venus spacecraft after a while for sharper observations. According to an informed ISRO official, the Venus mission would be comparable to the phenomenally popular MOM in terms of its the orbit and the cost.

LIGO to Publish Paper on Analysis Techniques

- The LIGO (Laser Interferometer Gravitational-Wave Observatory) Scientific Collaboration detected gravitational waves in 2015.
- It has recently announced that it would publish a detailed explanation of how it analyses the noise in its detectors.

What was the 2015 discovery?

- Gravitational waves are ripples in the fabric of space-time, arising from the merger of a pair of black holes in distant space.
- LIGO's 2015 announcement of the discovery of gravitational waves was an exciting finding in physics for decades.
- The discovery confirmed a prediction made by Einstein.
- It stated that space-time itself can squeeze and stretch in rhythmic waves, when deformed by cataclysmic events like collision of black holes.
- The collaboration's founders were awarded the Nobel prize in physics in 2017. Click [here](#) to know more.

What were the further observations?

- Since detecting the binary black hole (BBH) merger, the LIGO Scientific Collaboration (LSC) has made six such observations.
- Five of these were mergers of black holes in very different locations in space and with very different characteristics such as mass.
- Another was the merger of a pair of so-called neutron stars (binary neutron stars).
- The last few detections have been done in conjunction with another detector, Virgo (Italy-based).

What is the need for LIGO's explanation now?

- **Challenge** - LIGO's detectors aim to measure a shortening of space equivalent to about a thousandth of the width of a proton.
- This sort of measurement is swamped by natural thermal vibrations, known as noise.
- This makes picking out the signal from a gravitational wave tricky and challenging.
- The collaboration thus used sophisticated analysis techniques to remove this noise.
- Also, after the first discovery, the LSC made public its data on these techniques.
- **Dispute** - Analysing the data, in 2017, a group of scientists questioned the validity of the first detection.
- Weeding out noise from the signal is crucial in any such experiment.
- Some claimed that this had not been done properly by the LSC.
- They argued that the two detectors belonging to LIGO were correlated and that this led to a correlation in the noise factor.
- Other scientific investigations also uncovered a number of irregularities in the data.
- **LSC** - After a long silence, recently, the LSC has thus put up a clarification on its website.
- The LIGO collaboration is learnt to be in the process of preparing their paper clarifying their approach and explaining the analysis techniques.

NGT ruling on INO Observatory

Why in news?

The National Green Tribunal (NGT) upheld the environmental clearance granted to the India-based Neutrino Observatory (INO) recently.

What does the ruling say?

- The application for environmental clearance was referred to Environmental Appraisal Committee (EAC) by the State Environment Impact Assessment Authority of Tamil Nadu as it preferred the centre to assess a project of this nature.
- Environment ministry (MoEFCC) gave the clearance on March 2018, but it was challenged in NGT by Pooulagin Nanbargal.
- The INO project was approved under **category B**, even though it is about to located near an eco-sensitive national park.
- Thus the organization objected to the category under which the project was cleared.
- However, the NGT held that the environment ministry has the legal and technical competence to assess the INO project and upheld the environmental clearance.
- The judgment states that it was correct on the part of the EAC and the ministry to appraise the project at their level.

- However, the court reiterated that the INO must also obtain approval from National Board for Wildlife.
- This is because the proposed site is about 4.9 km from Mathikettan Shola bird sanctuary bordering Kerala.
- Any major activity within 5km from any wildlife sanctuary requires a specific approval by the National Board for Wild Life.
- Also, NGT ruled that specific or general condition or recommendation made by the committees and expert groups on Western Ghats will be mandatorily made applicable in the current project of INO.

What is the INO project?

- It is a particle physics research project to primarily study the elusive sub-atomic particles called neutrinos.
- Neutrinos are extremely tiny elementary particles that are omnipresent in universe which carries no electric charge.
- It is considered to be the second most abundant particle in the universe after the photon, or light particle.
- Yet, they are very difficult to detect because they pass seamlessly through all kinds of matter, unimpeded and undetected.
- Its rest mass is almost zero (1 millionth of an electron).
- It interacts only via weak short range subatomic forces and gravity.
- Hence its detection needs high-end instruments and an environment that is effectively shielded from other radiant interference.
- Hence, a cavern is being carved out at the depth of 1,300 meters (4,300 feet) below the Western Ghats stretch in Bodi West Hills in Theni district for establishing the research site.
- An underground laboratory will be located there, nearly 1.5 km below the Earth's surface, where a giant neutrino detector is to be placed.
- The overhead rock will effectively shield it from natural cosmic radiation from outside.
- Many countries are carrying out research on neutrinos, believing that it holds important clues to some basic questions on the universe.

When will it operationalize?

- The original timeline had envisaged experimental work starting from 2017, later advanced to 2020.
- It is now unlikely to begin before 2025, even if construction starts next year.
- Construction of the underground facility would take at least 5 years and hence the project cost too is likely to escalate.

What are the challenges?

- **Environment** - It has had to move from its initially proposed location, because the nearby Mudhumalai National Park had been declared a tiger reserve during the same time.
- Hence this second site was selected.
- **Litigations** - The project has been mired in all kinds of trouble such as litigation, public protests, opposition from NGOs and political parties, including the recently ended litigation with NGT.
- **Red Tapes** - Bigger uncertainties in terms of government approvals, meanwhile, are still to come.
- The project applied for clearance from the National Board of Wildlife only in January this year and that approval is still awaited.
- Last year, the INO was told it would also need building approval from relevant state government agencies.
- The building plan is being prepared and an application is likely to be moved later this month.
- It is unclear how much time it will take to get that approval.
- The Tamil Nadu government, on its part, has taken its time deciding on approvals for the project.
- **Cost** - The Union government had, in 2015, approved a budget of Rs 1,583 crore for the project.
- That budget was based on cost assessments done in 2012.
- It is estimated the project would now cost at least 25% more than that amount.