



GENERAL STUDIES-1

INDIAN CULTURE

2018 PRITZKER PRIZE

Winner: Balkrishna Doshi

He has built more than a hundred buildings that reflect his investment in local materials, social change and the environment. He is the first Indian to receive the award.

The prize

The prize is known as the Nobel for architects (highest honour). The international prize, which is awarded each year to a living architect/s for significant achievement, was established by the Pritzker family of Chicago

8TH THEATRE OLYMPICS

Context: Jaipur is all set to be one of the co-hosts of the 8th Theatre Olympics, the largest international theatre festival to be held for the first time in India.

Organizers: The Jaipur chapter of Theatre Olympics 2018 is organised by the National School of Drama (NSD) under the aegis of Ministry of Culture, Govt. of India in collaboration with Ravindra Manch Society and Art & Culture Department, Government of Rajasthan.

About Theatre Olympics:

- The Theatre Olympics was established in 1993 in Delphi, Greece, on the initiative of the famous Greek theatre director, Theodoros Terzopoulos.
- It is an international theatre festival, which is presenting some of the achievements of the greatest theatre practitioners from around the world.

GEOGRAPHY

GEO MAGNETIC STORM

Context: There were reports that Earth will be hit by a massive magnetic storm on March 18. However, National Oceanic and Atmospheric Administration (NOAA) has found that there was no basis for recent reports saying Earth would be hit by a massive geomagnetic storm.

What are Geomagnetic Storms?



Geomagnetic storms are caused when events such as solar flares can send higher than normal levels of radiation towards Earth. This radiation interacts with the Earth's magnetic field causing a geomagnetic storm.

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Effects of Geomagnetic storms:

Effects from the geomagnetic storm can range from the appearance of auroras or the northern and southern lights to disruptions in communications systems due to high radiation. This would make it difficult to communicate with others on Earth.

Classification of Geomagnetic storms:

Geomagnetic storms are classified according to a scale that measures the effect that storms will have.

- At its safest level, a G1 storm affects power grids by causing weak fluctuations, minor impacts on satellite operations, and causes the northern and southern lights to occur.
- At its most extreme, G5, there would be voltage control problems with some grid system collapses or blackouts, radio waves wouldn't be able to travel for one to two days, low-frequency radio would be out for hours, and the auroras would be able to be seen at lower latitudes than usual.

GENERAL STUDIES-2

POLITY

KARNATAKA GOVT. UNVEILS STATE FLAG

Context: Karnataka government has unveiled the State flag for Karnataka. If approved by the Centre, Karnataka will be the second State to have a flag after Jammu and Kashmir. The proposal will be now sent to the Union Home Ministry for approval since a State has no powers to announce its own flag.

The flag:

- The red-white-yellow flag has the State emblem at the centre. The State flag will fly below the national flag as prescribed.
- In the tri-colour Stage flag, white symbolises peace with State emblem. While yellow symbolises the auspiciousness and well-being of Kannadigas, the red colour symbolises courage.

Are states permitted to have their own flags?

In S.R. Bommai v/s Union of India (Supreme Court 1994) case, the Supreme Court has declared that federalism is a basic feature of the Constitution and States are supreme in their sphere. This being the Constitutional position, there is no prohibition in the Constitution for the State to have its own flag. However, the manner in which the State flag is hoisted should not dishonour the national flag. It has to be always below the national flag. The national flag code specifically authorises use of other flags subject to the regulation by the court. So, State flag is not unauthorised.

MAHANADI WATER DISPUTES TRIBUNAL

Context: The Ministry of Water Resources, River Development and Ganga Rejuvenation has issued a notification constituting the Mahanadi Water Disputes Tribunal. The Tribunal will have its headquarters at Delhi.

The Tribunal will comprise of:

- Justice A.M. Khanwilkar, Supreme Court Judge (Chairman).
- Justice Ravi Ranjan, Patna High Court Judge.
- Justice Indermeet Kaur Kochhar, Delhi High Court Judge.

Background:

The Tribunal has been constituted following orders of the Supreme Court. The Government of Odisha had sought to refer the water dispute regarding the inter-state river Mahanadi and its river valley to a Tribunal for adjudication under the Inter-State River Water Disputes Act, 1956.



Legal provisions in this regard:

- The tribunal will be formed according to the provisions of the Inter-State River Water Disputes (ISRWD), 1956.
- It will have a chairperson and two other members nominated by the Chief Justice of India from among the judges of the apex court or high courts.
- As per provisions of the ISRWD Act, 1956 the Tribunal is required to submit its report and decision within a period of 3 years which can be extended to a further period not exceeding 2 years due to unavoidable reasons.

What's the dispute?

Odisha and Chhattisgarh are locked in a dispute over the Mahanadi waters since the mid-80s. Odisha claimed that Chhattisgarh government has been constructing dams in the upper reaches of the Mahanadi, depriving its farmers who are heavily dependent on the rivers waters. Chhattisgarh has been against the setting up of a tribunal, and argued that the water sharing agreement was with the erstwhile Madhya Pradesh government, before the state was carved out in 2000.

What else is needed?

To chalk out the future course of action in view of the disputes regarding the use of Mahanadi river water, a well-rounded strategy that includes both the people and policymakers is needed. The strategy must allow for dialogue by rebuilding trust and should look at arbitration and negotiation as methods of conflict resolution. It is necessary to evolve a strategy that optimises the rational usage of Mahanadi water to benefit people from both Chhattisgarh and Odisha, coupled with the implementation of a multi-stakeholder forum that finds peaceful solutions and minimises areas of contention in a negotiable and consensual manner.

GOVERNANCE ISSUES AND POLICIES

IMPRINT-II

Why in news?

To boost research and innovation in the country, the Central Government has sanctioned a sum of Rs. 1000 crore for the phase two of the Impacting Research Innovation and Technology (IMPRINT) India programme.

Details

Under the IMPRINT-II, a fund is being created by the Department of Science and Technology and Ministry of Human Resource Development together, in which participation will come from industry and other interested Ministries.



- The initiative is a pan-IIT and IISc joint collaboration to develop a blueprint for research of immediate relevance to society with reference to the impact on the standard of living in rural/urban areas.

TRANSFORMATION OF 115 BACKWARD DISTRICTS

Why in news?

A meeting to review the progress of the transformation of 115 Aspirational Districts was recently chaired by the cabinet secretary. The meeting was attended by the Prabhari Officers, the officer in-charge coordinating the exercise for transformation of 115 Aspirational Districts.

Details

The Government, in 2017, identified 115 backward districts for rapid transformation. The government's focus is to work with states to bring a transformative change in these backward areas through rapid government-anchored programmes and interventions by 2022, the 75th year of India's independence.

Prabhari officers: For each of the Districts, a senior official in the rank of Additional secretary and Joint secretary has been nominated as Prabhari officer.

Role of Prabhari officers

Prabhari officers would take it up as a challenge and succeed in their mission by making a difference in the lives of millions of citizens in these districts. Prabhari officers would form a team with State representatives and bring convergence in their effort.

Prabhari officers will assist the District administration in sharing the vision for 2022, to ensure the convergence of the efforts of central and state government and to set up a robust mechanism to monitor the improvements in key outcomes in the district.

Funding:

Funds are not a constraint in this program since large funds are available under different Schemes. The officers will explore the availability of funds in District Mineral funds, wherever available for this purpose. In addition, they will also use flexi-fund which are significant in amount and are available under different Schemes of the Government.

Significance

The 115 districts, including 35 affected by left-wing extremism, were selected on parameters like deprivation, health & nutrition, education and infrastructure.



If these districts are transformed, there would be tremendous improvement in the internal security environment of the country.

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RAJASTHAN PASSES BILL TO GIVE DEATH PENALTY FOR CHILD RAPE

Context: Rajasthan has passed a Bill providing for death penalty to those convicted of raping girls of 12 years and below. The State Assembly passed the Criminal Laws (Rajasthan Amendment) Bill, 2018 seeking to amend the Indian Penal Code with the insertion of new provision by voice vote.

Key facts:

- The Bill is aimed at protecting the girl child by laying down a deterrent punishment, including death sentence, to the offenders.
- The Bill provides for capital punishment or rigorous imprisonment ranging between 14 years and lifelong incarceration.
- It also makes a similar provision for gang-rape of a girl child, while laying down death penalty or imprisonment from 20 years to lifelong incarceration for those convicted of the offence. Each of the persons constituting the gang will be deemed to be guilty of the offence.
- The Bill will become a law after it gets the Presidential assent.

Background:

According to the National Crime Records Bureau's 2016 report, the cases of crimes against children have seen a steady increase in Rajasthan. Rajasthan has become the second State, after Madhya Pradesh, to pass a Bill providing for death penalty to those convicted of raping girls of 12 years and below.

PASSIVE EUTHANASIA LEGALISED BY SUPREME COURT

Context: The Supreme Court has delivered a landmark judgment allowing "living will" where, an adult in his conscious mind, is permitted to refuse medical treatment or voluntarily decide not to take medical treatment to embrace death in a natural way. In Its judgment, the court has laid down a set of guidelines for "living will" and defined passive euthanasia and euthanasia as well.

Passive Euthanasia: When doctors don't provide, or remove patients from, lifesustaining treatment. Includes: Disconnecting life-support machines, feeding tubes, not carrying out life-saving operations, not providing life-extending drugs, Non-treatment not seen as cause of death; patient understood to have died because of underlying condition.

What is advance medical directive or living will?

It is a medical power of attorney that allows an individual to appoint a trusted person to take health care decisions when the patient is not able to take such decisions. The trusted person is allowed to interpret the patient's decisions



based on their mutual knowledge and understanding. The trusted person can decide on the patient's behalf how long the medical treatment should continue when the patient is unconscious or in a coma state is not in a position to decide.

Who is allowed to execute or draw up the will?

According to the Supreme Court rules, it can be executed only by an adult who is of a sound and healthy state of mind and in a position to communicate, relate and comprehend the purpose and consequences of executing the document.

- It must be voluntarily executed and should have characteristics of an informed consent given without any undue influence or constraint.
- It shall be stated clearly as to when medical treatment may be withdrawn or no specific medical treatment shall be given which will only have the effect of delaying the process of death that may otherwise cause the patient pain, anguish and suffering and further put him or her in a state of indignity.
- In order to overcome the difficulty faced in case of patients who are unable to express their wishes at the time of taking the decision, the concept of advance medical directives emerged in various countries.

How should the will be recorded, preserved?

- The document should be signed by the executor in the presence of two attesting witnesses, preferably independent, and counter-signed the jurisdictional Judicial Magistrate of First Class (JMFC) so designated by the concerned district judge.
- The JMFC shall preserve one copy of the document in his office, keep another in digital format, forward one copy of the document to the registry of the jurisdictional district court, inform the immediate family members of the executor.
- A copy be handed over to the competent officer of the local body. A copy of the directive be handed over to the family physician, if any.

When and by whom can it be given effect to?

In the event the executor becomes terminally ill and is undergoing prolonged medical treatment with no hope of recovery and cure of the ailment, the treating physician, when made aware about the advance directive, shall ascertain the genuineness and authenticity thereof from the jurisdictional JMFC before acting upon the same.

- The document should be given effect to only after being fully satisfied that the executor is terminally ill and is undergoing prolonged treatment or is surviving on life support and that the illness of the executor is incurable or there is no hope of him/her being cured.
- The physician or hospital where the executor has been admitted for medical treatment shall constitute a medical board that shall visit the patient and form an opinion whether to certify or not to certify carrying out the instructions of withdrawal or refusal of further medical treatment.



- The Chairman of the board nominated by the collector, that is, the Chief District Medical Officer, shall convey the decision of the board to the jurisdictional JMFC before giving effect to the decision to withdraw the medical treatment administered to the patient.
- The JMFC shall visit the patient at the earliest and, after examining all aspects, authorise the implementation of the decision of the board.
- It will be open to the executor to revoke the document at any stage before it is acted upon and implemented.

What if the board refuses the permission?

If permission to withdraw medical treatment is refused by the Medical Board, it would be open to the patient or his family members or even the treating doctor or the hospital staff to approach the high court and its chief justice will have to constitute a division bench to decide upon case.

Right to Die:

Right to die peacefully is part of Fundamental Right to Life guaranteed under Article 21 of the Constitution. Article 21 provides that “no person shall be deprived of his life or personal liberty except according to procedure established by law”.

WELFARE SCHEMES AND DEVELOPMENTAL GROUPS

LAQSHYA PROGRAMME

Context: The Union Health Ministry has announced the launch of LaQshya, a programme aimed at improving quality of care in labour room and maternity operation theatre.

About the Programme:

The programme aims at implementing ‘fast-track’ interventions for achieving tangible results within 18 months.

Strategy: Under the initiative, a multipronged strategy has been adopted, including improving infrastructure upgradation, ensuring availability of essential equipment, providing adequate human resources, capacity building of healthcare workers and improving quality processes in the labour room.

Guidelines include: Ensuring privacy for mothers-to-be, providing a comfortable position during delivery, no-tolerance policy towards verbal or physical abuse on women and no demand of gratuitous payment by the staff.



LaQshya certification: A healthcare facility achieving 70% score on NQAS will be declared 'LaQshya' certified. Facilities scoring over 90, 80 and 70% will get platinum, gold and silver badges respectively.

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Incentives: Facilities achieving NQAS certification and having 80% satisfied beneficiaries will be given monetary incentive with medical college hospitals getting Rs 6 lakh and Rs 3 lakh for district hospitals.

NATIONAL COMMISSION FOR PROTECTION OF CHILD RIGHTS (NCPNR)

Context: The exercise of conducting social audit of Child Care Institutions has been initiated by the National Commission for Protection of Child Rights (NCPNR). This is in pursuance of the directions of the Hon'ble Supreme Court of India in the matter of Exploitation of Children in Orphanages in State of Tamil Nadu vs. UOI & Ors.

Child care institutions:

The Government has enacted the Juvenile Justice (Care and Protection of Children) Act, 2015 in order to further improve and strengthen the condition of rehabilitation homes.

- Under the JJ Act, 2015 several provisions have been included to improve the condition of Child Care Institutions (CCIs) including those housing children in conflict with law by providing for inspections of these CCIs by Juvenile Justice Board; prescribing various rehabilitation and reintegration services including skill development, recreational facilities, mental health interventions, etc.

About NCPNR:

- The National Commission for Protection of Child Rights (NCPNR) is a statutory body established under the Commission for Protection of Child Rights Act in December 2005.
- The commission works under the aegis of Min. of Women and Child development.
- Its Mandate is "to ensure that all Laws, Policies, Programmes, and Administrative Mechanisms are in consonance with the Child Rights perspective as enshrined in the Constitution of India and the UN Convention on the Rights of the Child.
- Definition of a child: As defined by the commission, child includes those up to the age of 18 years.



INDIA AND ITS INTERNATIONAL RELATIONS

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AVOIDANCE OF DOUBLE TAXATION

Context: The Union Cabinet has approved an Agreement for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to taxes on income between India and Iran.

Benefits of the agreement:

- The Agreement will stimulate flow of investment, technology and personnel from India to Iran & vice versa, and will prevent double taxation.
- The Agreement will provide for exchange of information between the two Contracting Parties as per latest international standards. It will thus improve transparency in tax matters and will help curb tax evasion and tax avoidance.

BEPS:

The proposed Agreement also meets treaty related minimum standards under G-20 OECD Base Erosion & Profit Shifting (BEPs) Project, in which India participated on an equal footing.

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

What is DTAA?

A DTAA is a tax treaty signed between two or more countries. Its key objective is that tax-payers in these countries can avoid being taxed twice for the same income. A DTAA applies in cases where a tax-payer resides in one country and earns income in another. India has DTAAAs with more than eighty countries, of which comprehensive agreements include those with Australia, Canada, Germany, Mauritius, Singapore, UAE, the UK and US.

Why is it important?

DTAAs are intended to make a country an attractive investment destination by providing relief on dual taxation. Such relief is provided by exempting income earned abroad from tax in the resident country or providing credit to the extent taxes have already been paid abroad. DTAAAs also provide for concessional rates of tax in some cases.

Legal provisions in this regard:

In so far as India is concerned, the Central Government is authorized under Section 90 of the Income Tax Act, 1961 to enter into an Agreement with a foreign country or specified territory for avoidance of double taxation of income, for exchange of information for the prevention of evasion or avoidance of income-tax chargeable under the Income-tax Act, 1961.



INDO-FRENCH KNOWLEDGE SUMMIT

Context: The first ever Indo-French Knowledge Summit was held recently at New Delhi. The summit coincided with the state visit of French President Emmanuel Macron to India.

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Outcomes of the summit:

The summit ended with a landmark agreement on mutual recognition of educational qualifications between the two countries and a record 15 other MoUs between universities and research institutions on joint initiatives and partnerships.

Significance of mutual recognition of educational qualifications:

Agreement on mutual recognition of academic qualifications will go a long way in boosting the educational relationship between the two countries and will encourage mobility of students from both the countries by facilitating possibilities for them to continue their studies in the other country and would also promote excellence in higher education through cooperation, university and research exchanges.

Franco-Indian Education Trust:

A Franco-Indian Education Trust was also unveiled at the closing session of the summit. It will be funded by the Indian industry and French Companies in India to offer educational scholarships and merit based financial support to Indian students.

About the summit:

The Knowledge Summit is the First Franco-Indian Summit for university, scientific and technology cooperation with the broader objective to design a roadmap of Franco-India cooperation for the next five years, in collaboration with companies.

- The objective of the Knowledge Summit is to design a roadmap of Franco-Indian cooperation for the next five years, in collaboration with companies.
- This event offers a common moment for a common goal; increase student mobility, enlarge Research & Development collaborations and link campuses to companies by focusing on employability.
- The summit was organized by the French Embassy in India and co-hosted by the Ministry of Human Resource Development, Government of India.
- More than 350 people from nearly 80 Indian Institutions and 70 French Institutions along with key enterprises participated in the Summit.

INDIA- IRAN TIES

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Why in news?

During his recent India's visit, Iran's President has expressed willingness to share its vast oil and natural gas resources with India for the prosperity of its people and offered to simplify visa norms to strengthen the relations between the two countries. This visit took place in the wake of a huge push back against Tehran from some of its Arab neighbours, Israel and the Trump administration.

Geopolitical tensions

While the situation in Afghanistan is worsening, Iran's relations with Saudi Arabia remain tense.

Russian intervention has stabilised Syrian President Bashar al-Assad's position. However, the fragility in the region was visible in the recent shooting down of Iranian drone by Israel, and downing of an Israeli Air Force jet by Syrian air defence.

Iran has also increased its role in Iraq, and activated links with the Taliban in Afghanistan, adding to the U.S.'s growing impatience and unhappiness.

A Backgrounder to India and Iran relationship

It was during the late 1990s and the early years of the last decade that both countries achieved a degree of strategic convergence. Ties between the two countries gained a new momentum in 2001 when 'Tehran Declaration' was signed which signifies the areas of possible cooperation.

In 2003 the two nations signed "The New Delhi Declaration". Ever since, the two countries have developed trade relations in several areas, mainly in Iranian crude oil. India has been a significant importer of Iranian oil, with Tehran emerging as the country's third largest oil supplier.

Ongoing Infra projects

- A highway between Zaranj and Delaram is being built with financial support from India. This highway will give access to Afghanistan through Iran.
- The Chabahar port (situated in the Sistan-Balochistan province) has also been jointly financed by Iran and India. It will give India access to the oil and gas resources in Iran and the Central Asian states. It is also viewed as a move to counter Pakistan's Gwadar port, which helps China extend its influence across the Arabian sea and Indian Ocean. The first phase of the port was inaugurated in December 2017.
- With an objective of increasing Trade connectivity the International North-South Transport Corridor is planned. It is the ship, rail, and road route for moving freight between India, Russia, Iran, Europe and Central Asia.



Strained relationship

After the U.S. declared Iran as part of the 'axis of evil', Iran's President Mahmoud Ahmadinejad accelerated Iran's nuclear enrichment programme. This led to more sanctions against Iran and India's economic engagement with Iran was impacted. India's vote against Iran in the International Atomic Energy Agency (IAEA) generated unhappiness in Tehran.

The JCPOA, spearheaded by the Obama administration, eased sanctions, helping India increase its oil imports from Iran and reactivate work at Chabahar. But with Mr. Trump, Iran's uncertainties are increasing.

JCPOA (Joint Comprehensive Plan of Action)

JCPOA is an international nuclear deal agreed between Iran and P5+1 (China, France, UK, USA, Russia and Germany) and EU. The initial framework lifted economic sanctions on Iran and in return Iran would restrict country's controversial nuclear energy programme. The JCPOA was unanimously supported by the United Nations Security Council enabling Security Council sanctions to be lifted.

Today's problem

The U.S. has imposed multiple and often overlapping sanctions on Iran pertaining not only to nuclear activities but also to missile testing, human rights, and terrorism. Since Trump's election, the threat of the U.S. snapback has increased. It means that third country companies may now attract U.S. sanctions if they commit any relations with Iran.

In addition to it, unrest took place in Iran with growing corruption. Part of the reason for the economic grievances is the slower than promised sanctions relief. US's anti-Iran sentiment has been backed by Israel and Saudi Arabia. Both blame Iran for aggressive behaviour — the former with regard to the growing influence of Iran and Hezbollah in Syria and the latter for the prolonged war in Yemen which was initiated as a quick operation in 2015 by the Crown Prince to restore President A.M. Hadi.

Russia, China, and the European countries have indicated their full support for the JCPOA.

Where does it leave India's relations?

India conveyed its support for the full and effective implementation of the JCPOA. India also expressed the need for strengthening consultations on Afghanistan, and enhancing regional connectivity by building on the Chabahar.

MoUs were signed relating to avoidance of double taxation, visa simplification, cooperation in diverse fields including agriculture, traditional



systems of medicine, health and medicine, postal cooperation, trade remedial measures

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Unresolved issues

The negotiations on the Farzad-B gas field remain stuck, with both sides blaming the other for shifting the goalposts. It remained on paper because of Iranian unhappiness over India's stand in the IAEA.

- There was just a talk about an aluminium smelter plant and a urea plant to build up Indian investments in the Chabahar free trade zone.
- The railway link has been mentioned in the context of connectivity to Afghanistan but the economic rationale for the \$2 billion investment has been missing.
- An agreement on exploration of a rupee-rial arrangement was made which could provide an alternative channel for economic and commercial transactions in case of U.S. sanctions. The sanctity of this will need to be tested.
- Trade between the two countries has hovered around \$10 billion, with two-thirds of it accounted for in terms of oil imports from Iran while in contrast, that between India and the United Arab Emirates is \$60 billion.

In conclusion

The near-term developments in its neighbourhood are a priority for Tehran even as India tries to find a balance with its stated preference to develop closer ties with both the U.S. and Israel.

India and Iran are looking to swiftly conclude a preferential trade agreement and a bilateral investment treaty. Newly relaxed visa norms announced by Iran in addition to India's proposal for Indian businesses to invest in rupees in Iran are all moves in the right direction.

Nonetheless, they may be insufficient to cement commercial ties if USA sanctions do return.

India should give its full support for the effective implementation of the JCPOA. Only successful implementation of the JCPOA over a period of time can create the political space for additional negotiations.

INTERNATIONAL AFFAIRS

EUROPEAN BANK OF RECONSTRUCTION AND DEVELOPMENT (EBRD)

Why in news?

India has got the go-ahead to join the European Bank of Reconstruction and Development (EBRD). India will become EBRD's 69th member, enabling Indian companies to undertake joint investments in regions in which the EBRD operates.



The EBRD is owned by 65 countries and two intergovernmental institutions: the European Union and the European Investment Bank (EIB).

Significance of membership

- Enhances India's international profile and promote its economic interests.
- Access to EBRD's Countries of Operation and sector knowledge.
- India's investment opportunities would get a boost.
- Increase the scope of cooperation between India and EBRD through co-financing opportunities.
- EBRD's core operations pertain to private sector development in their countries of operation.
- Increased economic activities would have the employment generating potential. It would also enable Indian nationals to get the employment opportunity in the Bank.

EBRD

The European Bank for Reconstruction and Development (EBRD) is an international financial institution that supports projects in over 30 countries, from eastern Europe to central Asia and the southern and eastern Mediterranean. Investing primarily in private sector clients whose needs cannot be fully met by the market, the EBRD promotes entrepreneurship and fosters transition towards open and democratic market economies.

- The mandate of the EBRD stipulates that it must only work in countries that are committed to democratic principles.
- Respect for the environment is part of the strong corporate governance attached to all EBRD investments.

EMERGENCY IN SRILANKA

Why in news?

Sri Lanka has imposed a nationwide state of emergency for the first time since the civil war era in response to days of violent unrest between Sinhalese and Muslim communities.

Who are Sinhalese?

They are an Indo-Aryan speaking, predominantly Theravada Buddhists, ethnic group native to the island of Sri Lanka. They constitute about 75% of the Sri Lankan population.

According to the 5th century epic poem Mahavamsa, and the Dipavamsa, a 3-5th century treatise written in Pali by Buddhist monks, the Sinhalese are



descendants of settlers who came to the island in 543 BCE from Sinhapura in India, led by Prince Vijaya.

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GOING GREY

The Financial Action Task Force (FATF) has decided to place Pakistan back on its watch list, or “grey list”, from June subjecting it to direct monitoring and intense scrutiny by the International Co-operation Review Group (ICRG) on terror financing. ‘Grey list’ comprises nations that are not doing enough to combat terrorism financing.

What is FATF?

The Financial Action Task Force (FATF) is an inter-governmental body established in 1989.

The objectives of the FATF:

- To set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.

The FATF is a “policy-making body” which works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas. The FATF has developed a series of Recommendations that are recognised as the international standard for combating of money laundering and the financing of terrorism and proliferation of weapons of mass destruction.

The FATF monitors the progress of its members in implementing necessary measures, reviews money laundering and terrorist financing counter-measures. It promotes the adoption and implementation of appropriate measures globally.

Why did FATF decide to place Pakistan on its watch list?

Pakistan had been on the same list from 2012 to 2015. The decision is overdue, given Pakistan’s blatant violation of its obligations to crack down on groups banned by the Security Council 1267 sanctions committee that monitors groups affiliated to the Taliban such as the Lashkar-e-Taiba, Jaish-e-Mohammed and the Haqqani network.

Their leaders like Hafiz Saeed and Masood Azhar continue to hold public rallies and freely garner support and donations. Both the LeT and JeM, continue to praise and claim credit for terror attacks in India. They have grown their bases in Pakistan, with fortress-like headquarters in Muridke and Bahawalpur that the authorities turn a blind eye to. By doing this, successive Pakistani governments shown disregard for the outcry against terrorism worldwide.

One violation was a Pakistani court’s bail to Zaki-ur-Rehman Lakhvi, LeT operational commander and a key planner of the November 2008 Mumbai terror



attacks. Under the 1267 sanctions ruling, banned entities can get no funds, yet Lakhvi received the bail amount, and the authorities have since lost track of him.

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What is UNSC resolution 1267?

UNSC resolution 1267 was adopted in 1999. Under this, the UNSC designated Osama bin Laden and associates as terrorists. It also established a sanctions regime to cover individuals and entities associated with Al-Qaida, Osama bin Laden and Taliban wherever located. Since US invasion of Afghanistan in 2001, the sanctions have been applied to individuals and organizations in all parts of the world.

Who supported this resolution against Pakistan?

The resolution against Pakistan was moved by the US because Islamabad is not doing enough to comply with anti-terrorist financing and anti-money laundering regulations. The initial push came from the US, UK, France and Germany to get Pakistan placed on the Financial Action Task Force's "grey" list. Earlier, the Saudi Arabia-led GCC and Turkey had objected to the listing. Western powers, including the US, France and UK, worked on the GCC to also join the consensus. China also removed its earlier objections to the move.

What are the implications for Pakistan now?

Once placed in the "grey list", countries face risk of downgrade by multilateral lenders like IMF, World Bank, ADB etc. And further reduction in their risk-rating by agencies. It may impede Pakistan's access to global markets to attract foreign investments at a time when its foreign reserves are dwindling and external deficits are widening.

Some kind of pressure is increased up with financial censures on its banks and businesses and targeted sanctions imposed against specific law enforcement and intelligence officials. If Islamabad will not comply with the obligations then the country runs the risk of being included on to the blacklist of the FATF that currently features Iran and North Korea. As a reaction to this move, authorities in Pakistan recently confiscated all properties of the Jamaat-ud-Dawa (JuD) and its charity arm, the Falah-e-Insaniat Foundation (FIF).

INTERNATIONAL SOLAR ALLIANCE

Context: India, a founding member of the International Solar Alliance, has said that membership of the body will be thrown open to all countries that want to join the grouping, with no restrictions on duration of sunlight or geographical location.

Who were eligible so far?



When the International Solar Alliance was announced in 2015, 121 nations situated between the Tropic of Cancer and the Tropic of Capricorn and receiving 300 days of sunlight were deemed eligible for membership.

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About ISA:

The Paris Declaration establishes ISA as an alliance dedicated to the promotion of solar energy among its member countries.

- The ISA's major objectives include global deployment of over 1,000GW of solar generation capacity and mobilisation of investment of over US\$ 1000 billion into solar energy by 2030.
- The alliance is a treaty-based inter-governmental organization.
- The alliance is also called International Agency for Solar Policy and Application (IASPA).
- The International Solar Alliance (ISA) is headquartered in India.

CP TRANS-PACIFIC PARTNERSHIP

Context: On March 8th trade ministers from 11 countries gathered in Santiago, the capital of Chile, to sign the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, or CPTPP.

What is CPTPP?

The CPTPP, also dubbed the TPP-11, was negotiated by Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. The revived deal will look to reduce tariffs in economies that together represent 500 million people and account for 13.5 per cent of global gross domestic product (GDP) – equivalent to a total of US\$10 trillion.

How is it different from TPP?

With the exclusion of the US, the CPTPP is putting on hold 20 provisions even as it incorporates the original TPP text by reference. Out of which, 11 of the suspended clauses are related to intellectual property (IP) originally inserted at the demand of US negotiators. The other nine involve areas like investment, financial services, copyright, telecommunication and government procurement.

What next?

Individual member countries will now begin their respective domestic ratification processes and the CPTPP will enter into force after at least 50% of the signatories complete that.

How does the CPTPP compare with RCEP?

- The 16-nation Regional Comprehensive Economic Partnership (RCEP) covers nearly 3.5 billion people and account for a third of the world's gross domestic product.

- The RCEP was conceived in 2012. If approved, the free trade agreement will be the largest trade bloc in terms of population. The RCEP countries make up 46% of the global population and are worth 24% of global GDP.
- RCEP seeks to bring into its fold China, Japan, India, South Korea, Australia and New Zealand and ASEAN countries. Seven of them are also CPTPP members, namely Australia, Brunei, Japan, Malaysia, Singapore, New Zealand and Vietnam.

Significance of the deal:

Even without the US, it's a hugely significant deal and could become a blueprint for future regional free trade agreements. Other nations have the chance to enter at a later time, if they so wish, and there have been suggestions Indonesia and even the United Kingdom may have some interest.

The TPP also comes at a time when major powers, such as the US, are reverting to protectionist trade policies. The head of policy at the Export Council of Australia, Heath Baker, said its symbolism was significant. It shows that despite the protectionism coming out of the US, there is still momentum to increasing shared prosperity through freer trade.

PHILIPPINES WITHDRAWS FROM ICC

Context: The Philippines is pulling out its support from the International Criminal Court (ICC) in protest against the “baseless” and “outrageous” attacks against the administration as well as violations of due process.

- The decision comes after the ICC said it could investigate Philippines President Duterte for alleged crimes against humanity involving extrajudicial killings resulting from his administration’s campaign against illegal drugs.

About ICC:

- The International Criminal Court (ICC), located in The Hague, is the court of last resort for prosecution of genocide, war crimes, and crimes against humanity.
- It is the first permanent, treaty based, international criminal court established to help end impunity for the perpetrators of the most serious crimes of concern to the international community.
- Its founding treaty, the Rome Statute, entered into force on July 1, 2002.
- Although the Court’s expenses are funded primarily by States Parties, it also receives voluntary contributions from governments, international organisations, individuals, corporations and other entities.
- The Court’s management oversight and legislative body, the Assembly of States Parties, consists of one representative from each state party.
- Each state party has one vote and “every effort” has to be made to reach decisions by consensus. If consensus cannot be reached, decisions are made



by vote. The Assembly is presided over by a president and two vice-presidents, who are elected by the members to three-year terms.

WORLD HINDI SECRETARIAT

Context: World Hindi Secretariat building has been inaugurated in Mauritius.

About WHS:

- It is an international organisation representing countries and regions where Hindi is the first or customary language, where a significant proportion of the population consists of Hindi speakers or where there is a notable affiliation with North Indian culture.
- The organisation was set up by the governments of India and Mauritius to promote Hindi across the world.
- The main objective of the WHS is to promote Hindi as an international language and further its cause for recognition at the United Nations as an Official Language.

ROLLING BACK FREE TRADE?

US President imposed heavy tariffs on imported steel and aluminium to boost the US industry. He said, US industry has been suffering from “unfair” business practices and this move has sparked fears of a global trade war. The president said he would exempt Canada and Mexico as “a special case” while negotiating for changes to the North American Free Trade Agreement. The European Union has responded by warning that it will retaliate with tariffs on a range of US imports.

Why are these tariffs global in nature?

A 25% duty on steel and 10% on aluminium imports is imposed for an unspecified period. US President's America First agenda, would mainly impact traditional allies of the United States.

Unlike the punitive tariffs that the United States imposes on “dumped” or unfairly subsidised goods from specified countries, these steel and aluminium measures would apply to all countries.

They are “safeguard” tariffs. The aim of these measures is to stop a sudden, unforeseen and damaging import surge that could seriously damage a particular industry.

What is the impact of new tariffs?

The E.U. is the top trading partner of the United States in goods, and it is the top U.S. export market.

Unfortunately, it could once again revive protectionist sentiment which has been on the wane following the recovery from the global economic meltdown. As a result, US's traditional allies, who will be hit the most from the tariffs, have



warned of bilateral retaliation on a range of US imports including peanut butter, cranberries and orange juice.

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Why is this measure hard to challenge quickly?

In justifying the measure, the administration invoked a national security law, departing from an international consensus not to impose trade barriers.

Countries are allowed to this kind of recourse under the General Agreement on Tariffs and Trade in times of war and other emergencies.

Safeguard tariffs are legal under World Trade Organization (WTO) rules, but the checks and balances on them are weak.

If the complainants go to the WTO and litigate, they may lose their right to compensation and simply open up years of legal battling. A tit-for-tat trade war may begin, as they impose unsanctioned measures to even up the score. The same thing can be seen in European Union's response which warned that it will retaliate with tariffs on a range of US imports.

What is the collateral damage?

Although apparently intended to help US steel and aluminium makers, the tariffs could lower profits for companies as well as increasing prices for consumers. In U.S., the latest levy is expected to put at risk millions of manufacturing jobs that rely on these metals. American steel and aluminium manufacturers will get a boost, but it's not clear that they actually have the capacity to meet a huge surge in demand.

Other sectors of American manufacturing could be hurt by rising steel and aluminium prices. The tariffs would raise the cost of raw materials for automakers like Ford (F) and General Motors (GM).

Conversely, it is unlikely to create significant new employment in these two sectors. Many trade economists say Trump's zero-sum, "mercantilist" view of trade is misguided and that he is wrong to think trade deficits are always bad.

In addition to it, Republicans opposed to President's approach worry that the hefty tariffs could undermine recent tax initiatives to lure investment.

What are other countries saying?

A trade war triggered by safeguard tariffs would open a new wound in the global trading system.

China has warned that it would have a "huge impact" on the global trading order. Australia's trade minister said that the imposition of a tariff like this will do nothing other than distort trade, and ultimately will lead to a loss of jobs.

These measures severely damage multilateral trade mechanisms represented by the World Trade Organization and will surely have huge impact on normal international trade order.



WORLD HAPPINESS INDEX

Context: World Happiness Report for the year 2018 has been released. The World Happiness Report 2018, ranks 156 countries by their happiness levels, and 117 countries by the happiness of their immigrants.

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The main focus of this year's report, in addition to its usual ranking of the levels and changes in happiness around the world, is on migration within and between countries. The report includes four chapters on migration, both internal (within-country) and international (cross-country), investigating the happiness of migrants, their families left behind, and others living in the cities and countries receiving migrants.

About the World Happiness Report:

What is it? The World Happiness Report is a measure of happiness published by the United Nations Sustainable Development Solutions Network.

How are the countries ranked? The rankings are based on Gallup polls of self-reported wellbeing, as well as perceptions of corruption, generosity and freedom.

Performance of various countries:

- Finland has been ranked the most stable, the safest and best governed country in the world. It is also among the least corrupt and the most socially progressive. Its police are the world's most trusted and its banks the soundest. Finland's immigrants are also the happiest immigrant population in the world.
- Top ten in order of overall happiness are Norway, Denmark, Iceland, Switzerland, Netherlands, Canada, New Zealand, Sweden, and Australia.
- The United States came in at 18th, down from 14th place last year. Britain was 19th and the United Arab Emirates 20th.
- Burundi in east Africa, scarred by bouts of ethnic cleansing, civil wars and coup attempts, is the unhappiest place in the world. Strikingly, there are five other nations – Rwanda, Yemen, Tanzania, South Sudan and the Central African Republic – which report happiness levels below that of even Syria.
- All the Nordic countries scored highly on income, healthy life expectancy, social support, freedom, trust and generosity.

Performance of India and its neighbours:

- India ranked 133rd, far behind terror-ravaged Pakistan and poorest-of-poor Nepal.
- It was placed 122nd last year, which was a drop from 118th rank the preceding year.
- Among the eight Saarc nations, Pakistan was at 75th position, up five spots from last year.
- Nepal stood at 101, Bhutan at 97, Bangladesh at 115 while Sri Lanka was at 116. China is far ahead at 86th spot.

GENERAL STUDIES-3

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INDIAN ECONOMY

80:20 GOLD SCHEME

Context: The government has announced that it will review the circumstances under which Premier Trading Houses (PTH) and Star Trading Houses (STH) allegedly earned windfall gains under the 20:80 gold import scheme implemented by the previous government.

What's the issue?

The previous government had, in May 2014, allowed PTHs and STHs to import gold under the 20:80 scheme, which was earlier restricted only to banks and public sector enterprises. This, the government has said, resulted in these PTHs and STHs earning a 'windfall gain'.

A CAG report published in 2016 found that the 80:20 scheme had resulted in a loss of Rs 1 lakh crore to the exchequer.

About 80:20 gold scheme:

The scheme was introduced in August 2013 with the aim of curbing gold imports. Under the scheme, up to 80% of gold imports could be sold in the country and while at least 20% of imports had to be exported before bringing in new consignments of the yellow metal. Further, the permission to import the next lot given only upon fulfilment of the export mandate. The policy was aimed at tackling the widening fiscal deficit.

Later, the RBI relaxed the rules with the aim to facilitate gem and jewellery export, which had declined due to the import curbs. Following relaxation of the rules, private firms were allowed to import gold under the scheme. In May 2014, the RBI had allowed certain premier export houses to import the gold subject to some restrictions. Under the earlier scheme, only state-owned entities were allowed to initially import the yellow metal. Later, the scheme was scrapped.

AGRICULTURE AND CROPPING PATTERNS

GM SOYBEAN

Why in news?

The Union environment ministry has asked the Directorate General of Foreign Trade (DGFT) to stop imports of genetically modified (GM) soybean for food or feed without the approval of the regulator for transgenic products.

Why stop the imports?



GEAC, which is the regulatory body for Genetically Modified Organisms (GMOs) and products thereof, has not authorized or approved GM soybean or any other products derived from GM soybean seeds for import or cultivation in India.

Approved crops

GM Cotton is the only transgenic crop which is allowed to be cultivated. The environment ministry is yet to take a final call on allowing the commercial cultivation of GM mustard.

GM Soybean:

The GM soybean, otherwise called as the Roundup Ready (RR) soybean, was developed by the biotech giant Monsanto. It was developed by introducing a copy of a gene from the Agrobacterium sp. strain CP4, to make the plant survive being sprayed on with the non-selective herbicide, Roundup, which can kill conventional soybean plants

Genetic Engineering Appraisal Committee (GEAC)

It is the apex body constituted in the Ministry of Environment and Forests, under the Environment Protection Act, 1986.

- The GEAC is responsible for approval of proposals relating to release of genetically engineered organisms and products into the environment including experimental field trials (Biosafety Research Level trial-I and II known as BRL-I and BRL-II).

IN-SITU

MANAGEMENT OF CROP RESIDUE

Context: The government has approved a Rs 1,151 crore scheme to promote in-situ (in the farm itself) management of crop residue in Punjab, Haryana, Uttar Pradesh and Delhi. The new central scheme will be implemented for two years.

- The move is aimed at providing a cost-effective and eco-friendly solution to farmers to deal with the problem of stubble burning that results in raising air pollution levels in the capital and neighbouring states every winter.

About the 'Promotion of agricultural Mechanization for in-situ management of crop residue' scheme:

Part of budget: This scheme is as per the government's budget announcement on having a special scheme to support efforts of the governments of Haryana, Punjab, Uttar Pradesh and Delhi to address air pollution.

Fund: Under the scheme, a fund will be created which will be used to promote agricultural mechanisation for the next two years (2018-20). The fund will primarily be used to subsidise machinery required for in-situ management of the crop residue.



Identification of beneficiaries: It will be the responsibility of the agriculture ministry to identify manufacturers and equipment for in-situ management of crop. The costs of these equipment will also be decided by the ministry in consultation with manufacturers so that it can be made available to users at reasonable price.

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Farm Machinery Banks: Establishment of 'Farm Machinery Banks' for custom hiring of in-situ crop residue management machinery will be the key component of the scheme. Under the scheme, financial assistance of 80% of the project cost to set up 'Farm Machinery Banks' for custom hiring will be provided to cooperative societies of the farmers, FPOs, SHGs, registered farmers societies/farmers group, private entrepreneurs and group of women farmers.

Individual beneficiaries: If an individual farmer would like to buy such machinery\equipment, the government will provide financial assistance of 50% of the cost of machinery for crop residue management.

Role of state governments: At the state level, department of agriculture of concerned state government will be the nodal implementing agency. It would be the responsibility of state governments to identify various beneficiaries and location-specific agricultural equipment, depending on the farming system. They will also identify and select beneficiaries for establishment of 'Farm Machinery Bank' for custom hiring and procurement of machines on individual ownership basis to avail the benefit in transparent and time-bound manner.

Tie up with banks: Under the scheme, the state agencies may tie up with banks for credit requirements of the beneficiaries.

Need for crop residue management:

The problem of crop residue burning has been intensifying over the years, with Punjab, Haryana and Uttar Pradesh being the major burning hotspots. Increased mechanization, declining number of livestock, long period required for composting and no economically viable alternate use of residues are some of the reasons for residues being burnt in field. This not only has implications for global warming, but also has an adverse impact on air quality, soil health and human health.

INDUSTRY, INFRASTRUCTURE AND INVESTMENT

AIRPORT SERVICE QUALITY (ASQ) 2017 RANKINGS

Why in news?

Delhi's Indira Gandhi International Airport has been rated as the world number one among airports handling more than 40 million passengers per annum in a survey by the Airports Council International (ACI).



Mumbai's Chhatrapati Shivaji International Airport has been ranked as the World's Best Airport for customer experience.

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Who gives the rankings?

Airports Council International (ACI) is a trade association of airports across 176 countries. As part of its survey on Airport Service Quality, views of passengers on 34 key performance indicators are measured.

NATIONAL E-MOBILITY PROGRAMME

Why in news?

The government has launched the National E-Mobility Programme.

Implemented by: Energy Efficiency Services Limited (EESL)

Details

The Programme aims to provide an impetus to the entire e-mobility ecosystem including vehicle manufacturers, charging infrastructure companies, fleet operators, service providers, etc. Energy Efficiency Services Ltd (EESL) will issue a fresh tender for additional 10,000 e-vehicles. These electric vehicles will replace the existing fleet of petrol and diesel vehicles.

The National E-Mobility Programme is a step towards ushering in an era of clean, green and future-oriented technologies in the country.

Challenges

Mainstreaming electric vehicles will require an overhaul of the country's energy and transport infrastructure. For example, EV charging stations will have to be set up on a war footing, and electricity generation will have to improve significantly even as it piggybacks on the push for solar energy. EV technology (especially the battery) will have to become much cheaper before it can perform well in a price-sensitive market like India.

In conclusion

India has a lot of reasons to rejoice over the bright outlook of the adoption of electric vehicles in India. NITI Aayog said in a recent report that India can cut its energy demand by 64% and carbon emissions by 37% by making its passenger mobility shared, electric, and connected. The concept not only helps India to fulfil its renewable energy goals but also assists it in other facets like the 'Make in India' vision.

The Indian automobile industry is the sixth-largest in the world and accounts for a whopping 22% of the country's total manufacturing output. The large-scale



adoption of electric vehicles can play an important role in increasing the share of manufacturing in India's GDP from the current 15% to 25% by 2022.

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EESL:

Energy Efficiency Services Limited (EESL) is a joint venture of NTPC Limited, Power Finance Corporation, Rural Electrification Corporation and POWERGRID, Energy Efficiency Services Limited (EESL) was set up under Ministry of Power (India) to facilitate implementation of energy efficiency projects.

INDIAN RENEWABLE ENERGY DEVELOPMENT AGENCY (IREDA)

Context: European Investment Bank (EIB) and Indian Renewable Energy Development Agency (IREDA) Ltd. have signed a loan agreement for a second line of credit (LoC) of Euro 150 million on non-sovereign basis.

Indian Renewable Energy Development Agency Ltd:

Indian Renewable Energy Development Agency Limited (IREDA) is a Mini Ratna (Category - I) Government of India Enterprise under the administrative control of Ministry of New and Renewable Energy (MNRE).

IREDA is a Public Limited Government Company established as a Non-Banking Financial Institution in 1987 engaged in promoting, developing and extending financial assistance for setting up projects relating to new and renewable sources of energy and energy efficiency/conservation with the motto: "ENERGY FOR EVER".

The main objectives of IREDA are:

- To give financial support to specific projects and schemes for generating electricity and / or energy through new and renewable sources and conserving energy through energy efficiency.
- To maintain its position as a leading organization to provide efficient and effective financing in renewable energy and energy efficiency / conservation projects.
- To increase IREDA's share in the renewable energy sector by way of innovative financing.
- Improvement in the efficiency of services provided to customers through continual improvement of systems, processes and resources.
- To strive to be competitive institution through customer satisfaction.



NATIONAL BUILDING CONSTRUCTION CORPORATION (NBCC)

Context: The government is considering handing the task of maintaining, managing and earning revenue from immovable properties attached in money laundering cases to the National Building Construction Corporation (NBCC).

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The proposal is to manage the seized land, which can often measure several thousand acres, as well as numerous factories, flats, buildings and shops taken over by the ED.

What necessitated this move?

- The proposal to mandate NBCC to do the job was at the behest of the ED and mooted by the finance ministry about six months ago. It was felt that lack of proper maintenance led to decay of the properties and the agency had to continuously spend on their upkeep.
- As of now, the ED manages the properties confiscated by it but does not have experience in how to do so and there is no provision under PMLA for rental to earn revenue.

About NBCC:

- NBCC (India) Limited, formerly known as National Buildings Construction Corporation Ltd., is a blue-chip Government of India Navratna Enterprise under the Ministry of Urban Development.
- It engages in the Real Estate Development & Construction business and also provides Project Management Consultancy. It is the sole land authorised agency for central undertakings.
- The Company has been notified as a Public Works Organization (PWO) explicitly, a construction agency, as per which Government Department(s)/ PSUs and Autonomous Bodies can award the works to NBCC on nomination basis.
- NBCC is also designated as the implementing agency for executing projects under Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Pradhan Mantri Gram Sadak Yojna (PMGSY), Solid Waste Management (SWM) and developmental work in North Eastern Region.

SCIENCE AND TECHNOLOGY

VATERITE, A RARE MINERAL

Why in news?

Scientists have found that the mineral vaterite, a form (polymorph) of calcium carbonate, is a dominant component of the protective silvery-white crust that forms on the leaves of a number of alpine plants.

Where is it found?



Naturally occurring vaterite is rarely found on Earth. Small amounts of vaterite crystals have been found in some sea and freshwater crustaceans, bird eggs, the inner ears of salmon, meteorites and rocks. This is the first time it has been found to be associated with plants.

Properties

Vaterite is a mineral, a polymorph of calcium carbonate (CaCO_3). It is also known as mu-calcium carbonate. Vaterite had been detected in planetary objects in the Solar System and meteorites. Vaterite is not very stable in the Earth's humid atmosphere as it often reverts to more common forms of calcium carbonate, such as calcite.

Potential uses

- Superior carrier for medications due to its high loading capacity, high uptake by cells and its solubility properties that enable it to deliver a sustained and targeted release of therapeutic medicines to patients.
- Improving the cements used in orthopaedic surgery and as an industrial application
- Improving the quality of papers for inkjet printing by reducing the lateral spread of ink.

50TH FALCON 9 FLIGHT

Why in news?

SpaceX has successfully launched a Spanish communications satellite- Hispasat, on the landmark 50th flight of the company's workhorse Falcon 9 rocket.

Falcon 9: Falcon 9 is a two-stage rocket designed and manufactured by SpaceX for the reliable and safe transport of satellites and the Dragon spacecraft into orbit. Falcon 9 is the first orbital class rocket capable of reflight.

PARKER SOLAR PROBE

Why in news?

NASA is inviting people around the world to submit their names online to be placed on a microchip aboard NASA's historic Parker Solar Probe mission launching in summer 2018.

Parker Solar Probe

It is part of NASA's Living with a Star Program, or LWS, to explore aspects of the Sun-Earth system that directly affect life and society.

- It will provide new data on solar activity and make critical contributions to our ability to forecast major space-weather events that impact life on Earth

- It will trace the flow of energy and understand the heating of the solar corona and to explore what accelerates the solar wind
- Determine the structure and dynamics of the plasma and magnetic fields at the sources of the solar wind
- Explore mechanisms that accelerate and transport energetic particles.

ICE-VII

Context: Scientists have found the first ever samples of naturally occurring ice-VII on Earth. The samples were found in a diamond.

Various forms of ice:

Commonly used is called as ice-I. When water freezes, the oxygen atoms move into a hexagonal arrangement. That's why ice expands and has lower density than water. Compressing ice can change the shape of the crystals, turning ice-I into ice-II (rhombus-shaped crystals), ice-III (tetragonal crystals), and so on.

Unique features of Ice-VII:

- Ice-VII, with its cubic crystals, is unique in that it remains stable even as pressure increases dramatically. It's 1.5 times more dense than ice-I as well.
- There's (almost) nowhere on Earth for ice-VII to form, because it requires both low temperatures and high pressure exceeding 30,000 atmospheres (3 gigapascals). The only place you can reach that pressure is deep in the Earth's mantle, but it's too hot for ice to form there.
- The formation of ice-VII doesn't require freezing temperatures — as long as the pressure is high enough, ice-VII can form at room temperature.

How Ice-VII is formed in diamond?

Diamonds often pick up molecules during their formation deep in the Earth. These so-called inclusions can affect the quality or color of the diamond, but sometimes the inclusion is just water. One interesting property of diamonds is the internal structures don't relax when they leave the high-pressure mantle. So, the water inside a diamond remains compressed, even though it's technically in a liquid state.

Significance of this discovery:

Scientists believe that ice-VII might be present deep in the ice sheets on moons like Enceladus and Europa, or as part of the ocean floor under Titan's hydrocarbon seas. Having naturally occurring samples of ice-VII on Earth for study could help us understand the environments on those moons.

C-17 GLOBEMASTER



Context: The Indian Air Force's (IAF) largest transport aircraft – C-17 Globemaster – has made a historic landing at Arunachal Pradesh's Tuting Advanced Landing Ground (ALG) near the Chinese border. The landing of the aircraft is seen as part of the IAF's move to strengthen its overall operations in the strategically important border state.

What is C-17 Globemaster?

- It is a US-manufactured aircraft named after two previous piston-engined military cargo aircraft, the Douglas C-74 Globemaster and the Douglas C-124 Globemaster II.
- It is commonly used to perform strategic airlift missions, transporting troops and cargo throughout the world; additional roles include medical evacuation and airdrop duties.
- They are operated in diverse terrain – from Himalayan air bases in North India at 13,000 ft to Indian Ocean bases in South India.

NEUTRINO PROJECT

Context: The India-based Neutrino Observatory (INO) project has got a fresh lease of life with the Ministry of Environment and Forests (MoEF) taking it up as a special case and granting it environmental clearance to set up the lab in Bodi West hills.

Two conditions:

While granting EC, the committee stipulated specific conditions, of which two are key for the project to take off.

- One is the consent to establish and operate to be obtained from the Tamil Nadu Pollution Control Board (TNPCB).
- Also, the INO team has to obtain the necessary forest and National Board for Wild Life clearances as per law. The Mathikettan Shola National Park in Idukki district, Kerala, is situated within five km from the project site.

About the project:

- The India-based Neutrino Observatory (INO) Project is a multi-institutional effort aimed at building a world-class underground laboratory with a rock cover of approx.1200 m for non-accelerator based high energy and nuclear physics research in India. The initial goal of INO is to study neutrinos.
- It is a mega-science project under the XII five-year plan of Government of India with an investment of about 1350 crores, jointly funded by the Department of Atomic Energy (DAE) and the Department of Science and Technology (DST).

The project includes:



- Construction of an underground laboratory and associated surface facilities at Pottipuram in Bodhi West hills of Theni District of Tamil Nadu.
- Construction of an Iron Calorimeter (ICAL) detector for studying neutrinos.
- Setting up of National Centre for High Energy Physics at Madurai, for the operation and maintenance of the underground laboratory, human resource development and detector R&D along with its applications.

What are neutrinos?

Neutrinos, first proposed by Swiss scientist Wolfgang Pauli in 1930, are the second most widely occurring particle in the universe, only second to photons, the particle which makes up light. In fact, neutrinos are so abundant among us that every second, there are more than 100 trillion of them passing right through each of us — we never even notice them.

Neutrinos occur in three different types, or flavours. These are separated in terms of different masses. From experiments so far, we know that neutrinos have a tiny mass, but the ordering of the neutrino mass states is not known and is one of the key questions that remain unanswered till today. This is a major challenge INO will set to resolve, thus completing our picture of the neutrino.

Why detect them?

Neutrinos are by far the most numerous of all the particles in the universe (other than photons of light) and so even a tiny mass for the neutrinos can enable them to have an effect on the evolution of the Universe through their gravitational effects.

- There are other recent astrophysical measurements that provide information on the evolution of the Universe and it is crucial to seek complementary information by direct determinations of the masses of neutrinos and their other properties. In a sense, neutrinos hold the key to several important and fundamental questions on the origin of the Universe and the energy production in stars. We have some partial answers but many details are still awaited from future experiments.
- Yet another important possible application of neutrinos is in the area of neutrino tomograph of the earth, that is detailed investigation of the structure of the Earth from core onwards. This is possible with neutrinos since they are the only particles which can probe the deep interiors of the Earth.

Why should the laboratory be situated underground?

Neutrinos are notoriously difficult to detect in a laboratory because of their extremely weak interaction with matter. The background from cosmic rays (which interact much more readily than neutrinos) and natural radioactivity will make it almost impossible to detect them on the surface of the Earth. This is the reason most neutrino observatories are located deep inside the Earth's surface. The overburden provided by the Earth matter is transparent to neutrinos



whereas most background from cosmic rays is substantially reduced depending on the depth at which the detector is located.

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'HISAR GOURAV'

Context: Scientists at the ICAR-Central Institute for Research on Buffaloes (CIRB) have produced cloned calf 'HISAR GOURAV'.

Key facts:

- This cloned buffalo calf is distinct from the earlier clones produced in India, as this is produced from cells of ventral side of tail of superior buffalo bull, this part is least exposed to sunlight and may have less mutation rate, and can be good choice for isolation of donor cells to produce healthy clones.
- With this achievement CIRB becomes world's third and India's second institute to produce cloned buffalo. This achievement has been made under the project entitled, Cloning for conservation and multiplication of superior buffalo germplasm.
- The first successful cloning was achieved by the National Dairy Research Institute, Karnal in 2010. Samrupa is the world's first Murrah buffalo calf cloned using a simple "Hand guided cloning technique".

YELLOW FEVER

The burden of yellow fever in any given area is known to be heavily dependent on climate, particularly rainfall and temperature which can impact both mosquito life cycle and viral replication. Now, researchers from Imperial College London and the World Health Organization (WHO) have developed a new model to quantify yellow fever dynamics across Africa using not only annual averages of these climatic measures, but seasonal dynamics.

What is yellow fever?

Yellow fever is an acute viral haemorrhagic disease transmitted by the aedes and Haemogogus mosquitoes. It is not always easy to diagnose, especially at the beginning, since its symptoms can often be confused with those of malaria, dengue fever, or other haemorrhagic fever. However, some patients will suffer from a jaundice specific to the disease, which explains why the term "yellow" is used.

What can be done against yellow fever?

To date, there is no treatment against yellow fever. Water and medicines can be given to target the symptoms, such as fever or dehydration. Vaccination is the best option to prevent outbreaks of the disease and to protect people against it. Other strategies to combat the disease include mosquito population control, with the large scale use of pesticides and mosquito nets, as well as the treatment of stagnant water sources.

ANTIBIOTIC RESISTANCE

Context: A study has found that, Escherichia coli, a pathogen seen in over 90% of Egyptian vultures that migrate to northwest India to spend the winter, tend to show significant difference in resistance to antibiotics within a single season. This is due to the environment that the vultures were exposed to — carcasses, garbage, and domestic animals.

Concerns:

The vultures that use human-dominated landscapes as part of their life cycle were likely to act as “reservoirs and melting pots of bacterial resistance.”

What is E.coli?

Escherichia coli (E. coli) is a bacteria that is surprisingly an important aspect of human intestinal tract health. Most E.coli are harmless bacteria and assist in everyday health. However the E.coli that generally make the headlines are pathogenic, which cause illnesses such as diarrhea, or even things outside the intestinal functions.

How is it transferred?

Usually, the E. coli that causes diarrhea is transferred through food, water, or contact with animals/people who already have E.coli. The infection usually occurs if you swallow minuscule amounts of human or animal feces (this amount is often invisible to the naked eye). These tiny traces of feces usually comes from contaminated food such as, raw produce, raw milk, soft cheese, unpasteurized apple cider, or even dealing with a dirty diaper or an employee not thoroughly washing their hands when preparing food.

What is antibiotic resistance?

Antibiotics are medicine used to treat infections caused by bacteria. Antibiotic Resistance refers to resistance developed by bacteria against antibiotics or the ability of bacteria to mutate or change so as to resist the effects of antibiotics. The more we use them, and the more we abuse them, the less effective they become.

CARBONACEOUS CHONDRITES

Context: A study of two meteorites which fell in Assam and Rajasthan over a span of 13 hours in 2017, by the Geological Survey of India (GSI), has concluded that they may contain "significant clues to the origins of life."

Key facts:

- Two meteorites fell in 2017, one on June 6 in Assam one in Mukundpura village in Rajasthan.
- After studies, experts have found that the Mukundpura meteorite is a carbonaceous meteorite, one of the most primitive types. The meteorite belongs to a very rare and primitive group of meteorites called CM group of carbonaceous chondrites.
- The meteorite that fell in Natun Balijan in the flood plains of Lohit River, has been classified as an "ordinary chondrite."

Significance of this discovery:

- Meteorites mostly originate from the asteroid belt between Mars and Jupiter. Carbonaceous meteorite may contain clues to the formation of early life. This is a rare type, since carbonaceous meteorites constitute only 3%-5% of all meteorite falls.
- Also, this meteorite could be carrying some of the most pristine primordial matter recovered from space as it is made up of materials which were formed during the early stages of the formation of the solar system. A detailed analysis could provide clues about the origin of life and the formation and evolution of the solar system.

About carbonaceous chondrites:

- Carbonaceous chondrite meteorites, unlike other meteorites, contain very primitive traces of carbon. And carbon forms the backbone of all life on earth.
- They represent some of the most pristine matter known, and their chemical compositions match the chemistry of the Sun more closely than any other class of chondrites.
- They are formed in oxygen-rich regions of the early solar system so that most of the metal is not found in its free form but as silicates, oxides, or sulfides.
- Most of them contain water or minerals that have been altered in the presence of water, and some of them contain larger amounts of carbon as well as organic compounds. This is especially true for the carbonaceous chondrites that have been relatively unaltered by heating during their history.

ENVIRONMENT



ANIMAL WELFARE BOARD OF INDIA

Why in news?

The headquarters of the Animal Welfare Board of India (AWBI) has been shifted from Chennai to Haryana's Ballabgarh for "better coordination" between the environment ministry and the board.

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Animal Welfare Board of India:

It is a statutory advisory body established in 1962 under The Prevention of Cruelty to Animals Act, 1960, the Animal Welfare Board of India

- It advises the Government of India on animal welfare laws, and promotes animal welfare in the country of India.
- It was started under the stewardship of Late Smt. Rukmini Devi Arundale, well known humanitarian.
- The Board was initially within the jurisdiction of the Government of India's Ministry of Food and Agriculture. In 1990, the subject of Prevention of Cruelty to Animals was transferred to the Ministry of Environment and Forests, where it now resides.
- The Board consists of 28 Members, who serve for a period of 3 years.
- The Board oversees Animal Welfare Organisations (AWOs) by granting recognition and providing grants to them if they meet its guidelines.

HT COTTON

Context: Department of Biotechnology in the Ministry of Science and Technology has constituted a Field Inspection and Scientific Evaluation Committee (FISEC) to investigate the matter of illegal cultivation of HT cotton.

What's the issue?

The cultivation of BG-III or HT cotton has not been approved by Genetic Engineering Approval Committee (GEAC) of Ministry of Environment. However, there are several media reports and complaints regarding the illegal or unauthorized cultivation of HT cotton in Andhra Pradesh, Telangana, Gujarat and Maharashtra.

About HT Cotton:

BG Cotton – III, also known as Herbicide-Tolerant Cotton, contains Round-up Ready and Round-up Flex (RRF) gene. HT cotton is an innovation in Bt cotton as it takes care of the weeds problem at a much lower cost than the labour farmers have to engage for weeding.

Who developed it?



Monsanto, a US-based multinational seed giant, has developed herbicide-tolerant trait (BG-III) and commercialised it as 'Round-up Ready Flex (RRF)' in USA.

Why HT Cotton is gaining popularity?

In normal cotton, spraying of herbicide is not possible once the plant has emerged out of the soil, as the chemical cannot distinguish between weeds and the crop itself. But with cotton that is genetically engineered to 'tolerate' herbicide application – through introduction of another alien gene, this time coding for a protein inhibiting the action of that chemical – only the weeds, not the crop, get killed.

Concerns associated:

- As the unapproved cotton variety is claimed to be herbicide tolerant, farmers resort to indiscriminate use of glyphosate, a herbicide, causing health hazards to humans and cattle, apart from affecting the yield of cotton.
- The herbicide-resistant gene could spread through pollen into the biodiversity system leading to transformation of weeds into super weeds on a large-scale. It would not only threaten the growth and yields of all crops in future, but also could increase cultivation costs and lead to health hazards.

Punishment:

As the herbicide tolerant cotton is not approved by the Genetic Engineering Appraisal Committee (GEAC) for commercial cultivation in India, its sale, cultivation and seed production is also punishable offence under Seeds Act 1966, Seed Rule 1968, Seeds (Control) Order 1983 with regard to Environmental Protection Act 1986 and Environmental Protection Rules, 1989.

CELL FOR IPR PROMOTION AND MANAGEMENT (CIPAM)

Context: The Cell for IPR Promotion and Management (CIPAM) is organizing a National Conference on Counterfeiting and Role of Enforcement Agencies in New Delhi, in collaboration with European Union (EU).

- The conference intends to bring together national and international experts on the same platform to have a dialogue and exchange best practices for the benefit of enforcement agencies, attorneys and industry representatives and provide fresh ideas for further strengthening the IPR protection ecosystem.

Concerns:

Counterfeiting has grown considerably to a point where it has become a widespread phenomenon with a global impact. Counterfeiting, other than causing an erosion on the brand value, reputation and goodwill of the manufacturers and owners of IP, leads to social and economic consequences resulting in huge economic losses in terms of lost taxes and revenues. It leads to diversion of funds earned therefrom to other illegal activities; counterfeit products put a threat to consumers' health and safety as well.



About CIPAM:

Cell for IPR Promotion and Management (CIPAM) has been created as a professional body under the aegis of DIPP to take forward the implementation of the National IPR Policy that was approved by the Government in May 2016, with the slogan – “Creative India; Innovative India”.

Functions: CIPAM is working towards creating public awareness about IPRs in the country, promoting the filing of IPRs through facilitation, providing inventors with a platform to commercialize their IP assets and coordinating the implementation of the National IPR Policy in collaboration with Government Ministries/Departments and other stakeholders.

NEWTON-BHABHA FUND FOR ARSENIC RESEARCH IN GANGA BASIN

Context: An India-UK Joint Team has won the Newton-Bhabha Fund for a project on Groundwater Arsenic Research in Ganga River Basin.

Key facts:

- The Newton Bhabha Fund, provided by the British Council, aims to bring together the UK and Indian scientific research and innovation sectors to find joint solutions to the challenges facing India in economic development and social welfare.
- The team members involved with the project will try to assess how the problem of arsenic poisoning can get aggravated in the next 25 to 30 years and influence groundwater management practices and suggest water remedial technologies accordingly.

Arsenic in groundwater:

Arsenic in ground water is a geogenic contaminant i.e. caused by natural geologic processes.

- Arsenic-containing groundwater in Ganga River basin is hosted by the sediments deposited by the rivers during the late Quaternary or Holocene age (<12 thousand years). Incidence of high arsenic in groundwater reported from various parts of the country, particularly in the Ganga- plains is a serious threat to the health of human being.
- Over the last three decades numerous measures have been initiated which includes alternate arrangement for supply of arsenic free water to the affected populace and providing arsenic removal plants.
- Arsenic occurrences in ground water in these areas is highly sporadic in nature and all the sources in these areas are not necessarily contaminated.

WEF ENERGY TRANSITION INDEX



Context: World Economic Forum (WEF) has released the energy transition index as part of the report titled Fostering Effective Energy Transition. The index ranks 114 countries on how well they are able to balance energy security and access with environmental sustainability and affordability.

Global performance:

- The overall list was topped by Sweden, followed by Norway at the 2nd position and Switzerland at the 3rd rank.
- Other countries on the top 10 include Finland (4th), Denmark (5th), the Netherlands (6th), the UK (7th), Austria (8th), France (9th) and Iceland (10th).
- Among its emerging market peers Brazil stood at the 38th place, Russia at 70th and China at 76th place.

Performance of India:

- India has been ranked at 78th, lower than its emerging market peers like Brazil and China.
- In the Index, India ranks in the third performance quartile and third readiness quartile, making it an emerging country that is approaching the leapfrog category.
- Concerns: Energy needs in the country are primarily met by fossil fuels with implications for environmental sustainability and increasing energy import costs. Furthermore, a considerable share of India's population still lacks access to electricity and clean cooking fuel.
- Challenges: The Indian renewable energy landscape shows promise, with subsequent renewable energy auctions clearing at prices lower than those in long-term thermal power purchase contracts. However, this has also cast uncertainty on the economic viability of thermal power plants, which account for 58% of India's primary energy supply.

SECURITY CHALLENGES

FIRST EVER 'CRIME-FREE ZONE' ALONG INTERNATIONAL BORDER LAUNCHED

Context: In a first for both countries, the director generals of the Border Security Force (BSF) and Border Guard Bangladesh (BGB) have declared an 8.3 km stretch of the Indo-Bangladesh border as a 'crime-free zone'.

The Crime-free zone:

The stretch covers the Gunarmath and Kalyani Border Out Posts (BOPs) in India and the Puthkhali and Daulatpur BOPs across the border. This stretch is one of the most vulnerable with cattle smuggling and other criminal activities prevalent.

How this zone works?

Both border guarding forces with the help of the civil administrations of the two countries, NGOs and the local populace will help in ensuring that no crime takes place along the stretch. Both the forces will work together to ensure that no crime or anti-social activity occurs along this stretch

Bangladesh and India share a 4,156 km long international border. This includes 262 km in Assam, 856 km in Tripura, 180 km in Mizoram, 443 km in Meghalaya, and 2,217 km in Bengal.

INDIA EMERGES AS WORLD'S LARGEST IMPORTER OF ARMS:

Context: India has emerged as the largest importer of major arms according to a latest research released by the Stockholm International Peace Research Institute (SIPRI).

Top importer:

- India became the world's largest importer of major arms in 2013-17 accounting for 12% of the total global import.
- The country that accounts for the maximum arms import of India is Russia with 62%.
- America is the second largest arms supplier to India.

Top exporters:

- The US emerged as the world's top exporter of weapons accounting for 34% of global arms sales in the last five years.
- Russia accounted for 20% of the export ranking second in the list.