

NEWS ANALYSIS

For Civil Services Exams

Issue I

Nov., 1-15, 2018

CONTENTS

National affair and issues

- *Eight Avian Species Declared “Extinct” in New Study*
- *Kepler space telescope*
- *NASA’s Cassini spacecraft*
- *Comprehensive Nuclear Test Ban Treaty*
- *National Tiger Conservation Authority (NTCA)*
- *International affair*

United Nations Postal System

- *International Telecommunications Union (ITU)*
- *Quad countries to focus on maritime security*

Science & Technology

- *International Solar Alliance (ISA)*
- *NASA’s Orion spacecraft*
- *OSIRIS-Rex*
- *India’s nuclear triad is complete*
- *Gujarat government wants to rename Ahmedabad as Karnavati*
- *Ozone hole*
- *Gujarat government wants to rename Ahmedabad as Karnavati*
- *Shakti- India’s first indigenous microprocessor*
- *Companies Amendment (Ordinance), 2018*
- *World’s longest DNA sequence decoded:*
- *Oceans heating faster: study*
- *ISRO’s AstroSat*
- *NASA’s Dawn asteroid mission*
- *Earth BioGenome Project*
- *World’s first sovereign Blue Bond by Seychelles*

- *Location tracking devices, emergency buttons mandatory for new public service vehicles*
- *Deal inked for biofuel research*

Schemes & Committees

- *UN Habitat*
- *Regional connectivity scheme (RCS)*
- *Chabahar Port*
- *National River Ganga (Rejuvenation, Conservation and Management) Bill, 2018*
- *Ganga Gram Project*
- *Border Area Development Programme (BADP)*
- *First India-Nepal passenger train on broad gauge to make first run in December*
- *National Mission for Clean Ganga (NMCG)*

Economic issues

- *Support Initiatives for MSME Sector*
- *Public Credit Registry (PCR)*
- *Turga Pumped Storage*
- *Society for worldwide interbank financial telecommunication*
- *Partial credit enhancement (PCE)*
- *World Bank’s Doing Business Report, 2018*
- *Section 7 of the RBI Act*

Environmental Issues

- *World Food Programme (WFP)*
- *Earth has three moons*
- *OPERATION GREENS*
- *United Nations World Tourism Organization (UNWTO)*

 **PANACEA** BHARTI[®] Institute Pvt. Ltd.

• Opposite New Court, Bhaiwala Chowk, Ferozepur Road, Ludhiana

M: 9888 405 906 www.panaceabharti.com panaceabi@gmail.com
CIN: U74999PB2016PTC045329

National affair and issues

Eight Avian Species Declared “Extinct” in New Study

Scientists have declared eight species of birds to be extinct in what are being seen as the first avian extinctions of the 21st century.

The study was conducted by non-profit “BirdLife International”. It assessed 51 species judged “critically endangered” on the International Union for the Conservation of Nature’s (IUCN) “Red List” by using a new statistical method.

Key facts:

- The species gone extinct include Spix’s macaw, the Alagoas foliage-gleaner, the cryptic treehunter, the Pernambuco pygmy-owl, the poo-uli, or black-faced honeycreeper and the glaucous macaw.
- Five of these new extinctions have occurred in South America and have been attributed by scientists to deforestation. Four out of the eight species declared extinct belong to Brazil.

About Birdlife International:

BirdLife International (formerly the International Council for Bird Preservation) is a global partnership of conservation organisations that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources. It is the world’s largest partnership of conservation organisations, with over 120 partner organisations.

- BirdLife International publishes a quarterly magazine, *World Birdwatch*, which contains recent news and authoritative articles about birds, their habitats, and their conservation around the world.
- *BirdLife International is the official Red List authority for birds*, for the International Union for Conservation of

Nature.

Important Bird and Biodiversity Areas (IBAs):

- The IBAs are “places of international significance for the conservation of birds and other biodiversity” and are “distinct areas amenable to practical conservation action,” according to BirdLife International.
- Declaring a site as an Important Bird and Biodiversity Area does not ensure that the site gets legal protection or becomes inaccessible to people. Instead BirdLife International encourages national and State governments to recognise the areas as sites of vital importance for conservation of wildlife and to empower local community-based conservation initiatives.

Kepler space telescope

Context: NASA’s planet hunting Kepler space telescope — which has led to the discovery of over 2,300 planets so far – has woken up from sleep mode and has restarted its scientific operations. NASA has been closely monitoring the probe since it is expected to run out of fuel soon.

- The Kepler team is planning to collect as much science data as possible in its remaining time and beam it back to Earth before the loss of the fuel-powered thrusters that would make it difficult to aim the spacecraft for data transfer.

Background:

The space telescope, originally launched in March 2009, has had a tumultuous year. The team placed Kepler into hibernation in July, as their new planet-hunter, the Transiting Exoplanet Survey Satellite (TESS), began testing for its own mission. The hibernation-like state was to ensure that the data from Kepler’s 18th mission, stored onboard the spacecraft, would be able to make its way back to Earth.

Accomplishments:

In total, the Kepler mission has confirmed the existence of 2,652 exoplanets and 30 of those exist within the Small Habitable Zone, the area

of space surrounding a star where a planet could theoretically support a surface of liquid water (and potentially extraterrestrial life).

About Kepler Mission:

Launched in 2009, the Kepler mission is specifically designed to survey our region of the Milky Way galaxy ***to discover hundreds of Earth-sized and smaller planets in or near the habitable zone*** and determine the fraction of the hundreds of billions of stars in our galaxy that might have such planets.

About TESS mission:

The Transiting Exoplanet Survey Satellite (TESS) is a NASA mission that will look for planets orbiting the brightest stars in Earth's sky. It was led by the Massachusetts Institute of Technology with seed funding from Google.

Mission: The mission will monitor at least 200,000 stars for signs of exoplanets, ranging from Earth-sized rocky worlds to huge gas giant planets. TESS, however, will focus on stars that are 30 to 100 times brighter than those Kepler examined. This will help astronomers better understand the structure of solar systems outside of our Earth, and provide insights into how our own solar system formed.

Orbit: TESS will occupy a never-before-used orbit high above Earth. The elliptical orbit, called P/2, is exactly half of the moon's orbital period; this means that TESS will orbit Earth every 13.7 days. Its closest point to Earth (67,000 miles or 108,000 kilometers) is about triple the distance of geosynchronous orbit, where most communications satellites operate.

How it works? It will use transit method to detect exoplanets. It watches distant stars for small dips in brightness, which can indicate that planet has passed in front of them. Repeated dips will indicate planet passing in front of its star. This data has to be validated by repeated observations and verified by scientists.

NASA's Cassini spacecraft

Context: Using data from NASA's Cassini spacecraft, scientists have spotted a surprising feature emerging at Saturn's northern pole as it nears summertime – a warming, high-altitude

jet stream with a hexagonal shape.

Key facts:

- The vortex is akin to the famous hexagon seen deeper down in Saturn's clouds. The edges of this newly-found vortex appear to be hexagonal, precisely matching a famous and bizarre hexagonal cloud pattern we see deeper down in Saturn's atmosphere.
- The results suggest that the lower-altitude hexagon may influence what happens above, and that it could be a towering structure hundreds of miles in height.
- This warm vortex sits hundreds of miles above the clouds, in the stratosphere.

About Cassini Mission:

- Launched in 1997, the Cassini mission — ***a cooperation between NASA, the European Space Agency and the Italian Space Agency*** — has sent back thousands of stunning images and made numerous discoveries about the ringed planet and its moons.
- ***Cassini-Huygens is an unmanned spacecraft sent to the planet Saturn.*** Cassini is the fourth space probe to visit Saturn and the first to enter orbit. Its design includes a Saturn orbiter and a lander for the moon Titan. The lander, called Huygens, landed on Titan in 2005. The spacecraft was launched on October 15, 1997. This was the first landing ever accomplished in the outer Solar System.

Objectives of the mission:

- Determine the three-dimensional structure and dynamic behavior of the rings of Saturn.
- Determine the composition of the satellite surfaces and the geological history of each object.
- Determine the nature and origin of the dark material on Iapetus's leading hemisphere.
- Measure the three-dimensional structure and dynamic behavior of the magnetosphere.
- Study the dynamic behavior of Saturn's

atmosphere at cloud level.

- Study the time variability of Titan's clouds and hazes.
- Characterize Titan's surface on a regional scale.

Comprehensive Nuclear Test Ban Treaty

Context: UN chief Antonio Guterres recently reiterated his appeal to eight nations, including India and the US, to ratify the Comprehensive Nuclear-Test-Ban Treaty, saying the failure to bring it into force undermines global efforts to ensure a world free of atomic weapons.

Background:

Although more than 180 countries have signed the CTBT, and mostly ratified it, the treaty can only enter into force after it is ratified by eight countries with nuclear technology capacity, namely China, Egypt, India, Iran, Israel, North Korea, Pakistan and the United States.

What is CTBT?

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is the Treaty banning all nuclear explosions – everywhere, by everyone. The Treaty was negotiated at the Conference on Disarmament in Geneva and adopted by the United Nations General Assembly. It opened for signature on 24 September 1996.

Why is the CTBT so important?

The CTBT is the last barrier on the way to develop nuclear weapons. It curbs the development of new nuclear weapons and the improvement of existing nuclear weapon designs. When the Treaty enters into force it provides a legally binding norm against nuclear testing. The Treaty also helps prevent human suffering and environmental damages caused by nuclear testing.

India and the CTBT:

Since its inception, India has had a number of reservations about the CTBT. While it has stood by its demand for a nuclear weapons-free world, various principled, procedural, political, and

security concerns have stood in the way of its support for the CTBT.

- **India's principled opposition drew from its emphasis on universal and complete nuclear disarmament in a time-bound manner.** India has traditionally believed this to be the end goal with the test ban just being a path to get there. But it did not insist on a complete disarmament clause in 1994, acknowledging that it was a "complex issue."
- **Another major concern was Article XIV, the entry-into-force (EIF) clause,** which India considered a violation of its right to voluntarily withhold participation in an international treaty. The treaty initially made ratification by states that were to be a part of the the CTBT's International Monitoring System (IMS) mandatory for the treaty's EIF.

Need of the hour:

CTBT has an essential role within the nuclear disarmament and non-proliferation regime. More than 20 years since its negotiation, the Treaty has yet to enter into force. Every effort must be made to bring about the immediate entry into force of the Comprehensive Nuclear-Test-Ban Treaty, CTBT. The failure to bring the treaty into force prevents its full implementation and undermines its permanence in the international security architecture.

National Tiger Conservation Authority (NTCA)

Why in News? The National Tiger Conservation Authority (NTCA) has commissioned a report from the Maharashtra Forest Department on how tigress Avni (T1) was killed.

Background:

Maharashtra government had permitted a hunter to kill the tigress- Avni. This move was widely criticised by the activists. The tigress, which is said to have killed 13 people, was shot dead in Yavatmal on November 2 by civilian hunter Asgar Ali, who was with a team of Forest

Department officials.

About NTCA:

The National Tiger Conservation Authority is a *statutory body under the Ministry of Environment, Forests and Climate Change* constituted under enabling provisions of *the Wildlife (Protection) Act, 1972*, as amended in 2006, for strengthening tiger conservation, as per powers and functions assigned to it under the said Act.

The National Tiger Conservation Authority has been fulfilling its mandate within the ambit of the Wildlife (Protection) Act, 1972 for strengthening tiger conservation in the country by retaining an oversight through advisories/normative guidelines, based on appraisal of tiger status, ongoing conservation initiatives and recommendations of specially constituted Committees.

The functions of NTCA are as follows:

- Ensuring normative standards in tiger reserve management
- Preparation of reserve specific tiger conservation plan
- Laying down annual/ audit report before Parliament
- Instituting State level Steering Committees under the Chairmanship of Chief Minister and establishment of Tiger Conservation Foundation.
- According approval for declaring new Tiger Reserves.

International affair

United Nations Postal System

Context: United Nations Postal Administration (UNPA) has issued special stamps with Diyas lamps to commemorate India Hindu festival of Diwali.

Key Facts:

- The special event sheet (stamps) issued by UNPA are in denomination of US \$1.15.

- It contains ten stamps and tabs featuring festive lights and symbolic lamps known as diyas.
- The background of sheet features United Nations Headquarters building illuminated with message of “Happy Diwali” to celebrate the spirit of the festival.
- The description accompanying information about stamps mentioned that Diwali, also known as Deepawali is joyous and popular festival of lights, which is celebrated in India and by followers of many faiths across the world.
- It also said that during celebration clay lamps known as diyas are lit to signify the victory of good over evil. The festival also symbolises start of new year for many communities.

About United Nations Postal Administration (UNPA):

It is postal agency of United Nations. It issues postage stamps and postal stationery, denominated in United States dollars for United Nations offices in New York, in Swiss francs for offices in Geneva and in euros for the offices in Vienna. Postage rates charged are identical to those of the host nation.

International Telecommunications Union (ITU)

Context: India has been elected as a Member of the International Telecommunications Union (ITU) Council for another 4-year term (2019-2022). The elections to the Council were held during the ongoing ITU Plenipotentiary Conference 2018 at Dubai, UAE.

- By securing 165 votes, India ranked third among the 13 countries elected to the Council from the Asia-Australasia region, and eighth among the 48 countries elected to the Council globally. The ITU has 193 member states who elect representatives to the Council.

About International Telecommunication Union (ITU):

The International Telecommunication Union (ITU) is *an agency of the United Nations (UN)* whose purpose is to coordinate telecommunication operations and services

throughout the world. Originally founded in 1865, as the International Telegraph Union, the ITU is the oldest existing international organization. ITU headquarters are in Geneva, Switzerland.

The ITU consists of three sectors:

1. ***Radiocommunication (ITU-R)*** — ensures optimal, fair and rational use of the radio frequency (RF) spectrum.
2. ***Telecommunication Standardization (ITU-T)*** — formulates recommendations for standardizing telecommunication operations worldwide.
3. ***Telecommunication Development (ITU-D)*** — assists countries in developing and maintaining internal communication operations.

Membership:

- There are 193 Member States of the ITU, including all UN member states except the Republic of Palau, plus the Vatican City.
- Membership of ITU is open to only UN members, which may join the Union as Member States, as well as to private organizations like carriers, equipment manufacturers, funding bodies, research and development organizations and international and regional telecommunication organizations, which may join ITU as non-voting Sector Members.

Functions:

- The ITU sets and publishes regulations and standards relevant to electronic communication and broadcasting technologies of all kinds including radio, television, satellite, telephone and the Internet.
- The organization conducts working parties, study groups and meetings to address current and future issues and to resolve disputes. The ITU organizes and holds an exhibition and forum known as the Global TELECOM every four years.
- Another important aspect of the ITU's mandate is helping emerging countries to establish and develop telecommunication systems of their own.
- Although the recommendations of the ITU are non-binding, most countries adhere to them in the interest of maintaining an

effective international electronic communication environment.

Quad countries to focus on maritime security

Context: The “Quad” countries, namely India, US, Japan and Australia, will hold their next meeting on the sidelines of the 13 th East Asia Summit at Singapore in mid-November, with the grouping keen to step-up maritime security and disaster relief initiatives as well as economic development projects in the critical Indo-Pacific region.

The Quad:

- Regional coalition known as the ‘Quad’, ***the quadrilateral formation includes Japan, India, United States and Australia.***
- All four nations find a common ground of being the democratic nations and common interests of unhindered maritime trade and security.
- The idea was first mooted by Japanese Prime Minister Shinzo Abe in 2007. However, the idea couldn't move ahead with Australia pulling out of it.

Significance Quad- grouping for the US:

- The US believes the Quad, as one of the elements of its larger Indo-Pacific strategy for “a free, open and rules-based order” in face of an aggressive and expansionist China in the region, should eventually evolve into a ministerial-level dialogue imbued with a strong military dimension.
- But Washington also recognizes that New Delhi for now remains opposed to any militarization of the Quad, which was revived after a decade as a joint secretary-level dialogue in November 2017, with its second meeting being held in June this year. India has also made it clear that the US should not “conflate” the Indo-Pacific with the Quad, stressing the centrality of Asean in the former.

Way ahead:

Quad is an opportunity for like-minded countries to share notes and collaborate on projects of mutual interest. All four countries share a vision

of an open and free Indo-Pacific. Each is involved in development and economic projects as well as in promoting maritime domain awareness and maritime security.

The Quad grouping is one of the many avenues for interaction among India, Australia, Japan and the US and should not be seen in an exclusive context. Quad should not be seen in any comparative or in an exclusive context.

Maritime security and the need for it:

With a vast coastline of about 7600 kilometres, island territories on both sides of the peninsula are sizeable Exclusive Economic Zone and sea borne trade, the greater part of which moves by ship; there are many strands to India's composite maritime security including the safety of major ports plus aircraft carriers and nuclear submarines at strategic levels.

Science & Technology

International Solar Alliance (ISA)

Context: The Union Cabinet has given ex-post facto approval for moving a Resolution in the first Assembly of the International Solar Alliance (ISA) for amending the Framework Agreement of the ISA for opening up the ISA membership to all countries that are members of the United Nations.

Benefits:

- Opening the membership of the ISA will put solar energy in global agenda with the universal appeal for developing and deploying solar energy.
- It will make ISA inclusive, whereby all member countries that are members of the United Nations could become member.
- Expanding membership will lead to ISA initiative benefitting the world at large.

About ISA:

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

Objectives: 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.

What it does? As an action-oriented organisation, the ISA brings together countries with rich solar potential to aggregate global demand, thereby reducing prices through bulk purchase, facilitating the deployment of existing solar technologies at scale, and promoting collaborative solar R&D and capacity building.

When it entered into force? When the ISA Framework Agreement entered into force on December 6th, 2017, ISA formally became a de-jure treaty based International Intergovernmental Organization, headquartered at Gurugram, India.

NASA's Orion spacecraft

Context: Europe's Airbus has delivered the "powerhouse" for NASA's new Orion Spaceship that will take astronauts to the Moon and beyond in coming years, hitting a key milestone that should lead to hundreds of millions of euros in future orders.

- Airbus's European Service Module will provide propulsion, power, thermal control and consumables to the Orion crew module, marking the first time that NASA will use a European-built system as a critical element to power an American spacecraft.

About Orion:

NASA's Orion spacecraft is built to take humans farther than they've ever gone before.

- Orion will serve as the exploration vehicle that will carry the crew to space, provide emergency abort capability, sustain the crew during the space travel, and provide safe re-entry from deep space return velocities. Orion will launch on NASA's new heavy-lift rocket, the Space Launch System.
- Orion will first fly with astronauts aboard during Exploration Mission-2, a mission that will venture near the Moon and farther from Earth than ever before, launching atop NASA's Space Launch System rocket — which will be the world's most powerful rocket.

OSIRIS-Rex

Context: After two years travelling through space, the NASA OSIRIS-REx spacecraft has started to obtain images of the mission target, primitive asteroid Bennu.

Background:

The launch of the NASA OSIRIS-REx mission took place on September 8, 2016. Since then, the spacecraft has been two years travelling through space to reach its target, primitive asteroid Bennu, in October, 2018.

About the mission:

- OSIRIS-Rex stands for **Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer**.
- OSIRIS-REx is **the third mission in NASA's New Frontiers program**, which previously sent the New Horizons spacecraft zooming by Pluto and the Juno spacecraft into orbit around Jupiter.

What will the OSIRIS-Rex do?

OSIRIS-REx will spend two years travelling towards Bennu, arriving at the asteroid in August 2018. The probe will orbit the asteroid for 3 years, conducting several scientific experiments, before returning to Earth, with the sample capsule expected to land in Utah, USA in September 2023.

Scientific Mission Goals:

1. During its three year orbit of Bennu, OSIRIS-REx will be conducting a range of scientific experiments in order to better understand the asteroid.
2. As part of this, the asteroid will be mapped using instruments on the probe, in order to select a suitable site for samples to be collected from.
3. The aim of the mission is to collect a sample of regolith- the loose, soil-like material which covers the surface of the asteroid.
4. In July 2020, the probe will move to within a few metres of Bennu, extending its robotic arm to touch the asteroid's surface. The arm will make contact with the surface for just 5 seconds, during which a blast of nitrogen gas will be used to stir up the regolith, allowing it to be sucked into the sample collector.

5. OSIRIS-REx has enough nitrogen on board for 3 sample collection attempts, and NASA are hoping to collect between 60 and 2000g of regolith material to bring back to Earth.

Why was Bennu chosen?

Bennu was selected for a the OSIRIS-REx mission from over 500,000 known asteroids, due to it fitting a number of key criteria. These include:

- **Proximity to Earth:** In order for OSIRIS-REx to reach its destination in a reasonable timeframe, NASA needed to find an asteroid which had a similar orbit to Earth. Around 7000 asteroids are 'Near-Earth Objects' (NEOs), meaning they travel within around ~30million miles of the Earth. Out of these, just under 200 have orbits similar to Earth, with Bennu being one of these.
- **Size:** Small asteroids, those less than 200m in diameter, typically spin much faster than larger asteroids, meaning the regolith material can be ejected into space. Bennu is around 500m in diameter, so rotates slowly enough to ensure that the regolith stays on its surface.
- **Composition:** Bennu is a primitive asteroid, meaning it hasn't significantly changed since the beginning of the Solar System (over 4 billion years ago). It is also very carbon-rich, meaning it may contain organic molecules, which could have been precursors to life on Earth.
- Additionally, Bennu is of interest as it is **a Potentially Hazardous Asteroid (PHA)**. Every 6 years, Bennu's orbit brings it within 200,000 miles of the Earth, which means it has a high probability of impacting Earth in the late 22nd Century.

India's nuclear triad is complete

Context: India has declared that its nuclear triad, stated in its nuclear doctrine, is operational after indigenous ballistic missile nuclear submarine INS Arihant recently achieved a milestone by conducting its first deterrence patrol.

- The submarine recently returned from its first deterrence patrol, completing the establishment of the country's survivable

nuclear triad. INS Arihant is now capable of prowling the deep seas carrying ballistic missiles equipped with nuclear warheads.

Significance:

- This places India in the league of the few countries that can design, construct and operate ship submersible ballistic nuclear (SSBN).
- Given India's stated position of 'No-First-Use' (NFU) in launching nuclear weapons, the ship submersible ballistic nuclear (SSBN) is the most dependable platform for a second-strike. Because they are powered by nuclear reactors, these submarines can stay underwater indefinitely without the adversary detecting it. The other two platforms — land-based and air-launched are far easier to detect.

About INS Arihant:

Arihant was commissioned into service in August 2016. It has a displacement of 6000 tonnes and is powered by an 83 MW pressurised light-water reactor with enriched uranium.

India's NFU:

In 1998, India conducted nuclear tests under Pokhran-II and in 2003, it declared its nuclear doctrine based on credible minimum deterrence and a NFU policy while reserving the right of massive retaliation if struck with nuclear weapons first.

What is no first use nuclear doctrine?

No first use (NFU) refers to a pledge or a policy by a nuclear power not to use nuclear weapons as a means of warfare unless first attacked by an adversary using nuclear weapons. Earlier, the concept had also been applied to chemical and biological warfare.

- India first adopted a "No first use" policy after its second nuclear tests, Pokhran-II, in 1998. In August 1999, the Indian government released a draft of the doctrine which asserts that nuclear weapons are solely for deterrence and that India will pursue a policy of "retaliation only".
- The document also maintains that India "will not be the first to initiate a nuclear first strike, but will respond with punitive retaliation should deterrence fail" and that

decisions to authorise the use of nuclear weapons would be made by the Prime Minister or his 'designated successor(s)'.

Why India should retain this policy?

Adopting a no-first use policy enables New Delhi to keep the nuclear threshold high, especially as Pakistan tries to lower the threshold by developing tactical nuclear weapons, the Hatf-9 with 60km range.

- It must also be noted that New Delhi is not bordered by just one nuclear weapon state. China adopts a no-first use policy and, in spite of calls for Beijing to revise its no-first use doctrine, it is unlikely to do so. Hence, if New Delhi gave up its no-first use doctrine, it could give Beijing a chance to adopt a first strike policy and shift blame on India.
- In fact, India's adoption of a first strike policy would be an easy excuse for Beijing to give up its no-first use doctrine against the United States and Russia as well.
- Moreover, India has always promoted herself as a responsible nuclear weapon state. Hence, a first strike policy would severely damage India's reputation as a responsible nuclear weapon state. This means that while India would not be resilient to any nuclear attack by its adversaries, at the same time, it will not act as a villain who tries to bully its adversaries by threatening to strike first.
- Also, it is India's no first use doctrine that has enabled both Pakistan and India to keep their nuclear arsenal in a de-mated posture rather than a ready deterrent posture. This means nuclear warheads are not mated with the delivery systems. This reduces the chances of nuclear terrorism in Pakistan and also reduces the likelihood of an accidental launch of a nuclear weapon. A first strike policy by India may not have allowed Pakistan to keep their nuclear arsenal in a de-mated posture.
- There is also the issue of ballistic missile defense being developed by India which is highly destabilizing in nature and hence, New Delhi would continue to resort to using its no-first use doctrine in order to prevent instability in the South Asian region. A first-strike policy, coupled with a ballistic missile defense system, could

provoke Pakistan to launch a nuclear preemptive strike against India.

- By adopting a no-first use doctrine, New Delhi has also made it evident that nuclear weapons are indeed the weapons of last resort. Abandoning this doctrine would make it evident that India considers the option of using nuclear weapons in the initial phases of the conflict. In fact, India's nuclear strategy is dependent on punitive retaliation. This strategy itself acts as deterrence against Pakistan.

Gujarat government wants to rename Ahmedabad as Karnavati

Context: Gujarat government is planning to rename Ahmedabad as Karnavati.

Historical background:

Historically, the area around Ahmedabad has been inhabited since the 11th century, when it was known as Ashaval.

Chaulukya ruler Karna of Anhilwara (modern Patan) had waged a successful war against the Bhil king of Ashaval and established a city called Karnavati on the banks of the Sabarmati river.

- Sultan Ahmed Shah in 1411 A.D. Had laid the foundation of a new walled city near Karnavati and named it Ahmedabad after the four saints in the area by the name Ahmed.

Ozone hole

Context: A recent study by NASA has confirmed the recovery of the ozone layer due to the absence of chlorine from Chlorofluorocarbon(CFC) in the atmosphere.

Highlights of the study:

The study has confirmed the phenomenon by mapping the chemical composition of the atmosphere. The study revealed that chlorine levels declined by 0.8% each year between 2005 and 2016 and speculates that it could be the effect of the worldwide ban on the use of CFC. Previous research had hinted at the decrease in the depletion of ozone layer.

Scientists believe that the ozone layer would fully recover by 2080.

What is ozone layer?

A layer of ozone envelops the Earth and keeps damaging ultraviolet, or UV, radiation from reaching living things on the planet's surface. The ozone layer exists mainly in the stratosphere, a layer of the atmosphere that reaches from 10 to 50 kilometers (about 6 to 30 miles) above the Earth's surface.

What is ozone hole?

The ozone hole is a region of depleted layers of ozone above the Antarctic region, whose creation is linked to increased cases of skin cancer.

Factors responsible for the depletion of ozone:

Depletion of ozone is due to many factors, the most dominant of which is the release of chlorine from CFCs (Chlorofluorocarbons) which destroys the ozone. CFCs are released by products such as hairsprays, old refrigerators etc.

What are CFCs?

Chlorofluorocarbons, or CFCs, are compounds made up of combinations of the elements chlorine, fluorine and carbon; aerosols, refrigerants and foams contain CFCs. When these CFCs enter the air, they rise up into the atmosphere to meet up with and destroy ozone molecules. First used in 1928, CFCs have since become more common as various other CFC compounds were created. Some of the better-known CFCs are the Freon compounds, which were used as cooling ingredients in refrigerators and air conditioners. CFCs have lifetimes from 50 to 100 years.

How CFCs destroy the ozone?

- Once in the atmosphere, CFCs drift slowly upward to the stratosphere, where they are broken up by ultraviolet radiation, releasing the chlorine that catalytically destroys ozone. The process is as follows:
- UV radiation breaks off a chlorine atom from a CFC molecule.
- The chlorine atom attacks an ozone

molecule (O₃), breaking it apart and destroying the ozone.

- The result is an ordinary oxygen molecule (O₂) and a chlorine monoxide molecule (ClO).
- The chlorine monoxide molecule (ClO) is attacked by a free oxygen atom releasing the chlorine atom and forming an ordinary oxygen molecule (O₂).
- The chlorine atom is now free to attack and destroy another ozone molecule (O₃). One chlorine atom can repeat this destructive cycle thousands of times.

Applications of CFCs:

CFCs have some interesting properties which can be fully exploited; therefore there are plenty of uses for these molecules. CFCs are not flammable; therefore they were used as propellants that would push other molecules out of the aerosol sprays. For the same reason CFCs were used to form foamed plastics. Also low flammability enabled people to use these molecules to dry clean hot electronic components of devices such as air conditioning.

ICGS Varaha:

What is it? It is a new Offshore patrol vessel (OPV) launched by the Indian Coast Guard (ICG). It is fourth in the series of 98 M OPVs designed and built indigenously by Larsen & Toubro (L&T).

Key features:

- It is fitted with advanced technology navigation and communication equipment, sensor and machinery. Its weaponry includes one 30 mm and two 12.7 mm guns with fire control system. It has been designed to attain maximum speed of 26 knots and has endurance of 5,000 nautical miles.
- It also equipped with an Integrated Bridge System (IBS), Automated Power Management System (APMS), Integrated Platform Management System (IPMS), and High Power External Fire Fighting (EFF) system.

Gujarat government wants to rename Ahmedabad as Karnavati

Context: Gujarat government is planning to rename Ahmedabad as Karnavati.

Historical background:

Historically, the area around Ahmedabad has been inhabited since the 11th century, when it was known as Ashaval.

Chaulukya ruler Karna of Anhilwara (modern Patan) had waged a successful war against the Bhil king of Ashaval and established a city called Karnavati on the banks of the Sabarmati river.

- Sultan Ahmed Shah in 1411 A.D. Had laid the foundation of a new walled city near Karnavati and named it Ahmedabad after the four saints in the area by the name Ahmed.

Facts for Prelims:

ICGS Varaha:

What is it? It is a new Offshore patrol vessel (OPV) launched by the Indian Coast Guard (ICG). It is fourth in the series of 98 M OPVs designed and built indigenously by Larsen & Toubro (L&T).

Key features:

- It is fitted with advanced technology navigation and communication equipment, sensor and machinery. Its weaponry includes one 30 mm and two 12.7 mm guns with fire control system. It has been designed to attain maximum speed of 26 knots and has endurance of 5,000 nautical miles.
- It also equipped with an Integrated Bridge System (IBS), Automated Power Management System (APMS), Integrated Platform Management System (IPMS), and High Power External Fire Fighting (EFF) system.

Ozone hole

Context: A recent study by NASA has confirmed the recovery of the ozone layer due to the absence of chlorine from Chlorofluorocarbon(CFC) in the atmosphere.

Highlights of the study:

The study has confirmed the phenomenon by mapping the chemical composition of the atmosphere. The study revealed that chlorine levels declined by 0.8% each year between 2005 and 2016 and speculates that it could be the effect of the worldwide ban on the use of CFC. Previous research had hinted at the decrease in the depletion of ozone layer. Scientists believe that the ozone layer would fully recover by 2080.

What is ozone layer?

A layer of ozone envelops the Earth and keeps damaging ultraviolet, or UV, radiation from reaching living things on the planet's surface. The ozone layer exists mainly in the stratosphere, a layer of the atmosphere that reaches from 10 to 50 kilometers (about 6 to 30 miles) above the Earth's surface.

What is ozone hole?

The ozone hole is a region of depleted layers of ozone above the Antarctic region, whose creation is linked to increased cases of skin cancer.

Factors responsible for the depletion of ozone:

Depletion of ozone is due to many factors, the most dominant of which is the release of chlorine from CFCs (Chlorofluorocarbons) which destroys the ozone. CFCs are released by products such as hairsprays, old refrigerators etc.

What are CFCs?

Chlorofluorocarbons, or CFCs, are compounds made up of combinations of the elements chlorine, fluorine and carbon; aerosols, refrigerants and foams contain CFCs. When these CFCs enter the air, they rise up into the atmosphere to meet up with and destroy ozone molecules. First used in 1928, CFCs have since become more common as various other CFC compounds were created. Some of the better-known CFCs are the Freon compounds, which were used as cooling ingredients in refrigerators and air conditioners. CFCs have lifetimes from 50 to 100 years.

How CFCs destroy the ozone?

- Once in the atmosphere, CFCs drift

slowly upward to the stratosphere, where they are broken up by ultraviolet radiation, releasing the chlorine that catalytically destroys ozone. The process is as follows:

- UV radiation breaks off a chlorine atom from a CFC molecule.
- The chlorine atom attacks an ozone molecule (O₃), breaking it apart and destroying the ozone.
- The result is an ordinary oxygen molecule (O₂) and a chlorine monoxide molecule (ClO).
- The chlorine monoxide molecule (ClO) is attacked by a free oxygen atom releasing the chlorine atom and forming an ordinary oxygen molecule (O₂).
- The chlorine atom is now free to attack and destroy another ozone molecule (O₃). One chlorine atom can repeat this destructive cycle thousands of times.

Applications of CFCs:

CFCs have some interesting properties which can be fully exploited; therefore there are plenty of uses for these molecules. CFCs are not flammable; therefore they were used as propellants that would push other molecules out of the aerosol sprays. For the same reason CFCs were used to form foamed plastics. Also low flammability enabled people to use these molecules to dry clean hot electronic components of devices such as air conditioning.

Shakti- India's first indigenous microprocessor

Context: Indian Institute of Technology Madras (IIT Madras) researchers have designed India's first indigenous microprocessor called 'Shakti'.

About Shakti:

- It is aimed at developing industrial-grade microprocessors and other components of the microprocessor ecosystem.
- It was designed, developed and booted by IIT Madras with microchip fabricated in ISRO's Semi-Conductor Laboratory at Chandigarh.
- It has been developed under project

partly funded by Ministry of Electronics and Information Technology (MeitY), as part of two-decade-old efforts to develop indigenous microprocessors.

Significance:

The microprocessor will reduce dependency on imported microchips especially in communication and defence sectors and thus eliminate risk of cyber-attacks. It can be used in mobile computing, wireless and networking systems. It may also provide power to mobile phones, smart meters and surveillance cameras.

Companies Amendment (Ordinance), 2018

Context: The President has given his assent to the *Companies Amendment (Ordinance), 2018*. The Ordinance is promulgated to review offences under the Companies Act, 2013.

Key Amendments:

- **Shifting of the jurisdiction of 16 types of corporate offences** from the special courts to in-house adjudication, which is expected to reduce the case load of Special Courts by over 60%, thereby enabling them to concentrate on serious corporate offences.
- **The penalty has been reduced to half** for small companies and one person companies of that applicable to normal companies.
- **Instituting a transparent and technology driven in-house adjudication mechanism** on an online platform and publication of the orders on the website.
- **Strengthening in-house adjudication mechanism** by necessitating a concomitant order for making good the default at the time of levying penalty, to achieve the ultimate aim of achieving better compliance.
- **Declogging the NCLT** by enlarging the pecuniary jurisdiction of Regional Director, vesting in the Central Government the power to approve the alteration in the financial year of a

company and vesting the Central Government the power to approve cases of conversion of public companies into private companies.

World's longest DNA sequence decoded:

- A team of **UK scientists have claimed the record for decoding the world's longest DNA sequence**. The new holder of the trophy for world's longest DNA read is a team led by Matt Loose at Nottingham University.
- The scientists produced a DNA read that is about 10,000 times longer than normal, and twice as large as a previous record holder, from Australia.

Oceans heating faster: study

Context: Scientists from the Intergovernmental Panel on Climate Change (IPCC) have released their assessment on the health of world oceans.

Highlights of the study:

- For each of the last 25 years, oceans had absorbed heat energy equivalent to 150 times the amount of electricity mankind produces annually. That is 60% higher than what previous studies showed.
- The world's oceans have absorbed 90% of the temperature rise caused by man-made carbon emissions.

Concerns:

Oceans cover more than two thirds of the planet's surface and play a vital role in sustaining life on Earth.

How was it measured?

Scientists focussed on two gases found naturally in the atmosphere — Oxygen and carbon dioxide. Both gases are soluble in water, but the rate at which water absorbs them decreases as it warms. By measuring atmospheric oxygen and CO₂ for each year, scientists were able to more accurately estimate how much heat oceans had absorbed on a global scale.

Way ahead:

Mankind must once again revise down its carbon footprint, with emissions needing to fall 25% compared to previous estimates. The result significantly increases the confidence we can place in estimates of ocean warming and therefore helps reduce uncertainty.

ISRO's AstroSat

Context: Indian astrophysicists have discovered large ultraviolet lobes and jets, hurled out from a dying star- NGC 6302, popularly called the Butterfly Nebula, using data from AstroSat, the space observatory launched by the Indian Space Research Organisation (ISRO) in 2015.

What is a planetary nebula?

A planetary nebula is formed when a star like our Sun – or a few times heavier – is in its dying days. The term, a misnomer now, was coined by astronomers in the 19th century since the nebula looked like planets through their telescopes.

When hydrogen and helium fuel that kept the star shining gets exhausted, the star expands in size and becomes a red giant star. Such stars shed most of their outer layers which expands outwards, and the inner core, made of carbon and oxygen, shrinks further and becomes hotter. This hot core shines brightly in the ultraviolet, and ionises the expanding gas. This glowing ionised gas is what is seen as a planetary nebula.

About ASTROSAT:

- ASTROSAT is India's first dedicated multi wavelength space observatory. This scientific satellite mission endeavours for a more detailed understanding of our universe.
- ASTROSAT is designed to observe the universe in the Visible, Ultraviolet, low and high energy X-ray regions of the electromagnetic spectrum simultaneously with the help of its five payloads.
- Astrosat aims at understanding the high energy processes in binary star systems containing neutron stars and black holes, to estimate magnetic fields of neutron

stars, to study star birth regions and high energy processes in star systems lying beyond the Milky Way galaxy.

- This mission has put ISRO in a very exclusive club of nations that have space-based observatories. Only the United States, European Space Agency, Japan and Russia have such observatories in space.

NASA's Dawn asteroid mission

Context: Dawn, a NASA spacecraft that launched 11 years ago and studied two of the largest objects in the asteroid belt, has ended its mission after running out of fuel.

Background:

Scientists have known for about a month that Dawn was essentially out of hydrazine, the fuel that kept the spacecraft's antennae oriented toward Earth and helped turn its solar panels to the Sun to recharge.

Accomplishments:

- Dawn became the only spacecraft ever to orbit a cosmic body in the main asteroid belt between Mars and Jupiter in 2011 when it began circling the asteroid Vesta.
- Then it moved on to the dwarf planet Ceres in 2015, becoming the first spacecraft to visit a dwarf planet and the only spacecraft to orbit one.
- The unmanned spacecraft has travelled 4.3 billion miles (6.9 billion kilometers) since its launch in 2007. It is expected to remain in orbit around Ceres for decades, but will no longer be able to communicate with Earth.

About the Dawn Mission:

NASA's Dawn mission will study the asteroid Vesta and dwarf planet Ceres, celestial bodies believed to have accreted early in the history of the solar system. The mission will characterize the early solar system and the processes that dominated its formation.

Dawn is the only mission ever to orbit two extraterrestrial targets. It orbited giant asteroid Vesta for 14 months from 2011 to 2012, then continued on to Ceres, where it has been in orbit

since March 2015.

Earth BioGenome Project

Context: International biologists have launched Earth BioGenome Project (EBP)- an ambitious project to read all the DNA in each of the world's known animal, plant and fungal species over the next 10 years, sequencing 1.5m different genomes at an estimated cost of \$4.7bn.

About the Earth BioGenome Project (EBP):

- The Earth BioGenome Project plans to record the genomes — the DNA blueprint of life — of 1.5 million species of animal, plant, protozoa and fungi within a decade.
- So far, 19 research institutions around the world have signed up to take part in the EBP and more plan to join.
- They expect to read the full DNA sequence of all the world's eukaryotic species — organisms whose cells have a nucleus enclosed by membranes. These are animals, plants, fungi and protozoa, which encompass all of life except simple microbes (bacteria and archaea).
- Participating institutions aim to raise the required funds from governments, foundations and charities. The project's first phase — producing a reference genome for each of the 9,000 taxonomic families of eukaryotic life — will require \$600m, of which about one-third has already been provided.
- UK participants, led by the Wellcome Sanger Institute, will sequence the genetic codes of all 66,000 species known to inhabit Britain in a £100m national effort called the Darwin Tree of Life, as well as helping the broader international project.

Need:

The target of 1.5m genomes represents all eukaryotic species known and catalogued by science. Biologists say that many more remain undiscovered, with the real total estimated at 10m to 15m species. But they are disappearing fast as a result of human activity, in what scientists are calling Earth's sixth great

extinction; the fifth was the asteroid impact that wiped out dinosaurs 65m years ago.

Significance:

The blueprints for all living species will be a tremendous resource for new discoveries, understanding the rules of life, how evolution works, new approaches for the conservation of rare and endangered species, and provide new resources for researchers in agricultural and medical fields.

So far, only 3,300 eukaryotic species have had their DNA fully sequenced, 0.2% of the target. With strong international co-ordination, adequate funding and continuing rapid technological progress, 1.5m genomes could be achieved by 2028.

World's first sovereign Blue Bond by Seychelles

Context: The Republic of Seychelles has launched the world's first Sovereign Blue Bond, a financial instrument designed to support sustainable marine and fisheries projects. With this, Seychelles became the first nation to pioneer such a novel financing instrument.

- The bond raised USD 15 million from international investors. The bond demonstrates the potential for countries to harness capital markets for financing the sustainable use of marine resources.

Key features and uses of the Blue Bond:

- The Blue Bond is a part of an initiative that combines public and private investment to mobilise resources for empowering local communities and businesses. It will greatly assist Seychelles in achieving a transition to sustainable fisheries and safeguarding oceans.
- The Seychelles blue bond is partially guaranteed by a USD 5 million guarantee from the World Bank (IBRD) and is further supported by a USD 5 million concessional loan from the Global Environment Facility (GEF) which will partially cover interest payments for the bond.

- Proceeds from the bond will be utilised for the expansion of marine protected areas, improved governance of priority fisheries and the development of the Seychelles' blue economy.
- Proceeds from the bond will also contribute to the World Bank's South West Indian Ocean Fisheries Governance and Shared Growth Program, which supports countries in the region to sustainably manage their fisheries and increase economic benefits from their fisheries sectors.
- Grants will be provided through the Blue Grants Fund and will be managed by the Seychelles' Conservation and Climate Adaptation Trust (SeyCCAT).
- Loans will be provided through the Blue Investment Fund and will be managed by the Development Bank of Seychelles (DBS).

Facts for Prelims:

The Seychelles is an archipelagic nation consisting of 115 granite and coral islands in the Indian Ocean, off East Africa.

- As one of the world's biodiversity hotspots, Seychelles is balancing the need to develop economically and protect its natural resources.
- After tourism, the fisheries sector is the most important industry in the country, contributing significantly to annual GDP and employing 17 percent of the population. Fish products make up around 95% of the total value of domestic exports.

Location tracking devices, emergency buttons mandatory for new public service vehicles

Context: The Union Ministry of Road Transport and Highways has notified that all new public service vehicles, except auto rickshaws and e-Rickshaws, registered on and after January 1, 2019 will have to be mandatorily equipped with Vehicle Location Tracking (VLT) and Emergency Buttons.

- In case of older public service vehicles,

registered up to December 31, 2018, the respective State Governments will notify the date by which these vehicles have to install Vehicle Location Tracking Device and Panic Buttons.

Operational procedure for implementation of VLT cum Emergency buttons:

- The States are required to ensure execution of this order and check fitment and functional status of the VLT device in the public service vehicles at the time of checking of the vehicles for fitness certification.
- Command and Control Centres will be setup by the State or VLT manufacturers or any other agency authorised by the State Government.
- These centres will provide interface such as state emergency response centre, the transport department or Regional Transport Offices and its designated agencies.
- These centres will also provide feed to the 'VAHAN' data base or the relevant data base of the State with regard to the over speeding device 'healthstatus'.
- The details of each VLT device will be uploaded on the VAHAN database by the VLT device manufacturer using its secured authenticated access.

Roles of various stakeholders involved:

- ***The VLT device manufacturers or their authorised dealers*** will install the VLT devices in public service vehicles and register the devices along with details of vehicle on the corresponding backend systems in real-time.
- ***The public service vehicle owners*** have to ensure that the VLT devices installed in their vehicles are in working condition and regularly send required data to the corresponding backend system.
- ***VLT device manufacturers*** will get their devices tested for conformity of production every year after the first certification from the testing agencies referred to in Rule 126 of the Central Motor Vehicles Rules, 1989.
- ***The testing agencies*** will upload the

details of the VLT devices certified by them on the VAHAN database.

- **The State or Union Territories** will publish Internet Protocol address (IP address) and Short Message Service Gateway (SMS gateway) details of their respective emergency response system where VLT devices will send the emergency alerts on press of emergency button.

About VAHAN:

VAHAN is a highly flexible and comprehensive system that takes care of all the activities of Vehicle Registration, leaving the Transport Department to deal with more important business issues. The software enables the processes at RTO/DTO/MLO/SDM involving vehicle registration, fitness, taxes, permits and enforcement to get computerised.

Facts for Prelims:

Rashtriya Ekta Diwas:

- Rashtriya Ekta Diwas was observed on 31st October across the nation. It marks the occasion of the birth anniversary of Sardar Vallabhbhai Patel.
- The government, in 2015, decided to observe Sardar Patel Jayanti Day as Ekta Diwas. This occasion provides an opportunity to re-affirm the inherent strength and resilience of the nation to withstand the threats to its unity, integrity and security.

NASA's Kepler space telescope

Context: The Kepler space telescope has run out of fuel and will be retired after a 9-1/2-year mission.

- Currently orbiting the sun 156 million km from the earth, the spacecraft will drift further from our planet when mission engineers turn off its radio transmitters.

About Kepler Mission:

- Launched in 2009, the Kepler mission is specifically designed to survey our region of the Milky Way galaxy to

discover hundreds of Earth-size and smaller planets in or near the habitable zone and determine the fraction of the hundreds of billions of stars in our galaxy that might have such planets.

- Since the launch of the observatory in 2009, astronomers have discovered thousands of extra-solar planets, or exoplanets, through this telescope alone. Most of them are planets that are ranging between the size of Earth and Neptune (which itself is four times the size of Earth). Most of these planets were discovered in a small region of the constellation Cygnus, at which Kepler was pointed for the first four years of its mission.
- As of March 2018, Kepler had found 2,342 confirmed planets; add potential planets, and its find of exoworlds stands at 4,587.

What is the habitable zone?

If a planet is too close to the star it orbits, any water on the surface quickly boils off, forming a steam atmosphere. If the planet is too far from the star, any water on the surface freezes.

- The habitable zone (or “Goldilocks zone”) is the range of orbital distances from a star at which liquid water can exist on the surface of a planet.
- This range of distances changes depending on the size and temperature of the star.
- Earth is in the habitable zone of the sun – one of the reasons our planet has liquid water like oceans and lakes.

Deal inked for biofuel research

Context: The Department of Biotechnology (DBT) has signed a three-year, ₹ 11 crore deal with The Energy and Research Institute to set up a centre to produce “advanced biofuels and bio-commodities.”

Key facts:

- This is the ***fifth such dedicated centre for bioenergy-research and development set up by the Department.*** The others are located at the Indian

Agricultural Research Institute, New Delhi; the Indian Institute of Technology-Guwahati; Transtech Green Power Limited, Jaipur; and the Oil and Natural Gas Energy Centre in the National Capital Region.

- The bio-centre would be focussed on not only developing technology but also commercialising it.
- Other than fuel, by-products envisaged at the TERI-DBT Centre include food, feed, nutrition supplements, bio-plastics and novelty speciality chemicals.

Significance of Biofuels:

Globally, biofuels have caught the attention in last decade and it is imperative to keep up with the pace of developments in the field of biofuels. Biofuels in India are of strategic importance as it augers well with the ongoing initiatives of the Government such as Make in India, Swachh Bharat Abhiyan, Skill Development and offers great opportunity to integrate with the ambitious targets of doubling of Farmers Income, Import Reduction, Employment Generation, Waste to Wealth Creation.

Classification of Biofuels:

- ***1st generation biofuels*** are also called conventional biofuels. They are made from things like sugar, starch, or vegetable oil. Note that these are all food products. Any biofuel made from a feedstock that can also be consumed as a human food is considered a first generation biofuel.
- ***2nd generation biofuels*** are produced from sustainable feedstock. The sustainability of a feedstock is defined by its availability, its impact on greenhouse gas emissions, its impact on land use, and by its potential to threaten the food supply. No second generation biofuel is also a food crop, though certain food products can become second generation fuels when they are no longer useful for consumption. Second generation biofuels are often called “advanced biofuels.”

3rd generation biofuels are biofuel derived from algae. These biofuels are given their own

separate class because of their unique production mechanism and their potential to mitigate most of the drawbacks of 1st and 2nd generation biofuels.

Schemes & Committees

UN Habitat

Context: The National Mission for Clean Ganga partnered with UN Habitat recently organized a policy dialogue- ‘Urban Cafe: River for Habitat’ in New Delhi on the occasion of World Cities Day 2018.

- Experts in the sector got together to discuss the deep association that rivers have with various aspects of human civilization – our cities, our economy and various facets of our daily lives, the challenges to maintaining healthy river ecosystems and ways to deal with the same.

About UN Habitat:

The United Nations Human Settlements Programme (UN–Habitat) is the United Nations agency for human settlements and sustainable urban development. It was established in 1978 as an outcome of the First UN Conference on Human Settlements and Sustainable Urban Development (Habitat I) held in Vancouver, Canada in 1976.

- It is mandated by the United Nations General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. It is a member of the United Nations Development Group.
- The mandate of UN-Habitat derives from the Habitat Agenda, adopted by the United Nations Conference on Human Settlements (Habitat II) in Istanbul, Turkey, in 1996. The twin goals of the Habitat Agenda are adequate shelter for all and the development of sustainable human settlements in an urbanizing world.
- As an inter-governmental policy making

and decision making body, the Governing Council of UN-Habitat seeks to promote integral and comprehensive approach to human settlements, assist the countries and regions in addressing human settlement problems and strengthen cooperation among all countries on human settlement issue.

- UN-Habitat *reports to the United Nations General Assembly*.

World Cities Day 2018:

- World Cities Day is celebrated every year on October 31st.
- **Theme:** “Building sustainable and resilient cities”.
- **Significance:** The Day is expected to greatly promote the international community’s interest in global urbanization, push forward cooperation among countries in meeting opportunities and addressing challenges of urbanization, and contributing to sustainable urban development around the world.

Regional connectivity scheme (RCS)

Context: Opening the third round of the Regional connectivity scheme (RCS), the Ministry of Civil Aviation has invited proposals for air routes that include tourist destinations. The deadline for submitting applications is November 20.

- Under this scheme, the government has allowed seaplanes to operate commercial passenger flights. Included among the 10 destinations that the government proposes to connect through seaplanes are the recently unveiled Statue of Unity at Sardar Sarovar Dam, Sabarmati Riverfront in Ahmedabad, Tehri Dam in Uttarakhand and Nagarjuna Sagar in Telangana.

About UDAN (Ude Desh ka Aam Nagrik) scheme:

UDAN (Ude Desh Ka Aam Nagrik) is the Government’s initiative to make air travel to India’s tier II and tier III cities affordable to the aam aadmi. The idea is to put smaller cities and

remote regions on the aviation map, by getting domestic airlines to ply more regional routes.

- Under the scheme, the Government offers incentives to airlines to flag off new flights to neglected smaller cities and towns by providing Viability Gap Funding to make these operations profitable.
- Airlines are required to bid for exclusive rights to fly on the regional routes opened up under the scheme. They must sell a specific number of seats on each flight at a fixed fare of ₹ 2,500 for one hour of flying. In the case of helicopter operations, allowed for the first time now, fares are capped at ₹ 2,500 for a 30-minute flight.

Objectives of the scheme:

- The primary objective of RCS is to facilitate / stimulate regional air connectivity by making it cheap and affordable.
- Promoting affordability of regional air connectivity is envisioned under RCS by supporting airline operators through: Concessions and Financial (viability gap funding or VGF) support.

Significance:

The scheme gives India’s aviation sector a boost by giving a chance to small and first-time operators to be a part of the rapid growth in passenger traffic.

Palau becomes first country to ban sunscreen to save coral reefs:

- The Western Pacific nation of Palau has become the first country to ban many kinds of sunscreen, in a move to protect its coral reefs from chemicals that scientists say cause significant damage.
- Under the ban, which will take effect in 2020, “reef-toxic” sunscreen — defined as containing one of 10 prohibited chemicals, a list that could grow later — can be confiscated from tourists when they enter the country, and retailers who sell it can be fined up to \$1,000.

Chabahar Port

Context: Iran will handover the strategic Chabahar port to an Indian company within a month for operation as per an interim pact.

Under the agreement signed between India and Iran earlier, India is to equip and operate two berths in Chabahar Port Phase-I with capital investment of \$85.21 million and annual revenue expenditure of \$22.95 million on a 10-year lease.

Where is Chabahar port?

Iran's Chabahar port is located on *the Gulf of Oman* and is the only oceanic port of the country. The port gives access to the energy-rich Persian Gulf nations' southern coast and India can bypass Pakistan with the Chabahar port becoming functional.

Why Chabahar port is crucial for India?

- The first and foremost significance of the Chabahar port is the fact that **India can bypass Pakistan in transporting goods to Afghanistan**. Chabahar port will boost India's access to Iran, the key gateway to the International North-South Transport Corridor that has sea, rail and road routes between India, Russia, Iran, Europe and Central Asia.
- **Chabahar port will be beneficial to India in countering Chinese presence in the Arabian Sea** which China is trying to ensure by helping Pakistan develop the Gwadar port. Gwadar port is less than 400 km from Chabahar by road and 100 km by sea.
- With Chabahar port being developed and operated by India, **Iran also becomes a military ally to India**. Chabahar could be used in case China decides to flex its navy muscles by stationing ships in Gwadar port to reckon its upper hand in the Indian Ocean, Persian Gulf and Middle East.
- With Chabahar port becoming functional, **there will be a significant boost in the import of iron ore, sugar and rice to India**. The import cost of oil to India will also see a considerable decline. India has already increased its

crude purchase from Iran since the West imposed ban on Iran was lifted.

- **Chabahar port will ensure in the establishment of a politically sustainable connectivity between India and Afghanistan**. This is will, in turn, lead to better economic ties between the two countries.
- From a diplomatic perspective, **Chabahar port could be used as a point from where humanitarian operations could be coordinated**.

National River Ganga (Rejuvenation, Conservation and Management) Bill, 2018

Context: The government is planning to introduce the National River Ganga (Rejuvenation, Conservation and Management) Bill, 2018 in the upcoming parliament winter session.

Highlights of the Bill:

- The bill propose to **ban the construction** of jetties, ports or "permanent hydraulic structures" in the Ganga, **unless permitted by the National Ganga Rejuvenation Authority**.
- It proposes to create a **management structure** that will supervise the health of the 2,500-kilometre long Ganga which, the draft Bill defines, as 'India's national river.'
- The Bill lays down a host of **restrictions to ensure the "uninterrupted, ecological flow"** of the river. Currently, a host of dams in the upper stretches of the river lead to the river's flow being obstructed.
- The proposed legislation specifies that **"unauthorized" activities that cause obstruction or discontinuity of water in the River Gang** due to engineered diversion of water or stoppage of water. Carrying out such activities are liable to a prison term of 3 years or fines upto □ 50 crore, or both.
- The **Armed Ganga Protection Corps (GPC)** personnel will be provided by the

ministry of home affairs and will be deployed by the National Ganga Rejuvenation Authority. The GPC personnel will have power to arrest those who pollute the river covering offences like obstructing the flow of the river to commercial fishing.

The Bill has listed out a list of offences marked as cognizable which includes:

- Construction activities causing obstruction in the river.
- Withdrawal of ground water for industrial or commercial consumption from the land fronting the river and its tributaries.
- Commercial fishing or aqua culture in the river and its tributaries.
- Discharging untreated or treated sewage into the river.

Background:

In July 2016, a committee was constituted under retired judge of the Allahabad High Court Justice Girdhar Malviya who had submitted a draft Bill last year named The National River Ganga (Rejuvenation, Protection and Management) Bill, 2017. Subsequently, a four-member committee was set up by the Ministry to examine that and the Ministry has circulated a Cabinet note which includes a revised version of that draft Bill.

Ganga Gram Project

Context: Ganga Gram Swachchhata Sammelan was recently organized at Chyavan Rishi Ashram in Chousa Village of Buxar district in Bihar.

About Ganga Gram project:

Ganga Gram vision is an integrated approach for holistic development of villages situated on the banks of River Ganga with active participation of the villagers.

The objectives of Ganga Gram Project include solid and liquid waste management, renovation of ponds and water resources, water conservation projects, organic farming, horticulture, and promotion of medicinal plants.

About Namami Gange Programme:

Namami Gange programme was launched as a mission to achieve the target of cleaning river Ganga in an effective manner with the unceasing involvement of all stakeholders, especially five major Ganga basin States – Uttarakhand, Uttar Pradesh, Jharkhand, Bihar and West Bengal. The programme envisages: River Surface Cleaning, Sewerage Treatment Infrastructure, River Front Development, Bio-Diversity, Afforestation and Public Awareness.

Implementation:

The program would be implemented by the National Mission for Clean Ganga (NMCG), and its state counterpart organizations i.e., State Program Management Groups (SPMGs). In order to improve implementation, a three-tier mechanism has been proposed for project monitoring comprising of a) High level task force chaired by Cabinet Secretary assisted by NMCG at national level, b) State level committee chaired by Chief Secretary assisted by SPMG at state level and c) District level committee chaired by the District Magistrate. The program emphasizes on improved coordination mechanisms between various Ministries/Agencies of Central and State governments.

Border Area Development Programme (BADP)

Context: The Centre has released more than Rs. 113 crore to Assam, Nagaland, Sikkim, Gujarat, Rajasthan and Uttarakhand under the Border Area Development Programme (BADP).

Background:

The home ministry, till now, has released a total of Rs. 637.98 crore during the 2018-19 period to states having an International Border. The funds released are in addition to the Rs. 1,100-crore released in 2017-18 for the all-round development of villages located along the International Border in 17 states.

About Border Area Development Programme

(BADP):

- The Border Area Development Programme (BADP) has been implemented through 17 States (viz. Arunachal Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttar Pradesh, Uttarakhand and West Bengal) which constitute the International Land Borders.
- The main objective of the BADP is to meet the special developmental needs and well being of the people living in remote and inaccessible areas situated near the international border and to saturate the border areas with the entire essential infrastructure through convergence of Central/ State/ BADP/ Local schemes and participatory approach.

Funding and schemes covered:

- The funds under BADP are provided to the States as a 100% non-lapsable Special Central Assistance. The programme is supplemental in nature and the budget allocation for the financial year 2015-16 is Rs.990 crore.
- The BADP schemes include construction of primary health centres, schools, supply of drinking water, community centres, connectivity, drainage to enable sustainable living in border areas.
- It also covers schemes or activities relating to Swachhta Abhiyan, skill development programmes, promotion of sports activities in border areas, promotion of rural tourism, border tourism, protection of heritage sites, construction of helipads in remote and inaccessible hilly areas, which do not have road connectivity.

First India-Nepal passenger train on broad gauge to make first run in December

Context: The first passenger train to run on

broad gauge between India and Nepal will run from December this year.

Key facts:

- The train will run from Jayanagar in Bihar to Kurtha in Dhanusa district in Janakpur Zone of south-eastern Nepal, which is a 34 km stretch.
- **No visa** will be required for Indian and Nepalese nationals crossing the border through this stretch.

Significance:

After Beijing decided to extend its railway network up to Kathmandu, New Delhi proposed the construction of new railway links during Prime Minister K P Sharma Oli's recent visit to India. The move is being seen as part of efforts to counter China's plans to forge rail links with Nepal.

National Mission for Clean Ganga (NMCG)

Context: National Mission for Clean Ganga (NMCG) in partnership with HCL Foundation and German development agency GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) had organized "**Bal Ganga Mela**" at HCL's Noida campus on November 4, 2018.

- The Mela was organized with the objective to create awareness among school children on the importance of water in general and rivers in particular, so that they understand the importance of unpolluted, clean water and water security. Also, to foster respect for the natural environment and motivate children to become ambassadors of change, who influence and motivate others towards river rejuvenation and water conservation.

Facts for Prelims:

November 4 is symbolic as it marks the declaration of Ganga as the National River of India in 2008 and is dedicated to raising awareness about rejuvenating the holy river and teaching children to become environmentally

aware and responsible citizens.

About NMCG:

The National Mission for Clean Ganga (NMCG) is the *implementation wing of National Ganga Council* which was set up in October 2016 under the River Ganga (Rejuvenation, Protection and Management) Authorities order 2016. The order dissolved National Ganga River Basin Authority.

NMCG has a two tier management structure and comprises of Governing Council and Executive Committee. Both of them are headed by Director General, NMCG. Executive Committee has been authorized to accord approval for all projects up to Rs.1000 crore.

The order envisages five tier structure at national, state and district level to take measures for prevention, control and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water so as to rejuvenate the river Ganga as below:

1. National Ganga Council under chairmanship of Hon'ble Prime Minister of India.
2. Empowered Task Force (ETF) on river Ganga under chairmanship of Hon'ble Union Minister of Water Resources, River Development and Ganga Rejuvenation.
3. National Mission for Clean Ganga(NMCG).
4. State Ganga Committees.
5. District Ganga Committees in every specified district abutting river Ganga and its tributaries in the states.

Economic issues

Support Initiatives for MSME Sector

Context: The government has launched a historic support and outreach programme for the Micro, Small and Medium Enterprises (MSME) sector. As part of this programme, the Prime Minister of India recently unveiled 12 key initiatives which will help the growth,

expansion and facilitation of MSMEs across the country.

Significance:

There are five key aspects for facilitating the MSME sector. These include access to credit, access to market, technology upgradation, ease of doing business, and a sense of security for employees. The 12 initiatives will address each of these five categories.

The 12 initiatives include:

1. **59 minute loan portal** to enable easy access to credit for MSMEs. Loans upto Rs. 1 crore can be granted in-principle approval through this portal, in just 59 minutes.
2. **A 2% interest subvention** for all GST registered MSMEs, on fresh or incremental loans. For exporters who receive loans in the pre-shipment and post-shipment period, there will be an increase in interest rebate from 3% to 5%.
3. All companies with a turnover more than Rs. 500 crore, must now compulsorily be brought on the **Trade Receivables e-Discounting System (TReDS)**. Joining this portal will enable entrepreneurs to access credit from banks, based on their upcoming receivables. This will resolve their problems of cash cycle.
4. Public sector companies have now been asked to compulsorily **procure 25%, instead of 20% of their total purchases, from MSMEs**.
5. Out of the 25% procurement mandated from MSMEs, **3% must now be reserved for women entrepreneurs**.
6. All public sector undertakings of the Union Government must now **compulsorily be a part of GeM**. He said they should also get all their vendors registered on GeM.
7. **20 hubs will be formed across the country**, and 100 spokes in the form of tool rooms will be established.
8. **Clusters will be formed of pharma MSMEs**. 70% cost of establishing these clusters will be borne by the Union Government.

9. *The return under 8 labour laws and 10 Union regulations* must now be filed only once a year.
10. Now the establishments to be visited by an Inspector will be decided through a *computerised random allotment*.
11. Under air pollution and water pollution laws, now both these have been *merged as a single consent*. The return will be accepted through self-certification.
12. *An Ordinance has been brought, under which, for minor violations under the Companies Act, the entrepreneur will no longer have to approach the Courts*, but can correct them through simple procedures.

Public Credit Registry (PCR)

Context: The Reserve Bank has initiated steps to set up a wide-based digital Public Credit Registry (PCR) to capture details of all borrowers, including wilful defaulters and also the pending legal suits in order to check financial delinquencies.

- The PCR will also include data from entities like market regulator SEBI, the Corporate Affairs Ministry and the Insolvency and Bankruptcy Board of India to enable banks and financial institutions to get a 360-degree profile of existing and prospective borrowers on a real-time basis.

About Public Credit Registry:

What is it?

The PCR will be an extensive database of credit information for India that is accessible to all stakeholders. The idea is to capture all relevant information in one large database on the borrower and, in particular, the borrower's entire set of borrowing contracts and outcomes.

Management of PCR:

Generally, a PCR is managed by a public authority like the central bank or the banking supervisor, and reporting of loan details to the PCR by lenders and/or borrowers is mandated by law. The contractual terms and outcomes covered and the threshold above which the contracts are to be reported vary in different

jurisdictions, but the idea is to capture all relevant information in one large database on the borrower, in particular, the borrower's entire set of borrowing contracts and outcomes.

Need for a PCR:

- A central repository, which, for instance, captures and certifies the details of collaterals, can enable the writing of contracts that prevent over-pledging of collateral by a borrower. In absence of the repository, the lender may not trust its first right on the collateral and either charge a high cost on the loan or ask for more collateral than necessary to prevent being diluted by other lenders. This leads to, what in economics is termed as, pecuniary externality – in this case, a spillover of one loan contract onto outcomes and terms of other loan contracts.
- Furthermore, absent a public credit registry, the 'good' borrowers are disadvantaged in not being able to distinguish themselves from the rest in opaque credit markets; they could potentially be subjected to a rent being extracted from their existing lenders who enjoy an information monopoly over them. The lenders may also end up picking up fresh clients who have a history of delinquency that is unknown to all lenders and this way face greater overall credit risk.

Benefits of having a PCR:

- A PCR can potentially help banks in credit assessment and pricing of credit as well as in making risk-based, dynamic and counter-cyclical provisioning.
- The PCR can also help the RBI in understanding if transmission of monetary policy is working, and if not, where are the bottlenecks.
- Further, it can help supervisors, regulators and banks in early intervention and effective restructuring of stressed bank credits.
- A PCR will also help banks and regulators as credit information is a 'public good' and its utility is to the

credit market at large and to society in general.

Task force on PCR:

- The Reserve Bank of India (RBI) had formed a high-level task force on public credit registry (PCR) for India. The task force was chaired by Y M Deosthalee.
- The task force has suggested the registry should capture all loan information and borrowers be able to access their own history. Data is to be made available to stakehold

Facts for Prelims:

Dharma Guardian 2018:

- What is it? It is a joint military exercise between India and Japan.
- Why in News? The first edition of this joint military exercise is being held in Mizoram.
- Aim: The exercise is aimed at developing mutual understanding and respect between militaries of both countries, as also facilitate in tracking worldwide phenomenon of terrorism.

Turga Pumped Storage

Context: A Loan Agreement was recently signed between India and Japan on Japanese Official Development Assistance loan for the construction of Turga Pumped Storage (I) of Yen 29.442 Billion (Rs. 1817 crore approximately).

About Turga Pumped Storage project:

- The Turga Pumped Storage Project on Turga nala is a closed loop type Pumped Storage Project located in Purulia district of West Bengal.
- The Turga Pumped Storage Project envisages utilization of rainfall in the catchment of the Turga Nala in Ayodhya hills for peak power generation for a Pumped Storage type project development.
- The project envisages construction of Upper Dam across Turga Nala, a

tributary of Subarnarekha river and a water conductor system with an underground Power House on the downstream of Upper Dam and a Lower Dam having intermediate catchment of 4.37 sq. km.

- The objective of the Project is to strengthen the capability to respond to fluctuation in supply and demand of power and to improve stability of the power supply by constructing the pumped storage facilities, thereby contributing to the Industrial Development and Living Standard Improvement in the State of West Bengal.

Significance:

India and Japan have had a long and fruitful history of bilateral development cooperation since 1958. In the last few years, the economic cooperation between India and Japan has steadily progressed. This further consolidates and strengthens the Strategic and Global Partnership between India and Japan.

Society for worldwide interbank financial telecommunication

Context: The Head of the US Treasury Steven Mnuchin has announced that Washington wants the world-wide payment network to cut off its services to the entities that were affected by Iran sanctions and warned that otherwise SWIFT might be sanctioned as well.

Background:

The US will reintroduce sanctions against Tehran that were earlier lifted under the Iran nuclear deal, on November 5. These sanctions will affect the country's energy, banking, and shipping sectors.

What is SWIFT?

The SWIFT is a global member-owned cooperative that is headquartered in Brussels, Belgium. It was founded in 1973 by a group of 239 banks from 15 countries which formed a co-operative utility to develop a secure electronic messaging service and common

standards to facilitate cross-border payments. It carries an average of approximately 26 million financial messages each day. In order to use its messaging services, customers need to connect to the SWIFT environment.

Functions:

- SWIFT does not facilitate funds transfer: rather, it sends payment orders, which must be settled by correspondent accounts that the institutions have with each other.
- The SWIFT is a secure financial message carrier — in other words, it transports messages from one bank to its intended bank recipient.
- Its core role is to provide a secure transmission channel so that Bank A knows that its message to Bank B goes to Bank B and no one else. Bank B, in turn, knows that Bank A, and no one other than Bank A, sent, read or altered the message en route. Banks, of course, need to have checks in place before actually sending messages.

Significance of SWIFT:

Messages sent by SWIFT's customers are authenticated using its specialised security and identification technology. Encryption is added as the messages leave the customer environment and enter the SWIFT Environment. Messages remain in the protected SWIFT environment, subject to all its confidentiality and integrity commitments, throughout the transmission process while they are transmitted to the operating centres (OPCs) where they are processed — until they are safely delivered to the receiver.

Partial credit enhancement (PCE)

Context: The Reserve Bank of India (RBI) has allowed banks to provide partial credit enhancement (PCE) to bonds issued by systemically important non-deposit taking non-banking financial companies (NBFCs) registered with the RBI and housing finance companies (HFCs) registered with the National Housing Bank.

Significance:

- The move is aimed at enhancing the credit rating of the bonds and enabling these NBFCs to access funds from the bond market on better terms.
- PCE is expected to help NBFCs and HFCs raise money from insurance and provident or pension funds who invest only in highly-rated instruments.

Key facts:

- The tenure of these bonds shall not be less than three years and proceeds from them shall only be utilized to refinance existing debt.
- Banks shall introduce appropriate mechanisms to monitor and ensure that the end-use condition is met.
- The central bank has restricted the exposure of a bank through PCEs to bonds issued by each such NBFC or HFC to 1% of capital funds of the bank within the current single and group borrower exposure limits.
- Banks are allowed to provide PCE as non-funded subordinated facility in the form of a contingent line of credit to be used in case of shortfall in cash flows for servicing the bonds and thereby improve the credit rating of the bond issue.

Background:

The incentive comes at a time when NBFCs and HFCs have requested the government and regulators to ensure that confidence returns to the market. They have sought relaxations of the National Housing Bank's credit rating norms related to refinance, lowering of the criterion on years of existence to one year, providing for 10% of the loan loss by the government and capital infusion in banks.

What is credit enhancement?

Credit enhancement means improving the credit rating of a corporate bond. For example, if a bond is rated BBB, credit enhancement, which is basically an assurance of repayment by another entity, can improve the rating to AA. This is done to provide an additional source of assurance or guarantee to service the bond.

RBI has now allowed banks to provide credit enhancement up to 20% of the total bond issue. This means banks (one or many together) can assure repayment of dues related to a bond issue up to 20% of the value. Other than banks, organisations such as India Infrastructure Finance Co. Ltd also provide this facility.

BENEFITS FOR THE ISSUER:

Typically, bonds issued by subsidiaries or special purpose vehicles (SPVs) of infrastructure companies seek enhancement. Since the projects take a long time to become operational and generate money, along with the risk of implementation, often their formal credit rating is not very high. Through the credit enhancement facility, the existing rating can be improved at an early stage, which enables the issuer to raise funds at a relatively lower yield. Higher the credit rating, lower is the cost of raising funds.

Since these bonds are long-term in nature, they appeal to institutional investors like pension funds and insurers. However, these investors, especially pension funds, invest mostly in investment grade securities which are at least AA-rated. Credit enhancement makes the bonds more attractive by improving the rating enough so that institutional investors become interested in adding these to their portfolios.

BENEFIT FOR THE INVESTOR:

For the investor, the facility provides a sort of insurance in case of hard times. Basically, the credit enhancement gets used only when there is a shortfall in either paying interest or repaying principal. Hence, investors are more secure about repayment even if there is uncertainty regarding cash flows for some time.

BENEFITS FOR THE BOND MARKET:

The bond market will benefit as more issues get placed, which will help in developing the secondary market. This is useful in giving investors an early exit route, and in adding stability to secondary market transactions in long-term corporate bonds. At present, however, there is not much trading happening in long-term corporate bonds from infrastructure companies in the secondary market.

World Bank's Doing Business Report, 2018

Context: The World Bank has released its latest Doing Business Report (DBR, 2019). The report ranks 190 economies based on how easy it is to do business there, taking into account trading regulations, property rights, contract enforcement, investment laws, the availability of credit and a number of other factors. The first report was published in 2003.

Performance of various countries:

- **The top five overall are:** New Zealand, Singapore, Denmark, Hong Kong and Korea. The U.S. ranks 8th, down from 6th last year.
- As per the latest report, Afghanistan had moved up the most, by 16 spots, from 183th in last year's ranking to 167th this year.
- China and India — two economies with the largest populations — are among top 10 improvers this year.
- Afghanistan, Djibouti, Azerbaijan, Togo, Kenya, Côte d'Ivoire, Turkey and Rwanda rounded out the top 10 most improved list. In addition, Djibouti and India are the only economies to make the 10 top most improved list for the second consecutive year.

Performance of India:

- **India climbed 23 spots from a year ago to rank 77** out of 190 countries in the World Bank's latest report on the ease of doing business.
- It was also among the top 10 most improved economies along with countries such as China, Djibouti and Azerbaijan.
- The ease of doing business in India improved notably after a series of reforms made it easier for companies to get construction permits, pay taxes and trade across borders.

Areas of improvement:

- Entrepreneurs were able to start a business more easily after India

integrated multiple application forms into a general incorporation form. Reforms also “streamlined the process of obtaining a building permit and made it faster and less expensive to obtain a construction permit.”

- Last year, the country amended its insolvency and bankruptcy code which prevented willful defaulters from buying up any of their own troubled assets at discounted rates. That strengthened access to credit as “secured creditors are now given absolute priority over other claims within insolvency proceedings”.
- Other areas of improvement included simplifying India’s complex tax structure that made it easier to pay taxes. Initiatives implemented under the National Trade Facilitation Action Plan 2017-2020 improved the efficiency of cross-border trading and reduced the time taken to meet compliance requirements.

Section 7 of the RBI Act

Context: In an unprecedented move, the government has reportedly invoked Section 7 of the Reserve Bank of India Act.

Background:

- The issue of invoking Section 7 (1) of RBI Act came up during the hearing of Allahabad high court in a case filed by the Independent Power Producers Association of India challenging RBI’s 12 February circular. The high court, in August, said the government could issue directions to RBI under Section 7 of RBI Act.
- Against this backdrop, the government issued a letter to the RBI governor seeking his views on exemption for power companies in relation to the 12 February circular. Another instance was when the government on 10 October sought the governor’s views on using RBI’s capital reserves for providing liquidity.

What does Section 7 of the RBI Act say?

According to Section 7 of the RBI Act the central government is empowered to issue directions it considers necessary for public interest to the central bank from time to time after consultation with the RBI governor.

“The Central Government may from time to time give such directions to the Bank as it may, after consultation with the Governor of the Bank, consider necessary in the public interest,” **Section 7(1) of the RBI Act reads.**

The sub-section under Section 7 further reads, “Subject to any such directions, the general superintendence and direction of the affairs and business of the Bank shall be entrusted to a Central Board of Directors which may exercise all powers and do all acts and things which may be exercised or done by the Bank.”

Section 7(3) reads, “Save as otherwise provided in regulations made by the Central Board, the Governor and in his absence the Deputy Governor nominated by him in this behalf, shall also have powers of general superintendence and direction of the affairs and the business of the Bank, and may exercise all powers and do all acts and things which may be exercised or done by the Bank.”

However, complete implication of the section cannot be determined because it has never been invoked in the history of independent India.

Why is Section 7 seen as an extreme measure?

This section has never been used in till now. It was not used even when the country was close to default in the dark days of 1991, nor in the aftermath of the 2008 global financial crisis. It is not clear how this Section operates since it has never been used. The aggressive move could scandalise a section of academia and experts, while raising questions about the government’s intentions and the impact on RBI’s autonomy.

Environmental Issues

World Food Programme (WFP)

Context: United Nations World Food Programme

(WFP) and Chinese e-commerce giant Alibaba Group have formed strategic partnership to support efforts eliminate hunger globally by 2030.

- As per the agreement, Alibaba will lend its cutting-edge technology and resources to support digital transformation of WFP's operations.

“World Hunger Map”:

Alibaba Cloud, the cloud computing arm of Alibaba will work with WFP to develop digital “World Hunger Map”. The map will help to monitor global hunger and operations to end scourge by 2030 which is one of UN's key Sustainable Development goals. It also aims to boost efficiency of interventions and shorten emergency response times.

About WFP:

- The World Food Programme (WFP) is *the food assistance branch of the United Nations and the world's largest humanitarian organization* addressing hunger and promoting food security.
- The WFP strives to eradicate hunger and malnutrition, with the ultimate goal in mind of eliminating the need for food aid itself. It is a member of the United Nations Development Group and part of its Executive Committee.
- Born in 1961, WFP pursues a vision of the world in which every man, woman and child has access at all times to the food needed for an active and healthy life. The WFP is governed by an Executive Board which consists of representatives from member states.
- *The WFP operations are funded by voluntary donations from world governments, corporations and private donors.* WFP food aid is also directed to fight micronutrient deficiencies, reduce child mortality, improve maternal health, and combat disease, including HIV and AIDS.

Earth has three moons

Context: After more than half a century of speculation, it has now been confirmed that Earth has two dust ‘moons’ orbiting it which are nine times wider than our planet.

- The new moons exist at a distance of approximately 250,000 miles — more or less the same distance as our moon.

Background:

The presence of the *dust ‘moons’ or Kordylewski clouds* had been inferred by researchers since long before. But the first glimpse of the clouds was seen only in 1961 by Polish astronomer Kazimierz Kordylewski, after whom the dust clouds were named.

Facts about the newly discovered dust moons:

- The new findings note that each Kordylewski cloud is about 15 by 10 degrees wide, or equal to 30 by 20 lunar disks in the night sky.
- They are spread over a space area that is almost nine times the width of Earth — about 65,000 by 45,000 miles in actual size.
- The dust ‘moons’ are huge but they are made of tiny dust particles that barely measure one micrometre across.
- When sunlight hits the dust particles, they glow very faintly, much like the zodiacal light we receive from the dust scattered in between planetary orbits.
- Since these satellite dust clouds emit an extremely faint light, they are very difficult to find amidst the star light, sky glow, galactic light and zodiacal light in the sky though they are as close to us as the moon.

About Kordylewski clouds:

The Kordylewski clouds are always changing. They might be stable in orbit and may have existed for millions of years, but the ingredients that make the clouds — the dust particles — are always getting swapped for others. Some escape to gravitational pulls from Earth or the moon, while others come from interplanetary spaces and meteor showers.

How Lagrange points in space helped find the extra ‘moons’?

Speculations about Earth having multiple moons have taken turns in astronomer circles for years. It was realised that if extra moons did

exist, they could only do so in stable points in Earth's orbit.

Lagrange points are sweet spots in a planetary orbit where the pull of gravity working from two opposing celestial bodies is balanced due to the centripetal force of their orbits. Thus, an object at a Lagrange point will remain fixed at a constant distance from both the moon and Earth.

- In the 1950s, Kordylewski searched two Lagrange points — L4 and L5 — where he found the first glimpse of the two dust clouds orbiting Earth.

Can these dust 'moons' be dangerous or will they help us?

These huge clouds of dust could add much to space exploration efforts when it comes to fuel consumption and safety issues. Sometimes, satellites need to be parked at the Lagrange points so that the spacecraft consumes minimal fuel and can still stay in orbit.

The James Webb Space Telescope will be set up at the L2 Lagrange point in 2020 for this purpose. Moreover, space agencies are also planning to use Lagrange points as transfer stations for Mars missions.

OPERATION GREENS

Context: Ministry of Food Processing Industries(MoFPI) has approved the operationalisation strategy for Operation Greens.

The Strategy will comprise of a series of measures as decided by the Ministry:

Short term Price Stabilisation Measures:

- NAFED will be the Nodal Agency to implement price stabilisation measures.
- MoFPI will provide 50 percent of the subsidy on transportation of Tomato Onion Potato (TOP) Crops from production to storage; and hiring of appropriate storage facilities for TOP Crops.

Long Term Integrated value chain development projects:

- Capacity Building of FPOs & their consortium.
- Quality production.
- Post-harvest processing facilities.
- Agri-Logistics.
- Marketing / Consumption Points.
- Creation and Management of e-platform for demand and supply management of TOP Crops.

About Operation Greens:

Operation Greens was announced in the Budget speech of 2018-19 with an outlay of Rs 500 crores to stabilize the supply of Tomato, Onion and Potato(TOP) crops and to ensure availability of TOP crops throughout the country round the year without price volatility.

Major objectives of "Operation Greens" are as under:

- Enhancing value realisation of TOP farmers by targeted interventions to strengthen TOP production clusters and their FPOs, and linking/connecting them with the market.
- Price stabilisation for producers and consumers by proper production planning in the TOP clusters and introduction of dual use varieties.
- Reduction in post-harvest losses by creation of farm gate infrastructure, development of suitable agro-logistics, creation of appropriate storage capacity linking consumption centres.
- Increase in food processing capacities and value addition in TOP value chain with firm linkages with production clusters.
- Setting up of a market intelligence network to collect and collate real time data on demand and supply and price of TOP crops.

Significance of Operation greens:

Operation Green (OG) wants to replicate the success story of Operation Flood, in fruits and vegetables, starting with three basic vegetables—tomatoes, onions and potatoes (TOP). The main objective of OG is to reduce price volatility in these commodities, and thereby helping farmers augment incomes on a

sustainable basis, as also provide these basic vegetables to consumers at affordable prices.

United Nations World Tourism Organization (UNWTO)

Context: 109th session of United Nations World Tourism Organization (UNWTO) Executive Council is being held in Manama, Bahrain. The Executive Council will discuss several topics on the agenda that are related to the development of global Tourism sector.

About UNWTO:

What is it?

The World Tourism Organization (UNWTO) is the United Nations agency responsible for the promotion of responsible, sustainable and universally accessible tourism.

Members:

UNWTO's membership includes 158 countries, 6 Associate Members and over 500 Affiliate Members representing the private sector, educational institutions, tourism associations and local tourism authorities.

What it does?

- As the leading international organization in the field of tourism, UNWTO promotes tourism as a driver of economic growth, inclusive development and environmental sustainability and offers leadership and support to the sector in advancing knowledge and tourism policies worldwide.
- UNWTO encourages the implementation of the Global Code of Ethics for Tourism, to maximize tourism's socio-economic contribution while minimizing its possible negative impacts, and is committed to promoting tourism as an

instrument in achieving the Sustainable Development Goals (SDGs), geared towards reducing poverty and fostering sustainable development worldwide.

- UNWTO generates market knowledge, promotes competitive and sustainable tourism policies and instruments, fosters tourism education and training, and works to make tourism an effective tool for development through technical assistance projects in over 100 countries around the world.

TARGET IAS WEEKEND BATCH

For +1, +2 & UG

Registration till March 31

Limited Seats

Batch Starting from: April 06, 2019

Saturday: 3-6 PM

Sunday: 11-2 PM

Salient Features:

- ◆ Right Planning, Guidance & Success Strategy
- ◆ Strong Foundation for General Studies & Aptitude
- ◆ Writing Skill Improvement
- ◆ Thought Enhancement & Analysis
- ◆ Classroom Teaching & Complete Notes
- ◆ Regular Assessment Tests
- ◆ Motivation & Counselling
- ◆ Group Size 20-25 Students

OUR IAS / PCS RESULTS 2018

UPSC PRELIM

- Jasnoor
- Sahil
- Gursharan
- Sohail

PPSC PRELIM

- Jasnoor
- Gursharan
- Sachin
- Deepkaran
- Harneet
- Kanika

IAS MAINS SUCCESS 2018



JASNOOR



SAHIL

PPSC Mains result awaited



PANACEA BHARTI[®] Institute Pvt. Ltd.

Opp. New Court, Ferozpur Road, Ludhiana.

M: 8054407407

www.panaceabharti.com