



INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

CURRENT AFFAIRS

MAY 2019

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GENERAL STUDIES - I

Topics: Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

1. STUCCO SCULPTURE AND IKSHVAKU DYNASTY

What to study?

- For prelims and mains: what are stucco sculptures and about Ikshvaku dynasty, recent findings.
- Why in news?** Indian archaeologists recently unearthed a rare life-sized stucco sculpture from a Buddhist site at Phanigiri in Suryapet, Telangana.

Key facts:

- It is the biggest stucco sculpture found so far in India. It is about 1.73 metres in height and 35 cm in width.
- It represents a **Bhodhisattva in Jathaka Chakra**.
- It was created nearly 1,700 years ago by craftsmen at Phanigiri at peak of **Ikshavaku dynasty**.

Who is Bhodhisattva?

- A bodhisattva is a Buddhist deity who has attained the highest level of enlightenment, but who delays their entry into Paradise in order to help the earthbound. The bodhisattva, known in Sanskrit as Avalokiteśvara, takes both male and female form and is associated with the qualities of mercy and compassion.

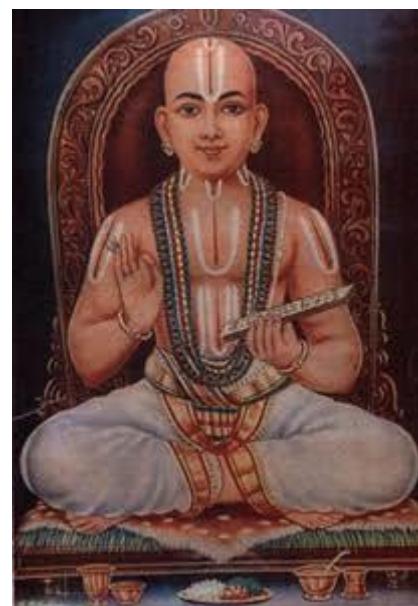
The Ikshvaku dynasty:

- As per Puranic literature, it was founded by king Ikshvaku. It is also known as Sūryavaṁśa (the Solar dynasty).
- Important Personalities belonging to this dynasty includes: Lord Rama, Twenty-two out of twenty-four Jain Tirthankara, and according to Buddhist texts, Prince Siddhartha also belonged to this dynasty.
- Sources: The Hindu.

2. SRI VEDANTA DESIKAN

What to study?

- For prelims: about Sri Vedanta Desikar- teachings, achievements and literary works.
- For mains: significance and relevance of his teachings.
- Why in News?** A postage stamp has been released to commemorate **750th birth anniversary of Sri Vedanta Desikan** and his great philosopher's life and highly valued work.



About Sri Vedanta Desikan:

- Sri Vedanta Desikan (1268–1369) was a Sri Vaishnava guru/philosopher and one of the most brilliant stalwarts of Sri Vaishnavism in the post-Ramanuja period.
- He was a poet, devotee, philosopher and master-teacher (desikan).
- He was the disciple of Kidambi Appular, also known as Aāthreya Ramanujachariar, who himself was of a master-disciple lineage that began with Ramanuja.
- He is considered to be avatar (incarnation) of the divine bell of Venkateswara of Tirumalai by the Vadakalai sect of Sri Vaishnavite.
- Literary works:** Sri Sthothra Nidhi, Sri Paduka Sahasram, Rahasya Granthams, Sri Desika Prabandham, Kavyams.
- Honors:** Sarvathanthra Swathanthrar, Kavitharkiga Simham, Vedanthachariar.

3. BASAVANNA

What to study?

- For prelims and mains: contributions of basavanna to Indian Literature and philosophy.

Context: Basava Jayanthi was observed on birthday of Basavanna, a Hindu Kannada poet of 12th century.

About Basavanna:

- Basavanna was a **12th-century philosopher, statesman, Kannada poet and a social reformer** during the reign of the **Kalachuri-dynasty king Bijala I in Karnataka, India**.
- Basavanna spread social awareness through his poetry, popularly known as **Vachanaas**. Basavanna **rejected gender or social discrimination, superstitions and rituals**.
- He introduced new public institutions such as the **Anubhava Mantapa** (or, the “hall of spiritual experience”), which welcomed **men and women from all socio-economic backgrounds to discuss spiritual and mundane questions of life, in open**.
- As a leader, he developed and inspired a new devotional movement named **Virashaivas, or “ardent, heroic worshippers of Shiva”**. This movement shared its roots in the ongoing Tamil Bhakti movement, particularly the Shaiva **Nayanars traditions**, over the 7th- to 11th-century.
- Basava **championed devotional worship that rejected temple worship and rituals** led by Brahmins, and replaced it with personalized direct worship of Shiva through practices such as individually worn icons and symbols like a small linga.
- Basaveshwara is the **first Kannadiga in whose honour a commemorative coin has been minted in recognition of his social reforms**.
- In November 2015, the Prime Minister of India Narendra Modi inaugurated the **statue of Basaveshwara along the bank of the river Thames at Lambeth in London**.

Basavanna and Sharana movement:

- The Sharana movement he presided over attracted people from all castes**, and like most strands of the Bhakti movement, produced a corpus of literature, the vachanas, that unveiled the spiritual universe of the Veerashaiva saints.
- The egalitarianism of Basavanna’s Sharana movement was too radical for its times.
- He set up the Anubhava Mandapa, where the Sharanas, drawn from different castes and communities, gathered and engaged in learning and discussions.
- Sharanas challenged the final bastion of the caste order: they organised a wedding where the bridegroom was from a lower caste, and the bride a Brahmin.

4. CHAR DHAM PILGRIMAGE

What to study?

- For prelims: bout Char Dham project and its geographical location.
- For mains: Significance of the project, environmental concerns, NGT and Supreme Court’s views.

Context: Chardham Yatra: Kedarnath portals open for public.

About Chardham project:

- The project involves developing and widening 900-km of national highways connecting the holy Hindu pilgrimage sites of; **Badrinath, Kedarnath, Gangotri, and Yamunotri** at an estimated cost of Rs.12,000 crores.
- The highway will be called Char Dham Mahamarg(Char Dham Highway) and the highway construction project will be called as Char Dham Mahamarg Vikas Pariyojana (Char Dham Highway Development Project).
- The roads will be widened from 12m to 24m and the project will involve construction of tunnels, bypasses, bridges, subways and viaducts.



Sources: the hindu.

5. BUDDHA PURNIMA

- What is it?** Buddha Purnima also known as Vaishak Purnima is **the birth anniversary of Gautama Buddha**. 2019 marks the 2,563rd birth anniversary of the Buddha.
- It is an important day charted by Buddhist monks and all followers of the message of Gautam Buddha.
- Interestingly, Buddha Purnima, celebrated in May every year, is even more special because the **Buddha's enlightenment and mahaparinirvan also happened during the Purnima in the month of May**.
- The world over, the day is observed through **dhana, sila and bhavana**.
- To mark the day that is also known as **Vesak**, in some countries such as Vietnam, China and Japan the Buddha's idol is bathed in water and flowers.

6. THRISSUR POORAM

- Known as the **festival of festivals**, Thrissur Pooram has a tradition of more than 200 years. This spectacular event was **started by Sakthan Thampuran**, the erstwhile ruler of Kochi. Held on the **Moolam asterism in the Malayalam month of Medam (April-May)**, festival related events take place at the **Vadakkumnathan temple** situated in the heart of Thrissur town and the adjoining Thekkinkadu ground.
- The **pooram festival mainly happens between two groups** representing the geographic divisions of Paramekkavu and Thiruvambadi. They will **compete in their respective presentations of richly caparisoned elephants, traditional orchestra called panchavadyam**, the swift and rhythmic changing of brightly coloured and sequined parasols called **kudamattom** and the dazzling fireworks in the early morning hours are the festival highlights.

5. KARTARPUR SAHIB PILGRIM CORRIDOR

What to study?

- For Prelims and Mains: Location and significance of the corridor, issues involved in its construction.

Context: Officials from Pakistan and India recently held a meeting to discuss the modalities for a corridor linking Dera Baba Nanak shrine in Punjab's Gurdaspur district to Gurdwara Darbar Sahib in Kartarpur across the border.

Background:

- In a significant decision, the Union Cabinet, last year, approved the building and development of the **Kartarpur corridor from Dera Baba Nanak in Gurdaspur district to the international border, in order to facilitate pilgrims from India to visit Gurdwara Darbar Sahib Kartarpur on the banks of the Ravi river, in Pakistan**, where Shri Guru Nanak Devji spent eighteen years. Pilgrims would then be able to visit the holy shrine throughout the year.

Key facts:

- The Kartarpur corridor will be implemented **as an integrated development project** with Government of India funding, to provide smooth and easy passage, with all the modern amenities.
- Government of India will put in place suitable facilities for smooth passage of pilgrims. Government of Pakistan will be urged to recognize the sentiments of the Sikh community and to develop a corridor with suitable facilities in their territory as well.

The shrine:

- The gurdwara in Kartarpur stands on the bank of the Ravi, about 120 km northeast of Lahore. It was here that **Guru Nanak assembled a Sikh community** and lived for 18 years until his death in 1539.
- The shrine is visible from the Indian side, as Pakistani authorities generally trim the elephant grass that would otherwise obstruct the view. Indian Sikhs gather in large numbers for darshan from the Indian side, and binoculars are installed at Gurdwara Dera Baba Nanak.

Access to gurdwaras in Pakistan:

- Sikh jathas from India travel to Pakistan on four occasions every year** — for Baisakhi, the martyrdom day of Guru Arjan Dev, the death anniversary of Maharaja Ranjit Singh, and the birthday of Guru Nanak Dev. These Indian pilgrims are given access to all gurdwaras in Pakistan.

Sources: the Hindu.

Topics: *Modern Indian history from about the middle of the eighteenth century until the present- significant events, personalities, issues.*

1. ISHWAR CHANDRA VIDYASAGAR

What to study?

- For prelims and mains: Roles, contributions and achievements of Ishwar Chandra.

Why in News? The giant statue of Ishwar Chandra was recently vandalized by some political goons in Kolkata.

About Ishwar Chandra Vidyasagar:

- He was the 19th century intellectual.
- He was perhaps the first Indian reformer to put forward the issues of women.
- His Bengali primer, **Borno Porichoy**, remains, more than 125 years after his death in 1891, the introduction to the alphabet for nearly all Bengali children.
- He was a **polymath** who reconstructed the modern Bengali alphabet and initiated pathbreaking **reform in traditional upper caste Hindu society**.
- He studied Sanskrit grammar, literature, Vedanta philosophy, logic, astronomy, and Hindu law for more than 12 years at **Sanskrit College in Calcutta**, and received the title of **Vidyasagar — Ocean of Learning — at the age of just 21**.

- Privately, he studied English literature and philosophy and was appointed **principal of Sanskrit College** on January 22, 1851.

Reforms by Ishwar Chandra:

- The focus of his social reform was women — and he spent his life's energies trying to ensure an end to the practice of child marriage and initiate widow remarriage. He argued, on the basis of scriptures and old commentaries, in favour of the remarriage of widows in the same way as Roy did for the abolition of Sati.
- He launched a powerful attack on the practice of marrying off girls aged 10 or even younger, pointing to social, ethical, and hygiene issues, and rejecting the validity of the Dharma Shastras that advocated it. He showed that there was no prohibition on widows remarrying in the entire body of 'Smriti' literature (the Sutras and the Shastras).
- He campaigned against **polygamy**.
- On October 14, 1855, Vidyasagar presented a petition to the Government of India praying for early passing a law to remove all obstacles to the marriage of Hindu widows and to declare the issue of all such marriages to be legitimate.
- On July 16, 1856, **The Hindu Widows' Remarriage Act**, known as Act XV, was passed.

Sources: Indian Express.

2. VEER SAVARKAR

What to study?

- For prelims and mains: contributions made by Veer Sagars else.

Context: On May 28, 2019, birth anniversary of freedom fighter **Veer Savarkar** was observed.

Key facts- important contributions to the Indian freedom movement:

- In Pune, Savarkar founded the "**Abhinav Bharat Society**".
- He was also involved in **the Swadeshi movement** and later joined Tilak's **Swaraj Party**. His instigating patriotic speeches and activities incensed the British Government. As a result the British Government withdrew his B.A. degree.
- In June 1906, Veer Savarkar, left for London to become Barrister. However, once in London, he united and inflamed the Indian students in England against British rule in India. He founded the **Free India Society**. The Society celebrated important dates on the Indian calendar including festivals, freedom movement landmarks, and was dedicated to furthering discussion about Indian freedom. He believed and advocated the use of arms to free India from the British and created a network of Indians in England, equipped with weapons.
- In 1908, brought out an authentic informative researched work on The Great Indian Revolt, which the British termed as "**Sepoy Mutiny**" of 1857. The book was called "**The Indian War of Independence 1857**". The British government immediately enforced a ban on the publication in both Britain and India. Later, it was published by **Madame Bhikaji Cama** in Holland, and was smuggled into India to reach revolutionaries working across the country against British rule.
- When the then British Collector of Nasik, A.M.T. Jackson was shot by a youth, Veer Savarkar finally fell under the net of the British authorities. He was implicated in the murder citing his connections with India House. Savarkar was arrested in London on March 13, 1910 and sent to India.
- In 1920, many prominent freedom fighters including Vithalbhai Patel, Mahatma Gandhi and Bal Gangadhar Tilak demanded the release of Savarkar. On May 2, 1921, Savarkar was moved to Ratnagiri jail, and from there to the Yeravada jail. In Ratnagiri jail Savarkar wrote the book '**Hindutva: who is hindu?**'
- Vinayak Savarkar was a **president of Hindu Mahasabha** from 1937 to 1943. When congress ministries offered resignation on 22nd oct 1939, Hindu mahaasabha under his leadership cooperated with Muslim league to form government in provinces like Sindh, Bengal and NWFP.

Topics: Social empowerment, communalism, regionalism & secularism.

INTERNATIONAL RELIGIOUS FREEDOM 2019 REPORT

What to study?

- For prelims and mains: Key findings, concerns and what needs to be done?

Context: United States Commission has released its **International Religious Freedom 2019 report**.

- US Commission on International Religious Freedom is a **bipartisan, independent federal government commission, created by International Religious Freedom Act of 1998**.

Significance of the report:

- In its Annual Report, USCIRF unflinchingly describes threats to religious freedom around the world and recommends to the State Department countries for designation as “**countries of particular concern**” (CPCs) for engaging in or tolerating “systematic, ongoing, egregious violations.”
- USCIRF also recommends to the State Department that non-state actors cited for similarly severe violations be designated as “entities of particular concern” (EPCs).
- This year, USCIRF has recommended **16 countries for CPC designation and five entities for EPC designation**.
- Also, USCIRF placed 12 countries on its Tier 2 list, meaning the violations meet one or two, but not all three, of the elements of the systematic, ongoing, egregious test for CPC status.

Key facts:

- The 16 countries USCIRF recommended for CPC designation include** 10 that the State Department so designated in November 2018 – Burma, China, Eritrea, Iran, North Korea, Pakistan, Saudi Arabia, Sudan, Tajikistan, Turkmenistan – as well as six others that the State Department has not designated – Central African Republic (CAR), Nigeria, Russia, Syria, Uzbekistan, and Vietnam.
- The 12 countries on USCIRF’s Tier 2 list** are Afghanistan, Azerbaijan, Bahrain, Cuba, Egypt, India, Indonesia, Iraq, Kazakhstan, Laos, Malaysia, and Turkey.
- The five entities recommended for EPC designation** include the Islamic State of Iraq and Syria (ISIS), the Taliban in Afghanistan, al-Shabab in Somalia, and new to the list this year, the Houthis in Yemen and Hay’at Tahrir al-Sham (HTS) in Syria.

India- specific Key findings:

- India saw an “overall deterioration of religious freedom conditions in 2018”.
- India continues to remain a **Tier II country**. It is in same list since 2009. **Tier II countries are those in which violations engaged in or tolerated by government are serious and characterized by at least one of the elements of systematic, ongoing, and egregious (horrible)**.
- India is facing **declining religious freedom**, apart from increased securitisation and politicisation of religion.
- It is **increasingly becoming difficult to separate religion and politics**. It is a tactic which is sometimes intended by those who seek to discriminate against certain religious communities.
- Over the last decade **Minorities conditions have deteriorated in country**. The reason is attributed to extremist groups, anti-conversion laws, cow-protection groups, mob lynching, concerns that millions from Assam will be incorrectly left out of NRC (National Register of Citizen) and a denying international NGOs registration.

Sources: The Hindu.

Topics: Women and women related issues.

1. GENDER DISPARITY IN JUDICIARY

Context: questions have been raised over gender disparity in judiciary in the context of the apathy shown towards the woman complainant by an all-male bench (headed by the CJI) in the immediate aftermath of the allegations, and by the in-house committee which has given a clean-chit to the CJI.

Women in judiciary:

- Since 1950, the SC has had only eight female judges out of 239, with the present three out of 27 being the highest concurrent representation women have ever had on the SC bench.
- In the subordinate judiciary, merely 27.6 per cent of the judges are female.
- In 25 HC collegiums across the country, there are just five senior female judges with 19 of the collegiums having no female judge at all.
- Only one woman so far has been a member of the SC collegium (Justice Ruma Pal), with Justice R Banumathi set to become the second later this year; and, at least until 2025, no female judge is going to occupy the CJI's position.

Concerns and challenges:

- This lack of women on the bench, at all levels of the judiciary, is at the very root of the impunity.
- Current collegium system for the appointment of judges is simply not designed to ensure the elevation of women to the bench. Although the state and central governments have a role to play in the process, the final say, for all practical purposes, rests with the SC collegium. This appointments process in itself is severely lacking in women's representation.
- This nearly all-male composition of the highest decision-making bodies in the judiciary has made gender disparity a self-perpetuating phenomenon.

What is the way out?

- The only way out of this vicious cycle is for the nearly all-male collegiums to go beyond their inherent biases and take affirmative measures to improve gender diversity on the bench.
- The HC collegiums should consciously recommend more female names for elevation and the SC collegium must consider such recommendations more favourably.
- The female judges should be elevated early enough in their careers so that they make it to the collegiums and become decision makers (the average age of the 19 female judges elevated since October 2017 is 53 years).

2. ILO REPORT ON WOMEN IN BUSINESS AND MANAGEMENT

What to study?

- For prelims: About ILO.
- For mains: Key findings, concerns and reforms needed.

Context: The International Labour Organization (ILO) recently released its second global report, titled **Women in Business and Management: The business case for change**.

Key findings:

- A critical mass of **30 per cent women** is need by the enterprises in order to reap the benefits of gender diversity.
- Almost half of the surveyed enterprises reported women holding less than 30 per cent of entry-level management positions.
- In 60 per cent of companies, fewer than 30 per cent of senior managers and top executives are women.
- Across the world, men are still more likely to participate in the labour market than women. The average global labour force participation rate of women in 2018 stood at 48.5 per cent, while that of men was 75 per cent. This equates to a 26.5 percentage point gender gap in labour force participation.
- Just for Asia and the Pacific, the average female labour force participation rate has declined from 52.9 in 1991 to 45.3 per cent in 2018, dropping by 7.6 percentage points.

Benefits associated with gender-inclusive cultures:

- Enterprises with gender-inclusive cultures “are over 60 per cent more likely to have improved profits and productivity”. Such businesses are “9 per cent more likely to have improved business performance”.
- A study by the World Economic Forum has predicted that “if the global gender gap in labour market participation is closed by 25 per cent by 2025, an additional \$5.3 trillion would be added to GDP globally”.

Conclusion:

- In an era of skill shortages, women represent a formidable talent pool that companies aren't making enough of. Smart companies who want to be successful in the global economy should make genuine gender diversity a key ingredient of their business strategy.
- Representative business organizations and employer and business membership organizations must take a lead, promoting both effective policies and genuine implementation.

Sources: the Hindu.

Topics: Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location- changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

1. NAMING OF CYCLONES

Context: The newest cyclone to emerge out of the Bay of Bengal has been named Fani. Before that, there were cyclones Hudhud in 2014, Ockhi in 2017 and Titli and Gaja in 2018.

NORTHERN INDIAN OCEAN CYCLONE NAMES

Contributors	List 1	List 2	List 3	List 4	List 5	List 6	List 7	List 8
Bangladesh	Onil	Ogni	Nisha	Giri	Helen	Chapala	Ockhi	Fani
India	Agni	Akash	Bijli	Jal	Lehar	Megh	Sagar	Vayu
Maldives	Hibaru	Gonu	Aila	Keila	Madi	Roanu	Mekunu	Hikaa
Myanmar	Pyarr	Yemyin	Phyan	Thane	Nanauk	Kyant	Daye	Kyarr
Oman	Baaz	Sidr	Ward	Murjan	Hudhud	Nada	Luban	Maha
Pakistan	Fanoos	Nargis	Laila	Nilam	Nilofar	Vardah	Titli	Bulbul
Sri Lanka	Mala	Rashmi	Bandu	Viyaru	Ashobaa	Maarutha	Gaja	Pawan
Thailand	Mukda	Khai Muk	Phet	Phailin	Komen	Mora	Phethai	Amphan

How are these cyclones named?

- Each Tropical Cyclone basin in the world has its own rotating list of names.
- For cyclones in the Bay of Bengal and Arabian Sea, the naming system was agreed by eight member countries of a group called **WMO/ESCAP and took effect in 2004**.
- These countries submitted eight names each.
- The first cyclone after the list was adopted was given the name in the first row of the first column — Onil, proposed by Bangladesh. Subsequent cyclones are being named sequentially, column-wise, with each cyclone given the name immediately below that of the previous cyclone.
- Once the bottom of the column is reached, the sequence moves to the top of the next column. So far, the first seven columns have been exhausted, and Fani (again proposed by Bangladesh) is the top name in the last column. **The next cyclone will be named Vayu.** The lists will wind up with Cyclone Amphan, whenever it comes.

What after the list is exhausted?

- After the 64 names are exhausted, the eight countries will propose fresh lists of names. For cyclones from the Bay of Bengal and Arabian Sea, these lists are not rotated every few years. The lists for storms in the Atlantic and Eastern Pacific basins are, however, rotated. Exception are, however, made in certain cases — if a storm causes excessive death and destruction, its name is considered for retirement and is not repeated; it is replaced with another name.

Why name cyclones?

- It is generally agreed that appending names to cyclones makes it easier for the media to report on these cyclones, heightens interest in warnings, and increases community preparedness. Names are presumed to

be easier to remember than numbers and technical terms. If public wants to suggest the name of a cyclone to be included in the list, the proposed name must meet some fundamental criteria. The name should be short and readily understood when broadcast. Further, the names must not be culturally sensitive and should not convey any unintended and potentially inflammatory meaning.

Why eastern coast of India is more vulnerable?

- According to the India Meteorological Department, this is because in addition to the storms that originate in the southeast Bay of Bengal and the adjoining Andaman Sea, breakaway typhoons over the Northwest Pacific move across the South China Sea into the Bay of Bengal, intensifying into cyclones.
- As the frequency of typhoons over the Northwest Pacific is about 35% of the global annual average, the Bay of Bengal is affected. In contrast, Arabian Sea cyclones are mostly their own formations and they also generally move north-west, away from India's west coast.
- Besides, the Arabian Sea is colder than the Bay of Bengal, which inhibits the formation and intensification of the cyclonic system in the former. Warm sea surface temperature is an ideal platform for cyclones.

2. PACIFIC DECADAL OSCILLATION

What to study?

- For Prelims and Mains: Pacific decadal oscillation- meaning, causes and effects.
- Context:** Northeast India, one of the wettest places on the Earth has been experiencing rapid drying, especially in the last 30 years. The decreasing monsoon rainfall is associated with natural changes in the Pacific decadal oscillation (PDO).

What is PDO?

- The “Pacific Decadal Oscillation” (PDO) is a long-lived El Niño-like pattern of Pacific climate variability. The PDO is detected as warm or cool surface waters in the Pacific Ocean, north of 20°N.
- Major changes in northeast Pacific marine ecosystems have been correlated with phase changes in the PDO; warm eras have seen enhanced coastal ocean biological productivity in Alaska and inhibited productivity off the west coast of the contiguous United States, while cold PDO eras have seen the opposite north-south pattern of marine ecosystem productivity.

How is it different from ENSO?

- Duration:** Both PDO and ENSO have similar spatial climate fingerprints yet the major difference is that PDO persists for 20-30 years while the typical ENSO persists for 6 to 18 months.
- The primary climatic fingerprints** of the PDO are most visible in the North Pacific/North American sector, while secondary signatures exist in the tropics. On the contrary, the primary climatic fingerprints of the ENSO are visible in tropics while secondary are visible in North Pacific/North American sector.
- The PDO has two cycles**, viz. Cold Cycle and Warm Cycle, very much similar to La Niña and El Niño of the ENSO cycle.

Influences:

- The PDO has a major influence on Alaskan and for those matter global temperatures. The positive phase favors more El Niños and a stronger Aleutian low and warm water in the north Pacific off the Alaskan coast. The negative phase more La Niñas and cold eastern Gulf of Alaska waters. Note the strong similarity of the positive phase with El Niño and the negative with La Niña. PDO is responsible for bringing colder surface water temperatures and thus beginning the overall cooling effect in recent times in Alaska.

Sources: the hindu.

3. GSI REPORT ON GRAPHITE RESERVES

What to study?

- For prelims: key features and recent findings by GSI.
- For mains: need for enhancement of domestic production.

Context: Geological Survey of India (GSI) has released a report on graphite reserves in India. About 35 % of India's total Graphite reserves is found in Arunachal Pradesh. This is the highest found in country.

Background:

- As per GSI's 2013 report, Arunachal Pradesh sits on 43% of the country's graphite resources followed by Jammu & Kashmir (37%), Jharkhand (6%), Tamil Nadu (5%), and Odisha (3%).

Significance:

- At present India imports majority of Graphite from other countries. With 35 % of India's Graphite deposits being found in Arunachal Pradesh, the State could now be developed as leading producer of graphite in country thus helping in meeting its future needs.

Sources: the Hindu.

About Graphite:

- Graphite is a **naturally-occurring form of crystalline carbon**. It is a native element mineral found in metamorphic and igneous rocks.
- It is extremely soft, cleaves with very light pressure, and **has a very low specific gravity**.
- It is **the only non-metal element that is a good conductor of electricity**.
- It is also known as a **dry lubricant** for its greasy feel.

4. ANTHROPOCENE

What to study?

- For prelims: geological times scale.
- For mains: concerns and challenges associated with the declaration.

Context: A team of scientists have voted to declare "**Anthropocene**" as a new chapter in the Earth's geological history- **the new epoch**. The result builds on an informal vote taken at the 2016 International Geological Congress in Cape Town, and lays the groundwork for a formal proposal by 2021 to the **International Commission on Stratigraphy**.

What is it?

- Coined by **Paul Crutzen and Eugene Stoermer** in 2000 to denote the present geological time interval, Anthropocene has been used to describe humanity's large impact on the environment.
- **Implications:** The move signals the end of the Holocene epoch, which began 12,000 to 11,600 years ago.

Way ahead:

- To show a clear transition from the Holocene, the scientists plan to identify a definitive geologic marker or 'golden spike', and would be technically called a **Global boundary Stratotype Section and Point (GSSP)**. For this, the group will search for the marker from around the globe, including a cave in northern Italy, corals in the Great Barrier Reef and a lake in China.
- To demonstrate a sedimentary record representing the start of the epoch, the team is likely to choose the **radionuclides that came from atomic-bomb detonations from 1945 until the Limited Nuclear Test Ban Treaty of 1963**.
- The **International Union of Geological Sciences needs to ratify the AWG formal proposal, before the new epoch can formally be recognised**.

Eon	Era	Period	Epoch	
Phanerozoic	Cenozoic	Quaternary	Holocene	→ Today
			Pleistocene	→ 11.8 Ka
		Neogene	Pliocene	
			Miocene	
			Oligocene	
		Paleogene	Eocene	
			Paleocene	
	Mesozoic	Cretaceous	~	→ 66 Ma
		Jurassic	~	
		Triassic	~	
Paleozoic	Permian	Permian	~	→ 252 Ma
		Carboniferous	Pennsylvanian	~
	Devonian	Mississippian	~	
		Devonian	~	
		Silurian	~	
		Ordovician	~	
		Cambrian	~	
Proterozoic	~	~	~	→ 541 Ma
Archean	~	~	~	→ 2.5 Ga
Hadean	~	~	~	→ 4.0 Ga
				→ 4.54 Ga

Sources: down to earth.



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GENERAL STUDIES - II

Topics: Structure, organisation and functioning of executive and Judiciary.

1. CONTEMPT OF COURT

According to the Contempt of Courts Act, 1971, contempt of court can either be **civil contempt** or **criminal contempt**.

- **Civil contempt** means wilful disobedience to any judgment, decree, direction, order, writ or other process of a court or wilful breach of an undertaking given to a court.
- **Criminal contempt** means the publication (whether by words, spoken or written, or by signs, or by visible representations, or otherwise) of any matter or the doing of any other act whatsoever which:
 - scandalises or tends to scandalise, or lowers or tends to lower the authority of, any court; or
 - prejudices, or interferes or tends to interfere with, the due course of any judicial proceeding; or
 - interferes or tends to interfere with, or obstructs or tends to obstruct, the administration of justice in any other manner.

Contempt of Courts (Amendment) Act, 2006:

- The statute of 1971 has been amended by the **Contempt of Courts (Amendment) Act, 2006** to include the defence of truth under Section 13 of the original legislation.
- **Section 13** that already served to restrict the powers of the court in that they were not to hold anyone in contempt unless it would substantially interfere with the due process of justice, the amendment further states that the court must permit 'justification by truth as a valid defence if it is satisfied that it is in public interest and the request for invoking the said defence is bona fide.'

Punishment:

- A contempt of court may be punished with simple imprisonment for a term which may extend to six months, or with fine which may extend to two thousand rupees, or with both, provided that the accused may be discharged or the punishment awarded may be remitted on apology being made to the satisfaction of the court.

Need:

- Judiciary ensures justice and equality to every individual and institutions, therefore, the makers of the constitution upheld the sanctity and prestige of the revered institution by placing provisions under articles 129 and 215 of the constitution, which enables the courts to hold individuals in contempt if they attempt to demean or belittle their authority.

Is criticism allowed?

- Yes. The Contempt of Courts Act, 1971, very clearly states that fair criticism of any case which has been heard and decided is not contempt.

2. ZERO PENDENCY COURT PROJECT

What To study?

- For prelims: Key features of the project.
- For mains: Significance of the project, Judicial reforms and concerns over rising pendency of cases.

What is it?

- It is the **pilot project of the Delhi High Court**.
- It is one of its kind project in India aimed to **study the life cycles of cases to come up with optimal timelines for cases**.
- The primary goal of the project was to **study the flow of cases in the absence of backlog**.
- The aim of project is to **provide information on the judicial time required to dispose of a case together with the gathering stage wise details in each case**.
- It was undertaken in certain subordinate courts of Delhi to identify benchmarks for different types of cases timelines, number of judges required, case flow management rules and a host of other relevant factors.

A GRIM PICTURE



Category	Ideal Judge strength to clear all pending cases in one year	Number of current Judges	Number of pending cases as of April 9, 2019, across Delhi
Sessions Courts	82	60	32,378
Fast-track Courts	5	6	1,610
District Courts	62	49	71,962
Labour Courts	26	11	12,308
Motor Accidents Claims Courts	7	12	13,340
Rent Controller Courts	4	5	5,214
Total	186	143	1,36,812

SOURCE: ZERO PENDENCY COURTS PROJECT REPORT

Highlights of the report:

- Need more judges:** Delhi needs 43 more Judges above the current strength of 143 to clear all pending cases in one year.
- More criminal cases:** The number of criminal cases in Delhi is far more than the number of civil cases. As on March 2019, there were 5.5 lakh criminal cases and 1.8 lakh civil cases pending in subordinate courts in Delhi.
- Most time spent:** The highest amount of time per hearing on average was spent on the final arguments stage followed by the final order or judgement. A considerable amount of time is taken on dictation, researching on case laws etc. before pronouncing the final judgement. Thus, a lot of time is spent on each of the hearings.

Reasons for delays:

- The absence of witness.
- Unnecessary Adjournments sought by the advocates or the parties at various stages in the case.
- There is also a delay in the service of summons, especially outstation parties.

Concerns expressed:

- Increase in workload:** With the lesser number of judges, the workload of an individual judge could increase.
- Credibility issue:** With persisting delays the system becomes less credible as litigants have to wait for the decades to get their cases resolved.
- Increase in pendency:** With an increase in the number of filings, the pendency of cases is bound to increase if no proper targeted steps are taken to overcome the issue.

Need of the hour:

- Arrive at an **optimal judge strength** to handle the cases pending in the system. Increase the current strength of judges from 143 to an ideal 186 judges to clear all the pending cases in one year.

Sources: The Hindu.

3. VACATION BENCHES

Context: Recently Hon'ble Supreme Court has notified its annual summer holiday from May 13, and listed the judges who will occupy the Vacation Benches for hearing urgent matters during this period.

What is Vacation Bench?

- A Vacation Bench of the Supreme Court is a special bench **constituted by the Chief Justice of India**.

- **Need:** The court takes two long vacations each year, the summer and winter breaks, but is technically not fully closed during these periods. Litigants can still approach the Supreme Court and, if the court decides that the plea is an “urgent matter”, the Vacation Bench hears the case on its merits.
- During vacations the court generally **admits writs related to habeas corpus, certiorari, prohibition and quo warranto matters for enforcement of any fundamental right.**
- **Composition:** Under Rule 6 of Order II of The Supreme Court rules, 2013 the CJI nominates the Division Benches for hearing of urgent miscellaneous matters and regular hearing matters during the summer vacation for the period. The rule reads that CJI may appoint one or more Judges to hear during summer vacation or winter holidays all matters of an urgent nature which under these rules may be heard by a Judge sitting singly. And, whenever necessary, he may likewise appoint a Division Court for the hearing of urgent cases during the vacation which require to be heard by a Bench of Judges.
- **Who else can appoint vacation bench?** The High Courts and trial courts too have Vacation Benches to hear urgent matters under their jurisdiction.

4. RECUSAL OF JUDGES FROM HEARING

Context: A litigant cannot seek recusal of the judge during a hearing, the Supreme Court has said.

Background:

- The order was based on a plea seeking the **recusal of the CJI** from his PIL highlighting the plight of inmates in Assam’s detention centres for illegal immigrants.
- Refusing to recuse, Chief Justice Gogoi said “**a litigant should not be permitted and allowed to question a judge on perceived bias especially after hearing has commenced and orders on different dates have been passed**”. If a judge recuses on the word of the litigant, it may fall into a practice and would descend into **forum-shopping**.

Concerns associated with recusal of judges:

- Often, judges don’t record their reasons for recusal in writing, allowing, in the process, leaving plenty of scope for conjecture and surmise.
- An unwarranted recusal, much like a failure to recuse when faced with genuine conflicts of interest, damage the rule of law.
- To withdraw from a case merely because a party suggests that a judge does so impair judicial fairness.
- It allows parties to cherry-pick a bench of their choice.
- A mistaken case of recusal can prove just as destructive to rule of law as those cases where a judge refuses a recusal despite the existence of bias.

The basic principle of judicial conduct:

- A judge should not have an interest in the litigation before him which could give rise to an apprehension of his deciding a matter in favour of one of the parties. Bias by interest falls into two broad classes. First, where the judge has a pecuniary interest in the subject matter of litigation and, second, wherefrom his association with or interest in one of the parties the judge may be perceived to have a bias in favour of that party.

Are there any rules in this regard ?

- There are **no definite rules on recusals by Judges.**
- Justice J. Chelameswar in his opinion in **Supreme Court Advocates-on-Record Association v. Union of India (2015)** held that “Where a judge has a pecuniary interest, no further inquiry as to whether there was a ‘real danger’ or ‘reasonable suspicion’ of bias is required to be undertaken,”

Need of the hour:

- Transparency in procedure is one of the major factors constituting the integrity of the office of a judge in conducting his duties and the functioning of the court, and so adopting a principle of disclosing reasons for recusal will augur well with it.
- This will also help curb the tendency of forum shopping when a mischievous litigant, wanting to avoid a judge because the judge is known to be very strong, could raise baseless submissions on the conflict of interest.

Way ahead:

- In taking the oath of office, judges, both of the Supreme Court and of the high courts, promise to perform their duties, to deliver justice, “without fear or favor, affection or ill-will”.
- **Definite rules need to be framed in this regard.**
- **Judges should express their decisions in writing.**

Conclusion:

- The nature of the judicial function involves the performance of difficult and at times unpleasant tasks, and to that end, judicial officers “must resist all manner of pressure, regardless of where it comes from.”
- This is the constitutional duty common to all judicial officers. If they deviate, the independence of the judiciary would be undermined, and in turn, the Constitution itself.”

Topics: Separation of powers between various organs dispute redressal mechanisms and institutions.

1. LIEUTENANT-GOVERNOR (L-G) OF PUDUCHERRY

What to study?

- For Prelims: Power of LG of Puducherry, sources of these powers and comparison with LG of Delhi.
- For Mains: Tussle over executive powers between LG and state legislature, issues, concerns and what needs to be done?

Context: The Madras High Court has ruled that the Lieutenant-Governor (L-G) of Puducherry could not interfere with the day-to-day administration of the Union Territory when an elected government was in place. The court said incessant interference from the L-G would amount to running a “parallel government.”

Key observations made by the court:

1. **The Central government as well as the Administrator [the term used in the Constitution to refer to the L-G] should be true to the concept of democratic principles.** Otherwise, the constitutional scheme of the country of being democratic and republic would be defeated.
2. **Government secretaries were bound to take instructions from the Ministers and the Council of Ministers,** headed by the Chief Minister. Government secretaries of the Puducherry administration were required to report to the Council of Ministers headed by the Chief Minister on all official matters.
3. **Article 239A symbolises the supremacy of the Legislature** above the Administrator in case of the Union Territory of Puducherry.
4. **The secretaries are not empowered to issue orders on their own or upon the instructions of the Administrator.**
5. **Government officials cannot be a part of social media groups through which the L-G was issuing instructions to them for redress of public grievances.** As per rules, **they were bound to use only authorised medium of communication when it came to issues related to administration.**

What are the powers and sources of LG of Puducherry?

- The **Government of Union Territories Act, 1963** provides for a Legislative Assembly of Pondicherry (as Puducherry was then called), with a Council of Ministers to govern the “Union Territory of Pondicherry”. The same Act says that **the UT will be administered by the President of India through an Administrator (LG).**
- **Section 44 of the Act**, which deals with the Council of Ministers and its working, says the Council of Ministers headed by a Chief Minister will “aid and advise the Administrator in the exercise of his functions in relation to matters with respect to which the Legislative Assembly of the Union Territory has power to make laws”.
- The same clause also allows the LG to “act in his discretion” in the matter of lawmaking, even though the **Council of Ministers has the task of aiding and advising him. In case of a difference of opinion between the LG and his Ministers on any matter, the Administrator is bound to refer it to the President for a decision and act according to the decision given by the President.** However, the Administrator can also claim that the matter is urgent, and take immediate action as he deems necessary.
- **Under Section 22 of the Act**, prior sanction of the Administrator is required for certain legislative proposals. These include Bills or amendments that the Council of Ministers intends to move in the Legislative Assembly,

and which deal with the “constitution and organisation of the court of the Judicial Commissioner”, and “jurisdiction and powers of the court of the Judicial Commissioner with respect to any of the matters in the State List or the Concurrent List”.

- **Section 23 of the Act** also makes it obligatory on the part of the UT government to seek the “recommendation” of the LG before moving a Bill or an amendment to provide for “the imposition, abolition, remission, alteration or regulation of any tax”, “the amendment of the law with respect to any financial obligations undertaken or to be undertaken”, and anything that has to do with the Consolidated Fund of the UT.
- **Once the Assembly has passed a Bill**, the LG can either grant or withhold his assent; or reserve it for the consideration of the President. He can also send it back to the Assembly for reconsideration.
- The manner in which the LG functions vis-à-vis the elected government (Council of Ministers) is also spelt out in **the Rules of Business of the Government of Pondicherry, 1963, issued on June 22, 1963**.
- **Under Rule 47**, which deals with **persons serving in the UT government**, the Administrator exercises powers regulating the conditions of service of such persons in consultation with the Chief Minister. In case the LG has a difference of opinion with the Chief Minister, he can refer the matter to the central government for the decision of the President.

Comparison with powers of LG of Delhi:

- The powers of the LG of Puducherry are different from the ones of the LG of Delhi, the other UT that has an elected legislature and government.
- **The LG of Delhi has “Executive Functions”** that allow him to exercise his powers in matters connected to public order, police and land “in consultation with the Chief Minister, if it is so provided under any order issued by the President under Article 239 of the Constitution”. Simply put, the LG of Delhi enjoys greater powers than the LG of Puducherry.
- While **the LG of Delhi is also guided by the Government of National Capital Territory of Delhi Act, 1991, and the Transaction of Business of the Government of National Capital Territory of Delhi Rules, 1993**, the LG of Puducherry is guided mostly by the Government of Union Territories Act, 1963.
- **Articles 239 and 239AA of the Constitution, as well as the Government of National Capital Territory of Delhi Act, 1991, clearly underline that Delhi is a UT, where the Centre, whose eyes and ears are the LG, has a much more prominent role than in Puducherry.**
- **Under the constitutional scheme, the Delhi Assembly has the power to legislate on all subjects except law and order and land.** However, the Puducherry Assembly can legislate on any issue under the Concurrent and State Lists. However, if the law is in conflict with a law passed by Parliament, the law passed by Parliament prevails.

Sources: the hindu.

2. COLLEGIUM SYSTEM

What to study?

- For prelims and mains: Collegium system, evolution, How it works, issues associated and need for reforms.

Context: Supreme Court Collegium, led by Chief Justice of India Ranjan Gogoi, recommended the names of two judges to the court and rejected the government's disapproval of the elevation of two others.

Background:

- Collegium refused the government's request to reconsider its April 12 recommendation to elevate Jharkhand High Court and Gauhati High Court Chief Justices Aniruddha Bose and A.S. Bopanna as Supreme Court judges.
- The Collegium said their names were recommended after all parameters were considered. The Collegium said there was no reason to agree with the government as there was nothing adverse found in the two judges' conduct, competence or integrity. Now, **the government is bound to appoint Justices Bose and Bopanna to the court.**

What is the Collegium System?

- The Collegium System is a system under which appointments/elevation of judges/lawyers to Supreme Court and transfers of judges of High Courts and Apex Court are decided by a **forum of the Chief Justice of India and the four senior-most judges of the Supreme Court.** There is no mention of the Collegium either in the original Constitution of India or in successive amendments.
- The recommendations of the Collegium are binding on the Central Government; if the Collegium sends the names of the judges/lawyers to the government for the second time.

A JURY OF JUDGES	
WHAT IS THE COLLEGIUM SYSTEM?	CRITICISMS
• A forum which decides on appointments, transfers (A/Ts) of judges.	• Born from 'Three Judges Cases' which gave primacy to CJI's call on A/Ts
• Comprised of Chief Justice of India, 4 Supreme Court Judges	• Judiciary gets greater say than Executive on A/Ts
• President merely approves CJI's choice	
SOME OF THE CHANGES SOUGHT:	
• CJI cannot make unilateral choice	
• Consulted judges' views need to be in writing	
• Non-compliance must make CJI choice non-binding	
• Transfer of Judges reviewable only in case of non-compliance	

How Collegium System Works?

- The Collegium sends the recommendations of the names of lawyers or judges to the Central Government. Similarly, the Central Government also sends some of its proposed names to the Collegium. The Central Government does the fact checking and investigate the names and resends the file to the Collegium.
- Collegium considers the names or suggestions made by the Central Government and resends the file to the government for final approval. If the Collegium resends the same name again then the government has to give its assent to the names. But time limit is not fixed to reply. This is the reason that appointment of judges takes a long time.

Sources: the Hindu.

Topics: Parliament and State Legislatures – structure, functioning, conduct of business, powers & privileges and issues arising out of these.

1. SPECIAL CATEGORY STATUS

- Context:** Odisha Chief Minister has demanded special category status from the Centre for his disaster-prone State, saying it faces natural calamities almost every year.

Why the demand?

- Special category status was the need of the hour due to the massive loss to infrastructure which may stall growth of the State. The demand was raised stating that the assistance that the state gets from the Centre is mostly for temporary restoration of infrastructure. And a lot has to be spent from State's own funds to work for the long-term. In the last five years the state had Phailin, Hudhud, Titli and now Fani. In addition to this, the state experiences massive floods.

Some prominent guidelines for getting SCS status:

- Must be economically backward with poor infrastructure.
- The states must be located in hilly and challenging terrain.
- They should have low population density and significant tribal population.
- Should be strategically situated along the borders of neighboring countries.

What is Special Category Status?

- There is no provision of SCS in the Constitution; the Central government extends financial assistance to states that are at a comparative disadvantage against others. The concept of SCS emerged in 1969 when the Gadgil formula (that determined Central assistance to states) was approved.

What kind of assistance do SCS States receive?

- The SCS States used to receive block grants based on the Gadgil-Mukherjee formula, which effectively allowed for nearly 30 per cent of the Total Central Assistance to be transferred to SCS States as late as 2009-10.
- Following the constitution of the NITI Aayog (after the dissolution of the Planning Commission) and the recommendations of the Fourteenth Finance Commission (FFC), Central plan assistance to SCS States has been subsumed in an increased devolution of the divisible pool to all States (from 32% in the 13th FC recommendations to 42%) and do not appear in plan expenditure.
- The FFC also recommended variables such as “forest cover” to be included in devolution, with a weightage of 7.5 in the criteria and which could benefit north-eastern States that were previously given SCS assistance. Besides, assistance to Centrally Sponsored Schemes for SCS States was given with 90% Central share and 10% State share.

When was the first Special Category status bestowed?

- The NDC first accorded SCS in 1969 to Jammu and Kashmir, Assam and Nagaland. Over the years, eight more states were added to the list — Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and, finally, in 2010, Uttarakhand. Until 2014-15, SCS meant these 11 states received a variety of benefits and sops.

Way ahead:

- Considering special status to any new State will result in demands from other States and dilute the benefits further. It is also not economically beneficial for States to seek special status as the benefits under the current dispensation are minimal. States facing special problems will be better off seeking a special package.

2. COMPETITION COMMISSION OF INDIA (CCI)

What to study?

- For prelims: objectives, composition and functions of CCI.
- For mains: issues associated with its functioning and the need for reforms.

Context: Competition Commission of India (CCI) celebrated its 10th Annual Day on 20th May 2019. It marks the notification of the substantive enforcement provisions of the **Competition Act, 2002**.

Competition Commission of India:

- It is a **statutory body** of the Government of India, responsible for enforcing the Competition Act, 2002 throughout India and to prevent activities that have an adverse effect on competition.

Functions of the commission:

- It is the duty of the Commission to eliminate practices having adverse effect on competition, promote and sustain competition, protect the interests of consumers and ensure freedom of trade in the markets of India.
- The Commission is also required to give opinion on competition issues on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.
- **The Competition Act:**
- The Competition Act, 2002, as amended by the Competition (Amendment) Act, 2007, prohibits anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control and M&A), which causes or likely to cause an appreciable adverse effect on competition within India.

Objectives of the Commission:

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

Topics: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

1. PCPNDT ACT

What to study?

- For prelims: key features of the act.
- For mains: performance and efficacy of the act and what else needs to be done?

Context: In a significant judgment, the Supreme Court has upheld **provisions in the anti-pre-natal sex determination law which ‘criminalises’ non-maintenance of medical records by obstetricians and gynaecologists** and suspend their medical licence indefinitely.

- The court held that these provisions in **the Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act of 1994** were necessary to prevent female foeticide in the country.

What's the issue?

- The main purpose of the Act is to ban the use of sex selection and misuse of pre-natal diagnostic technique for sex selective abortions and to regulate such techniques. However, there are only 586 convictions out of 4202 cases registered even after 24 years of existence. It reflects the challenges being faced in implementing this social legislation.

About PCPNDT Act:

- The Pre-conception & Pre-natal Diagnostics Techniques (PC & PNDT) Act, 1994 was enacted in response to **the decline in Sex ratio in India**, which deteriorated from 972 in 1901 to 927 in 1991. The main purpose of enacting the act is to ban the use of sex selection techniques before or after conception and prevent the misuse of prenatal diagnostic technique for sex selective abortion.
- **Offences under this act** include conducting or helping in the conduct of prenatal diagnostic technique in the unregistered units, sex selection on a man or woman, conducting PND test for any purpose other than the one mentioned in the act, sale, distribution, supply, renting etc. of any ultra sound machine or any other equipment capable of detecting sex of the foetus.
- **The act was amended in 2003** to improve the regulation of the technology used in sex selection. The Act was amended to bring the technique of pre conception sex selection and ultrasound technique within the ambit of the act.
- The amendment also empowered the **central supervisory board and state level supervisory board was constituted**. In 1988, the State of Maharashtra became the first in the country to ban pre-natal sex determination through enacting the Maharashtra Regulation of Pre-natal Diagnostic Techniques Act.

Sources: the Hindu.

Main provisions in the act are:

- The Act provides for the prohibition of sex selection, before or after conception.
- It regulates the use of pre-natal diagnostic techniques, like ultrasound and amniocentesis by allowing them their use only to detect few cases.
- No laboratory or centre or clinic will conduct any test including ultrasonography for the purpose of determining the sex of the foetus.
- No person, including the one who is conducting the procedure as per the law, will communicate the sex of the foetus to the pregnant woman or her relatives by words, signs or any other method.
- Any person who puts an advertisement for pre-natal and pre-conception sex determination facilities in the form of a notice, circular, label, wrapper or any document, or advertises through interior or other media in electronic or print form or engages in any visible representation made by means of hoarding, wall painting, signal, light, sound, smoke or gas, can be imprisoned for up to three years and fined Rs. 10,000.
- The Act mandates compulsory registration of all diagnostic laboratories, all genetic counselling centres, genetic laboratories, genetic clinics and ultrasound clinics.
- **Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 (PNDT), was amended in 2003 to The Pre-Conception and Pre-Natal Diagnostic Techniques (Prohibition Of Sex Selection) Act (PCPNDT Act)** to improve the regulation of the technology used in sex selection. The Act was amended to bring the technique of pre conception sex selection and ultrasound technique within the ambit of the act. The amendment also empowered the central supervisory board and state level supervisory board was constituted.
- In 1988, the State of Maharashtra became the first in the country to ban pre-natal sex determination through enacting the Maharashtra Regulation of Pre-natal Diagnostic Techniques Act.

2. NATIONAL POLICY ON SAFETY, HEALTH AND ENVIRONMENT AT THE WORKPLACE (NPSHEW)

What to study?

- For prelims: key features of the policy.
- For mains: need, significance and challenges to its implementation.

Context: It's been a decade since the **National Policy on Safety, Health and Environment at the Workplace (NPSHEW)** was announced. It called for a legislation on safety, health and environment at workplaces. Yet, **only the manufacturing, mining, ports and construction sectors are covered by existing laws on Occupational Safety and Health (OSH).**

Need for a legislation on safety, health and environment at workplace:

- Around 2.3 lakh workers were affected and 2,500 died in more than 81 industrial accidents in the past three-and-a-half decades. Yet sectors such as agriculture, services and transport remain unlegislated from the point of work-safety.

Present issues and challenges:

- **Factories Act not enforced:** Under the Factories Act, 1948, the state governments are empowered to frame their respective state factories rules and enforce both the Act and the Rules in their states through their Inspectorates of Factories / Directorates of Industrial Safety and Health under the labour departments. But these Inspectorates / Directorates are not adequately staffed for enforcing the Act and the Rules.
- **Dock Workers Act, 1986 and Regulations, 1990 enforced in major ports only:** The Dock Workers (Safety, Health and Welfare) Act, 1986 and Regulations, 1990 have been enforced only in major ports by the DGFASLI. In other ports, the state governments are required to frame respective state regulations and enforce the provisions of the both, the Act and the Regulations, in these ports. However, till date, none of the states have framed their regulations for enforcement in these ports.
- **Building and Other Construction Workers' Act** not being enforced in true spirit
- Even though the Building and Other Construction Workers' Act, 1996, is being enforced by the Labour Commissioners at the centre and at the state Level, but the safety and health provisions under the Act are highly technical in nature and are not being enforced in true letter and spirit.
- **Limited research on occupational safety:** Modern approaches for dealing with safety, health and environment at workplace demands research in the area. But the number of institutes in the country for research and development are limited and these too are not fully equipped for carrying out their activities effectively.
- **Capturing data** related to occupational safety and health across all the sectors has also been an issue for a long time, which has not been taken seriously till date. The most recent facts and figures shared by the ministry in Parliament in February 2019 were up to 2016 only.
- Each ministry (or the respective department) is supposed to have a detailed **policy on the working environment according to the guidelines on the National Policy.** But so far, the Ministries or Departments have not worked out their policy.
- **Lack of legislation on safety and health in agriculture** is hindering the ratification of ILO convention 155. The agriculture sector is the largest sector of economic activity and needs to be regulated for safety and health aspects. But the sector is lacking on legislation on safety and health for workers in this sector.
- It is also worrying that **the Micro, Small & Medium Enterprises too do not have any legislation** to cover the safety and health of the workers.

Sources: down to earth.

3. PROTECTION OF PLANT VARIETIES AND FARMERS' RIGHTS (PPV&FR) ACT, 2001

What to study?

- For Prelims and Mains: Key features of the act and the need for protection of farmers' rights.

Context: PepsiCo India has agreed to withdraw its lawsuit against farmers in Gujarat whom it had accused of infringing its patent. Farmers' rights activists have called it a major victory only if it's unconditional.

- Now, farmer groups have urged the Gujarat government to not opt for an out-of-court settlement with PepsiCo as the **Protection of Plant Varieties & Farmers Rights (PPV&FR) Act 2001** lets farmers cultivate any variety they like to, including the patented variety of potatoes, say activists.

What's the issue?

- The food and beverage multinational recently sued farmers in Gujarat for cultivating their proprietary FC5 variety of potatoes that are used to make Lay's chips. This variety is designed to have less moisture and sugar content than other spuds.
- PepsiCo had also proposed to settle in the last court hearing on April 26. The corporate giant's offer had two terms. **One, farmers should stop growing the registered potato variety and surrender their existing stocks. And if they wished to continue, they must enter PepsiCo's collaborative farming programme where they buy seeds from the company and sell the produce back to it.**

Objectives of the PPV & FR Act, 2001:

- To establish an effective system for the **protection of plant varieties**, the rights of farmers and **plant breeders** and to encourage the development of new varieties of plants.
- To recognize and protect the rights of farmers in respect of their contributions made at any time in conserving, improving and making available **plant genetic resources** for the development of **new plant varieties**.
- To accelerate agricultural development in the country, protect plant breeders' rights; stimulate investment for research and development both in public & private sector for the development new of plant varieties.
- Facilitate the growth of seed industry in the country which will ensure the availability of high quality seeds and planting material to the farmers.

Rights under the Act:

- Breeders' Rights :** Breeders will have exclusive rights to produce, sell, market, distribute, import or export the protected variety. Breeder can appoint agent/ licensee and may exercise for civil remedy in case of infringement of rights.
- Researchers' Rights :** Researcher can use any of the **registered variety** under the Act for conducting experiment or research. This includes the use of a variety as an initial source of variety for the purpose of developing another variety but repeated use needs prior permission of the registered breeder.

Farmers' Rights:

- A farmer who has evolved or developed a new variety is entitled for registration and protection in like manner as a breeder of a variety;
- Farmers variety can also be registered as an extant variety;
- A farmer can save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under the PPV&FR Act, 2001 in the same manner as he was entitled before the coming into force of this Act provided farmer shall not be entitled to sell branded seed of a variety protected under the PPV&FR Act, 2001;
- Farmers are eligible for recognition and rewards for the conservation of Plant Genetic Resources of land races and wild relatives of economic plants;
- There is also a provision for compensation to the farmers for non-performance of variety under Section 39 (2) of the Act, 2001 and
- Farmer shall not be liable to pay any fee in any proceeding before the Authority or Registrar or the Tribunal or the High Court under the Act.

The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001:

- Enacted by India in 2001 adopting **sui generis system**.
- It is in conformity with **International Union for the Protection of New Varieties of Plants (UPOV), 1978**.
- The legislation recognizes the **contributions of both commercial plant breeders and farmers in plant breeding activity** and also provides to implement **TRIPs** in a way that supports the specific socio-economic interests of all the stakeholders including private, public sectors and research institutions, as well as resource-constrained farmers.

Sources: down to earth.

4. KARNATAKA'S ORDER CAPPING WEIGHT OF SCHOOL BAGS

What to study?

- For prelims: Highlights of the order.
- For Mains: Need for and significance of the order, concerns associated with the issue.

Context: The Karnataka government has ordered all schools in the state to ensure that the weight of a child's schoolbag does not exceed 10% of the weight of the child. The order is applicable to all schools in the State, including government, aided and unaided institutions.

Highlights of the order:

- **Prescribed weight:** A bag of a student in Class 1 or 2 should weigh no more than 2 kg. It can weigh anywhere between 2 and 3 kg for students from Class 3 to 5. The prescribed weight increases progressively, with students in Class 9 and 10 allowed to carry bags in the 4-5 kg range.
- **Homework:** Students in Classes 1 and 2 should not be given any homework. Schools must set a timetable in advance, which will limit the number of books that have to be brought to class every day. All classwork should be kept in the school itself, either in files or books.
- **Awareness:** Managements have been directed to create awareness about the health hazards of lugging heavy school bags.
- **Other measures:** The order also says that schools must provide some space in classrooms where students can store their notebooks and textbooks. Another measure to ease the daily load is to make provisions for drinking water facilities so students don't have to carry water bottles. Schools have also been directed not to ask students to keep books of more than 100 pages.
- The third Saturday of every month should be followed as a "**No School Bag Day**". On that day, teachers have to engage students without any books or supplementary materials. Suggested activities include field visits, general knowledge clubs, art classes, indoor and outdoor games, abacus, dance classes, and debates.

Background:

- Karnataka's order capping weight of school bags reopens an important debate about children's health. The weight of a child's school bag has been a contested issue for long, and especially so in recent months.
- In October last year, the HRD Ministry directed all states and Union Territories to "formulate guidelines to regulate the teaching of subjects and weight of school bags in accordance with the Government of India instructions".

What necessitated this?

- Surveys and experts' views have confirmed that the weight not only hurts the children's back but causes long-term damage to their body. The burden may cause muscle strain and lead to deformation of the spine or even nervous disorders.

Sources: the hindu.

5. BLACK LISTS' OF INDIAN-ORIGIN PEOPLE

What to study?

- For prelims and mains: about the list, rationale behind, need for review and significance.

Context: The Ministry of Home Affairs announced that it has put an end to the local adverse lists commonly known as '**Black Lists**' of Indian-origin people.

What is it?

- It is a list maintained by Indian Embassies in different countries and posts abroad.
- It contains list of Indian-origin people who have taken asylum (i.e. right to international protection in this other country) abroad under plea of alleged persecution in India. These asylum seekers in list are predominantly Sikhs.
- Those who are in list are denied visa services by Indian missions and posts in respective country.

Implications of the new move:

- Such Indian-origin asylees and their family members who are now not in adverse list, will be granted visa and consular services at par with foreigners of country in which they are living. They can also get Overseas Citizenship of India (OCI) cards if they have held normal Indian visas for at least two years.
- The government has also delegated to state governments and Foreigners Regional Registration Officers (FRROs) to grant permits to foreigners to visit protected and restricted areas in the country.
- The state governments and FRROs can now grant such permits even for non-tourism purposes and even in areas not opened for tourism purposes.

6. ECONOMIC CENSUS

What to study?

- Prelims and Mains: What is Economic Census, who conducts and coordinates, uses and significance.

Context: The **7th Economic Census -2019** is being conducted by MoSPI to provide disaggregated information on various operational and structural aspects of all establishments in the country.

- **Implementing agency:** MoSPI has partnered with **Common Service Centres, CSC e-Governance Services India Limited, a Special Purpose Vehicle under the MEITY** as the implementing agency.

About Economic Censuses:

- **Launched** in 1976 as a plan scheme.
- **Coverage:** All entrepreneurial units in the country which are involved in any economic activities of either agricultural or non-agricultural sector which are engaged in production and/or distribution of goods and/or services not for the sole purpose of own consumption.
- **Objective:** It provides detailed information on operational and other characteristics such as number of establishments, number of persons employed, source of finance, type of ownership etc.
- **Significance:** This information used for micro level/ decentralized planning and to assess contribution of various sectors of the economy in the gross domestic product (GDP).
- Total Six Economic Censuses (EC) have been conducted till date. First one was conducted in 1977 by CSO.

7. NATIONAL E-VIDHAN APPLICATION (NEVA) PROJECT

What to study?

- For prelims and mains: key features and significance of the project.

Context: The **Kerala Legislative Assembly** recently announced an initiative to digitize all its records and proceedings under its ambitious project called **E-Vidhan**.

- **Significance:** Once the project is completed, all the Assembly proceedings like submission of notice by a member, question and answers, and all the other correspondence and business concerning the Assembly will go paperless.

Key features:

- Paperless Assembly or e-Assembly is a concept involving of electronic means to facilitate the work of Assembly.
- It enables automation of entire law-making process, tracking of decisions and documents, sharing of information.
- Through the cloud technology (**Meghraj**), data deployed can be accessed anywhere at any time.
- **Himachal Pradesh is already the first Digital Legislature of the country.**

What is e-Vidhan?

- It is a **Mission Mode Project (MMP)** comes under the **Digital India Programme**.
- **Ministry of Parliamentary Affairs (MoPA)** is the 'Nodal Ministry' for its implementation in all the 31 States/UTs with Legislatures.
- The **funding** for e-Vidhan is provided by the MoPA and **technical support by Ministry of Electronics and Information Technology (MeitY)**.
- The funding of NeVA is through **Central Sponsored Scheme**. 60:40; and 90:10 for North East & hilly States and 100% for UTs.
- **Aim of the project:** To bring **all the legislatures of the country together**, in one platform thereby creating a massive data depository without having the complexity of multiple applications.

State Government's Role in the implementation of e-Vidhan:

- The State Government will appoint a Secretary level officer to be designated as the nodal officer/representative for e-Vidhan implementation in the State Legislature(s).
 - State Government will bear the funds required for running of e-Vidhan MMP after 3 years.
 - The State Government will ensure capacity building for the effective implementation of e-Vidhan MMP module.
 - State Government/Legislature will undertake maintenance and replacement of ICT equipment after 3 years.
- Sources: the Hindu.

8. NATIONAL REGISTER OF CITIZENS (NRC)

What to study?

- For Prelims: Particulars of NRC.
- For Mains: Update of NRC- issues associated including ethical concerns.

Context: The Supreme Court of India has held that a **Foreigner Tribunal's order** declaring a person as an illegal foreigner will be **binding** and will prevail over government decision to include or exclude name from National Register of Citizens (NRC) in Assam.

Review:

- The persons whose names are not included in NRC in Assam can produce documents including ones related to their family tree and thus seek review of tribunal's decision.
- As per SC it cannot create an appellate forum for those, declared as illegal foreigners by the foreigners tribunal, by using its power under Article 142 of Indian Constitution.

What next?

- If the name of a person, included in NRC in Assam is deleted on ground that he was a foreigner, then principle of 'res-judicata' (a judicially decided issue cannot be re-agitated) would apply on decision taken by foreigners tribunal. Thus a person who has been declared an illegal immigrant cannot seek re-decision (right of appeal) against exclusion or dropping of his name in normal circumstances.

Sources: The Hindu.

About foreigners tribunal:

- **Established as per Foreigners (Tribunal) Order, 1964.** The order was passed by Government of India (GoI) under **section 3 of foreigners Act, 1946.**
- The Centre can constitute foreigners tribunals whenever required to look into question of whether a person is or not a foreigner within the meaning of Foreigners Tribunals act, 1946.
- **Composition:** The Foreigners tribunal shall consist of persons having judicial experience as government may think fit to appoint.
- **Powers:** It has powers of a civil court while trying a suit under code of civil procedure, 1908. It includes summoning any person, requiring any document and issuing commissions for examination of any witness.

9. UNLAWFUL ACTIVITIES (PREVENTION) ACT

What to study?

- For prelims and mains: UAPA- features, significance, concerns over its misuse and need.

Context: Bangladesh-based terror outfit — the Jamaat-ul-Mujahideen Bangladesh (JMB) — has been banned by the Centre under the anti-terror law UAPA.

The law is contested for few draconian provisions:

- The Act introduces a vague definition of terrorism to encompass a wide range of non-violent political activity, including political protest.
- It empowers the government to declare an organisation as 'terrorist' and ban it. Mere membership of such a proscribed organisation itself becomes a criminal offence.

About the Unlawful Activities (Prevention) Act (UAPA):

- This law is aimed at **effective prevention of unlawful activities associations** in India.
- Its main objective is to make powers available for dealing with activities directed against the integrity and sovereignty of India.
- The Act makes it a crime to support any secessionist movement or to support claims by a foreign power to what India claims as its territory.
- The UAPA, framed in 1967, has been amended twice since: first in 2008 and then in 2012.

- It allows detention without a chargesheet for up to 180 days and police custody can be up to 30 days.
- It creates a strong presumption against bail and anticipatory bail is out of the question. It creates a presumption of guilt for terrorism offences merely based on the evidence allegedly seized.
- It authorises the creation of special courts, with wide discretion to hold in-camera proceedings (closed-door hearings) and use secret witnesses but contains no sunset clause and provisions for mandatory periodic review.

Sources: the Hindu.

Topics: *Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes.*

1. SC/ST QUOTA IN PROMOTIONS

What to study?

- For prelims: Names of relevant SC cases and constitutional provisions wrt to SC/ST welfare.
- For mains: Significance of Supreme Court verdict and its implications.

Context: Supreme Court, in a landmark ruling, has upheld the **constitutional validity of a 2018 Karnataka law granting consequential seniority to government servants promoted on the basis of reservation.**

The Verdict:

- While upholding the validity of the **Karnataka Extension of Consequential Seniority to Government Servants Promoted on the Basis of Reservation (to the Posts in the Civil Services of the State) Act, 2018**, said it “has cured the deficiency” on account of which a **2002 law on reservation in promotions had been quashed in 2017**.
- The “deficiency” referred to was **the lack of an exercise to determine and collect quantifiable data on inadequacy of representation, backwardness and the impact on overall efficiency before the law was enacted**, as mandated by the Supreme Court’s 2006 judgment in **M Nagaraj vs Union of India**.

What's the issue?

- Karnataka’s 2018 law protects consequential seniority from April 24, 1978. The Karnataka legislature enacted the 2018 law after the Supreme Court invalidated the 2002 Act in **B K Pavitra vs Union of India**.
- Striking down the 2002 law in 2017, the Supreme Court had said that **Sections 3 and 4 of the Act were ultra vires of Articles 14 and 16 of the Constitution on the ground that the exercise mandated in the Nagaraj judgment had not been carried out**.

Observations made by SC:

- Quota for Scheduled Castes and Scheduled Tribes is “**not at odds with the principle of meritocracy**” and is “true fulfilment of effective and substantive equality by accounting for the structural conditions into which people are born”.
- The providing of reservation for SCs and STs is not at odds with the principle of meritocracy. Merit must not be limited to narrow and inflexible criteria such as one’s rank in a standardised exam, but rather must flow from the actions a society seeks to reward, including the promotion of equality in society and diversity in public administration.

Constitutional basis- Article 335:

- Article 335 recognises that special measures need to be adopted for considering the claims of SCs and STs in order to bring them to a level-playing field.
- **Need:** Centuries of discrimination and prejudice suffered by the SCs and STs in a feudal, caste-oriented societal structure poses real barriers of access to opportunity. The proviso contains a realistic recognition that unless special measures are adopted for the SCs and STs, the mandate of the Constitution for the consideration of their claim to appointment will remain illusory.
- **Significance:** The proviso is an aid of fostering the real and substantive right to equality to the SCs and STs. It protects the authority of the Union and the States to adopt any of these special measures, to effectuate a realistic (as opposed to a formal) consideration of their claims to appointment in services and posts under the Union and the states. It also emphasises that the need to maintain the efficiency of administration cannot be construed as a fetter on adopting these special measures designed to uplift and protect the welfare of the SCs and STs.

Why this is significant?

- This Supreme Court order is significant because it underlines “**a ‘meritorious’ candidate is not merely one who is ‘talented’ or ‘successful’ but also one whose appointment fulfils the constitutional goals of uplifting members of the SCs and STs and ensuring a diverse and representative administration**”.

Indra Sawhney vs Union of India and M Nagraj case:

- In its landmark 1992 decision in *Indra Sawhney vs Union of India*, the Supreme Court had held that reservations under Article 16(4) could only be provided at the time of entry into government service but not in matters of promotion. It added that the principle would operate only prospectively and not affect promotions already made and that reservation already provided in promotions shall continue in operation for a period of five years from the date of the judgment. It also ruled that the creamy layer can be and must be excluded.
- On June 17, 1995, Parliament, acting in its constituent capacity, adopted the **seventy-seventh amendment by which clause (4A) was inserted into Article 16 to enable reservation to be made in promotion for SCs and STs**. The validity of the seventy-seventh and eighty-fifth amendments to the Constitution and of the legislation enacted in pursuance of those amendments was challenged before the Supreme Court in the Nagaraj case.
- Upholding the validity of Article 16 (4A), the court then said that it is an enabling provision. “The State is not bound to make reservation for the SCs and STs in promotions. But, if it seeks to do so, it must collect quantifiable data on three facets — the backwardness of the class; the inadequacy of the representation of that class in public employment; and the general efficiency of service as mandated by Article 335 would not be affected”.
- The court ruled that the **constitutional amendments do not abrogate the fundamentals of equality**.

Sources: The Hindu.

2. SOCIAL AND LABOR CONVERGENCE PROGRAMME (SLCP)

What to study?

- For prelims and mains: key features, significance and need for the programme.

Context: The ‘Social and Labor Convergence Programme (SLCP),’ an initiative to have a standard-neutral, converged assessment framework for the textile and clothing industry, will be launched in India shortly.

Key features of the programme:

- The SLCP is **not a code of conduct or compliance programme**.
- The converged assessment framework is a tool developed by the SLCP, which provides a data set with no value judgment or scoring.
- It is, however, compatible with existing audit systems and codes of conduct. This means that the same data set can be used by a wide-range of stakeholders. It **eliminates the need for repetitive audits to be carried out on the same facility**.
- The initiative is led by world’s leading manufacturers, brands, retailers, industry groups, non-governmental organisations and service providers.
- The objective of the initiative Its aim is to improve the working conditions in textile units by allowing resources that were previously designated for compliance audits to be redirected towards the improvement of social and labour conditions.
- This is a **voluntary adoption by the textile and clothing makers**.

Significance:

- For the exporting units, it will reduce the number of social audits and facilitate measuring of employment practices, thus improving working conditions and employee relations. It also redeploys resources towards improvement actions and fosters collaboration between supply chain partners.

Sources: the Hindu.

Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

1. AMR RESISTANCE

Concerns:

- Even though antimicrobial resistance is acknowledged by policymakers as a major health crisis, few have considered its economic impact.
- According to Interagency Coordination Group on Antimicrobial Resistance (IACG)'s report Titled "**No Time to Wait: Securing The Future From Drug Resistant Infections**", in about three decades from now uncontrolled antimicrobial resistance will cause global economic shocks on the scale of the 2008-09 financial crisis.

Key findings:

- High human and economic cost** – With nearly 10 million people estimated to die annually from resistant infections by 2050, health-care costs and the cost of food production will spike, while income inequality will widen.
- GDP loss and poverty widening** – In the worst-case scenario, the world will lose 3.8% of its annual GDP by 2050, while 24 million people will be pushed into extreme poverty by 2030.
- Nations must acknowledge this eventuality, the IACG says, and act to fight it.
- For high- and mid-income nations**, the price of prevention, at \$2 per head a year, is extremely affordable. **For poorer countries**, the price is higher but still modest compared to the costs of an antibiotic apocalypse.

What can be done?

- Phasing out critical human-use antibiotics in the animal husbandry sector, such as quinolones.
- A multi-stakeholder approach, involving private industry, philanthropic groups and citizen activists is needed.
- Private pharmaceutical industries must take it upon themselves to distribute drugs in a responsible manner.
- Philanthropic charities must fund the development of new antibiotics, while citizen activists must drive awareness.

2. TRANS FATTY ACIDS (TFA)

What to study?

- For Prelims and Mains: Transfats- what are they, uses, concerns and the need for reduction in their usage.

Context: The WHO has joined hands with the **International Food and Beverage Alliance (IFBA)** to achieve the target of eliminating industrially produced trans fats by 2023. Eliminating industrially produced trans-fat is one of the simplest and most effective ways to save lives and create a healthier food supply.

- The commitment made by the IFBA is in line with the **WHO's target to eliminate industrial trans fat from the global food supply by 2023**.

What are Trans fats?

- Trans fatty acids (TFAs) or Trans fats are the **most harmful type of fats** which can have much more adverse effects on our body than any other dietary constituent. These fats are largely produced artificially but a small amount also occurs naturally. Thus in our diet, these may be present as Artificial TFAs and/ or Natural TFAs.
- Artificial TFAs are formed when hydrogen is made to react with the oil to produce fats resembling pure ghee/butter.
- In our diet the major sources of artificial TFAs are the partially hydrogenated vegetable oils (PHVO)/vanaspati/ margarine while the natural TFAs are present in meats and dairy products, though in small amounts.

Harmful effects:

- TFAs pose a higher risk of heart disease than saturated fats. While saturated fats raise total cholesterol levels, TFAs not only raise total cholesterol levels but also reduce the good cholesterol (HDL), which helps to protect us against heart disease. Trans fats consumption increases the risk of developing heart disease and stroke.

- It is also associated with a higher risk of developing obesity, type 2 diabetes, heart disease, metabolic syndrome, insulin resistance, infertility, certain types of cancers and can also lead to compromised fetal development causing harm to the yet to be born baby.

Why they are increasingly being used?

- TFA containing oils can be preserved longer, they give the food the desired shape and texture and can easily substitute 'Pure ghee'. These are comparatively far lower in cost and thus add to profit/saving.

Permissible limit:

- WHO recommends that trans-fat intake be limited to less than 1% of total energy intake and has called for the total elimination of TFAs in global food supply by 2023. FSSAI has proposed to limit TFA limit in foods to 2% and eliminate trans fats from foods by 2022.

Sources: The Hindu.

3. MONKEYPOX VIRUS: SINGAPORE REPORTS FIRST CASE OF RARE VIRUS

What to study?

- For prelims and mains: Monkeypox Virus- causes, effects and treatment.

Context: Singapore recently reported the first ever case of the **Monkeypox Virus**, a rare virus similar to the human smallpox.

About Monkeypox Virus:

- Monkeypox virus (MPXV) is an **orthopoxvirus** that causes a viral disease with symptoms in humans similar, but milder, to those seen in smallpox patients.
- Smallpox was declared eradicated in 1980, whereas **human monkeypox is endemic in villages of Central and West Africa**.
- The **occurrence of cases is often found close to tropical rainforests** where there is frequent contact with infected animals.
- There is **no evidence to date that person-to-person transmission alone can sustain monkeypox in the human population**.

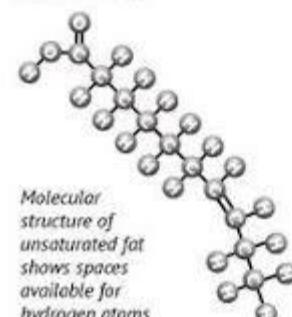
Different Kinds of Fat

Fatty acids, which are the building blocks of fat, are long chains of carbon and hydrogen atoms. Essential fatty acids are those needed by the human body that can only be obtained through food. Some fats are harmful, however.



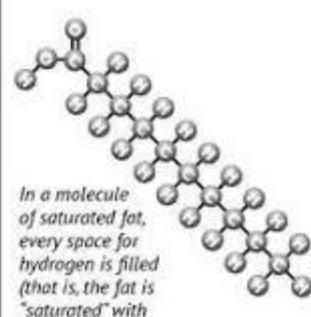
UNSATURATED FATS

The so-called "good" fats can be found in nuts, avocados and other vegetables. The molecular structure of unsaturated fat causes it to be lower in calories than other fats.



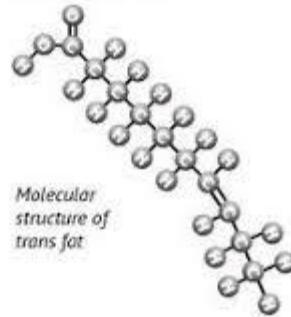
SATURATED FATS

These fats are found mostly in animal products. It is recommended that people reduce their consumption of saturated fats in order to stay healthy.



TRANS FATS

Trans fats are unsaturated (good) fats which have been partially saturated with hydrogen to extend their shelf life. Unfortunately, these trans fats are found to elevate "bad" cholesterol and should be avoided.



SOURCES: UC-CLERMONT COLLEGE; ALLIANCE FOR A HEALTHIER GENERATION; DREAMSTIME

KARL TATE / © MyHealthNewsDaily.com

Transmission:

- **Monkeypox is a viral zoonosis, i.e.** a disease transmitted from animals to humans. It can be transmitted through contact with the blood, bodily fluids, or cutaneous or mucosal lesions of infected animals. Human infections have been documented through the handling of infected monkeys, Gambian giant rats and squirrels, with rodents being the most likely reservoir of the virus.

Treatment:

- As of now, there is no specific treatment or vaccine available for monkeypox infection. The patient is generally treated in isolation by doctors.

Sources: toi.

4. LOW DENSITY OF HEALTH PROFESSIONALS

What to study?

- For prelims and mains:

Context: According to a **World Health Organisation database**, Despite the health sector employing five million workers, India continues to have low density of health professionals.

- Critical Shortage in India.

Concerns for India:

- Acute shortages and inequitable distributions of skilled health workers
- India is in the “**critical shortage of healthcare providers**” category.
- Bihar, Jharkhand, Uttar Pradesh and Rajasthan are the worst hit while Delhi, Kerala, Punjab and Gujarat compare favorably.
- The health workforce in India **comprises broadly eight categories, namely:** doctors (allopathic, alternative medicine); nursing and midwifery professionals; public health professionals (medical, non-medical); pharmacists; dentists; paramedical workers (allied health professionals); grass-root workers (frontline workers); and support staff.
- Government statistics for 2008, based on vacancies in sanctioned posts showed 18% of primary health centres were without a doctor, about 38% were without a laboratory technician and 16% were without a pharmacist.

The major challenges faced by healthcare system in India are (general observations):

- **Doctor-Density Ratio:** The doctor-density ratio in India at 8 per 10,000 people as against one doctor for a population of 1,000.
- **Shortage of Medical Personnel:** There is a staggering shortage of medical and paramedical staff at all levels of care: 10,907 auxiliary nurse midwives and 3,673 doctors are needed at sub-health and primary health centres, while for community health centres the figure is 18,422 specialists.
- **Finance:** At about 1.3% of the national income, India's public healthcare spending between 2008 and 2015, has virtually remained stagnant. This is way less than the global average of 6 per cent.
- **Crumbling public health infrastructure:** Given the country's crumbling public healthcare infrastructure, most patients are forced to go to private clinics and hospitals.
- **High Out of Pocket Expenditure:** 70% of the medical spending is from the patient's pockets leading to huge burden and pushing many into poverty. Most consumers complain of rising costs.
- **Insurance:** India has one of the lowest per capita healthcare expenditures in the world. Government contribution to insurance stands at roughly 32 percent, as opposed to 83.5 percent in the UK. The high out-of-pocket expenses in India stem from the fact that 76 percent of Indians do not have health insurance.
- **Rural-urban disparity:** The growth of health facilities has been highly imbalanced in India. Rural, hilly and remote areas of the country are under served while in urban areas and cities, health facility is well developed. The SC/ST and the poor people are far away from modern health service.
- **Poor healthcare ranking:** India ranks as low as 145th among 195 countries in healthcare quality and accessibility, behind even Bangladesh and Sri Lanka.
- **Commercial motive:** lack of transparency and unethical practices in the private sector.

- Lack of level playing field between the public and private hospitals: This has been a major concern as public hospitals would continue receiving budgetary support. This would dissuade the private players from actively participating in the scheme.

Global scenario:

- Shortages of skilled health workers across low- and middle-income countries.
- Southeast Asia needs a 50% increase in healthcare manpower to achieve universal health coverage by 2030.

Need of the hour:

- The need of the hour is to design courses for different categories of non-physician care providers. Competencies (and not qualification alone) should be valued and reform must be brought in regulatory structures to provide flexibility for innovations.

Sources: The Hindu.

5. NATIONAL TESTING AGENCY

About NTA:

- In pursuance of the **Budget Announcement 2017-18**, the Union Cabinet, in November 2017, approved creation of the **National Testing Agency (NTA)** as an autonomous and self-sustained premier testing organization to conduct entrance examinations for Higher Education Institutions (HEIs) in the country.

Constitution:

- NTA will be chaired by an eminent educationist appointed by MHRD.
- The CEO will be the Director General to be appointed by the Government.
- There will be a Board of Governors comprising members from user institutions.
- The Director General will be assisted by 9 verticals headed by academicians/ experts.

Finances:

- NTA will be given a one-time grant of Rs.25 crore from the Government of India to start its operation in the first year. Thereafter, it will be financially self-sustainable.

6. GLOBAL DRUG SURVEY (GDS)

What to study?

- For prelims and mains: key findings of the study, concerns raised and reforms needed.

Context: Global Drug Survey (GDS) report has been released.

About the survey:

- **The Global Drug Survey (GDS)** is an anonymised **online survey** that uses a detailed questionnaire to assess trends in drug use and self-reported harms among regular drug users and early adopters of new trends.
- The survey is not designed to determine the prevalence of drug behaviour in a population. It throws light on stigmatized behaviours and health outcomes of a hidden population that is otherwise difficult to reach.
- It uses its data and expertise to create digital health applications delivering screening and brief interventions for drugs and alcohol.
- It also produces a range of drug education materials for health and legal professionals, the entertainment industry and the general public.

Key findings on India:

- Indians — more than from other nationalities — are seeking help to reduce their alcohol intake.
- Alcohol, tobacco and cannabis were the most common stimulants used by Indians.
- Of the nearly 1,00,000 respondents from 30 countries, Indians reported ‘being drunk’ on an average of 41 times in the last 12 months — behind the U.K., the U.S., Canada, Australia and
- About 6% of the female Indians surveyed reported seeking ‘emergency medical treatment’ in the last 12 months. The global female average was about 13%.

Drug menace in India:

- India is vulnerable to narcotic drug trafficking as it is located between two largest Opium producing regions of the world i.e. Golden Crescent in the west and Golden Triangle in the east. Drug trafficking and abuse also pose serious threat to our societies.
- Estimates suggest that there are 40 lakh drug addicts in the country. The most common drugs of abuse are 'ganja', 'hashish', 'opium' and 'heroin'. The abuse of pharmaceutical preparations like 'buprenorphine', codeine-based cough syrups and painkillers like 'proxivon' has also assumed serious proportions. In certain regions of the country, drug abuse has already become a severe social-economic problem affecting the vulnerable age groups.

Sources: the Hindu.

7. NPPA CAPS PRICES OF 9 NON-SCHEDULED DRUGS

What to study?

- For Prelims: About NPPA, DPCO and scheduled drugs.
- For Mains: Issues involved and the need for drug price monitoring, relevance of DPCO.

Context: NPPA has capped the prices of 9 **non-scheduled** cancer drugs by up to 87%, capping their trade margin at 30%. The new list of drugs is in continuation to the government's efforts to curb profiteering on these vital drugs.

Background:

- The NPPA currently fixes price of drugs on the National List of Essential Medicines under schedule-I of DPCO. So far, around 1,000 drugs have been price-capped through this mode.
- The trade margin rationalisation has been rolled out as proof of concept, stressing on the new paradigm of self-regulation by the industry.

Why are the prices of medicines rising ?

- The reasons for rise in the prices of medicines are :
- rise in the price of bulk drugs;
- rise in the cost of excipients used in the production of medicines like Lactose, Starch, sugar, glycerine, solvent, gelatine capsules etc.;
- rise in the cost of transport, freight rates;
- rise in the cost of utilities like fuel, power, diesel, etc.;
- for imported medicines, rise in the c.i.f. price and depreciation of the Rupee;
- changes in taxes and duties.

What is the "Drugs (Prices Control) Order (DPCO)" ?

- The Drugs Prices Control Order, 1995 is an order issued by the Government of India under Sec. 3 of **Essential Commodities Act, 1955** to regulate the prices of drugs.
- The Order interalia provides the **list of price controlled drugs, procedures for fixation of prices of drugs, method of implementation of prices fixed by Govt., penalties for contravention of provisions etc.**
- For the purpose of implementing provisions of DPCO, powers of Govt. have been vested in **NPPA**. Later, the Drugs (Prices Control) Order (DPCO) 2013 was notified.

Why the DPCO is issued under Essential Commodities (EC) Act ?

- Drugs are essential for health of the society. Drugs have been declared as Essential and accordingly put under the Essential Commodities Act.

Are all the drugs marketed in the country under price control ?

- No. The National List of Essential Medicines (NLEM) 2011 is adopted as the primary basis for determining essentiality, which constitutes the **list of scheduled medicines** for the purpose of price control. The DPCO 2013 contains 680 scheduled drug formulations spread across 27 therapeutic groups. However, the prices of other drugs can be regulated, if warranted in public interest.

What is NPPA and its role ?

- National Pharmaceutical Pricing Authority (NPPA), was established on 29th August 1997 as an independent body of experts as per the decision taken by the Cabinet committee in September 1994 while reviewing Drug Policy.

- The Authority, interalia, has been entrusted with the task of fixation/revision of prices of pharmaceutical products (bulk drugs and formulations), enforcement of provisions of the Drugs (Prices Control) Order and monitoring of the prices of controlled and decontrolled drugs in the country.

Sources: The Hindu.

8. MALARIA-FREE STATUS

What to study?

- For prelims: malaria-free status, criteria, causes of the disease and treatment.
- For mains: concerns over the spread of the disease and measures needed to prevent its spread.

Context: The World Health Organization (WHO) declared **Algeria** and **Argentina** as **malaria-free**, with no recorded cases of indigenous transmission of the disease since 2013 and 2010 respectively.

- While **Algeria is the second African country to be officially recognised as malaria-free**, after Mauritius (certified in 1973), **Argentina is the second country in the Americas** to be certified in 45 years, after Paraguay in June 2018.

Background:

- Contracted through the bite of an infected mosquito, malaria remains one of the world's leading killers. It accounted for an estimated 219 million cases from 87 countries and over 400,000 related deaths in 2017. Over 60% of fatalities were among children under five years, and caused 266,000 of all malaria deaths worldwide, according to WHO's World malaria report 2018.

Vulnerability:

- With 92 per cent of malaria cases and 93 per cent of malaria deaths recorded from Africa, the region had a high share of the global malaria burden in 2017. Four countries in the continent accounted for nearly half of all malaria cases worldwide: Nigeria (25 per cent), the Democratic Republic of the Congo (11 per cent), Mozambique (five per cent), and Uganda (four per cent).

Criteria:

- To receive WHO certification, a country has to prove that it has interrupted indigenous transmission of the disease for at least three consecutive years.
- A total of 36 countries and territories have received this WHO certification. The last case of indigenous malaria was reported from Algeria in 2013 and Argentina in 2010. The certificates will be presented on the sidelines of the 72nd session of the World Health Assembly.

About Malaria:

- caused** by the infectious Plasmodium
- Spread:** Female Anophelesmosquitoes deposit parasite sporozoites into the skin of a human host.
- Malaria is a leading cause of human morbidity and mortality. Despite huge progress in tackling the disease, there are still 212 million new cases of malaria and 430,000 malaria-related deaths worldwide each year according to the World Health Organisation (WHO). Most cases (80%) and deaths (90%) were in sub-Saharan African.

World's first vaccine against a parasitic disease: Mosquirix:

- RTSS, known by its trade name Mosquirix**, uses antibodies to target proteins presented by sporozoites (such as the circumsporozoite protein of falciparum) to enhance the immune system and help prevent the parasite from infecting the liver.
- Mosquirix is also engineered using a hepatitis B viral protein and a chemical adjuvant** to further boost the immune response for enhanced effectiveness.

Durgama Anchalare Malaria Nirakaran (DAMaN) initiative:

- Among states, Odisha's **Durgama Anchalare Malaria Nirakaran (DAMaN) initiative** is significant. The initiative aims to deliver services to the most inaccessible and hardest hit people of the State. The initiative has in-built innovative strategies to combat asymptomatic malaria.
- The programme is **jointly implemented by Indian Council of Medical Research-National Institute of Malaria Research (ICMR-NIMR), National Vector Borne Disease Control Programme (NVBDCP), Odisha and Medicines for Malaria Venture (MMV)**.

India's efforts in this regard:

- India's progress in fighting malaria is an outcome of concerted efforts to ensure that its malaria programme is country-owned and country-led, even as it is in alignment with globally accepted strategies.
- At the East Asia Summit in 2015, India pledged to eliminate the disease by 2030. Following this public declaration, India launched the five-year National Strategic Plan for Malaria Elimination. This marked a shift in focus from malaria "control" to "elimination". The plan provides a roadmap to achieve the target of ending malaria in 571 districts out of India's 678 districts by 2022.

Sources: the Hindu.

9. WHO STRATEGY ON ANTIVENOMS

What to study?

- For prelims and mains: snakebites- concerns, spread, WHO strategy-need and significance.

Context: The World Health Organization has unveiled a new strategy to dramatically cut deaths and injuries from snakebites, warning a dearth of antivenoms could soon spark a "public health emergency".

Need for a comprehensive strategy:

- Each year, nearly three million people are bitten by poisonous snakes, with an estimated 81,000-138,000 deaths. Another 400,000 survivors suffer permanent disabilities and other after-effects, according to WHO figures.
- Snake venom can cause paralysis that stops breathing, bleeding disorders that can lead to fatal haemorrhage, irreversible kidney failure and tissue damage that can cause permanent disability and limb loss.
- Most snakebite victims live in the world's tropical and poorest regions, and children are worse affected due to their smaller body size.
- WHO has already categorised "snakebite envenoming" as a **Neglected Tropical Disease**.

WHO strategy:

- **Aim:** to cut snakebite-related deaths and disabilities in half by 2030.
- An important part of the strategy is to significantly **boost production of quality antivenoms**.
- Reshape the market and employ greater regulatory control.
- Restore a sustainable market for snakebite treatment. There is need for a 25-percent increase in the number of competent manufacturers by 2030.
- Integrate snakebite treatment and response into national health plans in affected countries, including better training of health personnel and educating communities.

Challenges producing antivenoms:

- A significant challenge in manufacturing of antivenoms is the preparation of the correct **immunogens** (snake venoms). At present very few countries have capacity to produce snake venoms of adequate quality for antivenom manufacture, and many manufacturers rely on common commercial sources. These may not properly reflect the geographical variation that occurs in the venoms of some widespread species.
- In addition, **lack of regulatory capacity for the control of antivenoms** in countries with significant snake bite problems results in an inability to assess the quality and appropriateness of the antivenoms.
- **Poor data on the number and type of snake bites** have led to difficulty in estimating needs, and deficient distribution policies have further contributed to manufacturers reducing or stopping production or increasing the prices of antivenoms.
- **Poor regulation and the marketing of inappropriate or poor quality antivenoms** has also resulted in a loss of confidence in some of the available antivenoms by clinicians, health managers, and patients, which has further eroded demand.

Sources: the Hindu.

11. WORLD HEALTH ASSEMBLY (WHA)

What to study?

- For prelims: about WHA, Astana declaration and SDGs.

- For mains: UHC- targets, challenges and measures needed.

Context: Delegates at the **72nd World Health Assembly** in **Geneva** agreed on three resolutions to ensure that the world meets the **universal health coverage (UHC)** target of the Sustainable Development Goals (**SDGs**).

These resolutions include:

- The member countries will decide to take measures to implement the **Declaration of Astana** vowing to strengthen primary healthcare and achieve universal health coverage by 2030. The declaration was adopted at the **2018 Global Conference on Primary Health Care**. This marked the **40th anniversary of the Declaration of Alma-Ata**.
- To support community health worker programmes and allocate adequate resources. Such workers should be well-trained, effectively supervised and properly recognised for the work they do. At present there is a shortfall of 18 million in the number of health workers in the world and this could severely hamper the progress towards UHC.
- The member states shall push for UHC with focus on poor, vulnerable and marginalized individuals and groups. This will call for the involvement of governments in coordinating the work required across all sectors to achieve universal health coverage.

Need of the hour:

- This might not be enough as primary health care is more than universal health care. WHA should take a human rights-based approach to health for a more just and caring world.

What is Universal health coverage?

- Universal health coverage (UHC) is about ensuring all people and communities have access to quality health services where and when they need them, without suffering financial hardship.
- It includes the full spectrum of services needed throughout life—from health promotion to prevention, treatment, rehabilitation, and palliative care—and is best based on a strong primary health care system.
- Achieving UHC is one of the key targets of the 2030 Agenda for Sustainable Development.

Sources: down to earth.

12. MEASLES OUTBREAKS IN USA

What to study?

- For prelims: Measles- causes, symptoms, spread and vaccines.
- For mains: can India be blamed for the Measles outbreak in the US, what needs to be done?

Context: United States (US) is in the middle of its worst measles outbreaks since last 25 years. A paper, published in the Lancet, places **India among seven countries that pose high risk** for spread of the disease.

Observations made in the report:

- The **rise of measles in US is mainly because of two things**- one, Reintroduction of the virus at individual localities through travel from countries experiencing outbreaks and two, low vaccination rates fueled by non-medical exemptions (NMEs).
- These outbreaks are linked to travelers who brought measles back from other countries such as Israel, Ukraine and the Philippines — where large measles outbreaks are occurring.
- The top countries ordered by risk (of spreading measles) posed are:** India, China, Mexico, Japan, Ukraine, Philippines, and Thailand.

World Health Assembly (WHA):

- The World Health Assembly (WHA) is the forum through which the World Health Organization (WHO) is governed by its 194 member states.
- It is the world's highest health policy setting body and is composed of health ministers from member states.
- The members of the World Health Assembly generally meet every year in May in Geneva, the location of WHO Headquarters.
- The main functions of the World Health Assembly are to determine the policies of the Organization, appoint the Director-General, supervise financial policies, and review and approve the proposed programme budget.

Measures suggested by the study:

- Surveillance should be directed towards countries with high incoming passenger volume. Additionally, measures to improve public health in these countries should be considered. For instance, foundations that are committed to global health enhancement could allocate funding for vaccination efforts in these countries.

About Measles:

- **What is It?** Measles is a highly **contagious viral disease**. It remains an important cause of death among young children globally, despite the availability of a safe and effective vaccine.
- **Spread:** Measles is transmitted via droplets from the nose, mouth or throat of infected persons.
- **Initial symptoms**, which usually appear 10–12 days after infection, include high fever, a runny nose, bloodshot eyes, and tiny white spots on the inside of the mouth. Several days later, a rash develops, starting on the face and upper neck and gradually spreading downwards.
- **Vulnerability:** Severe measles is more likely among poorly nourished young children, especially those with insufficient vitamin A, or whose immune systems have been weakened by HIV/AIDS or other diseases.
- **The most serious complications** include blindness, encephalitis (an infection that causes brain swelling), severe diarrhoea and related dehydration, and severe respiratory infections such as pneumonia.
- **Prevention:** Routine measles vaccination for children, combined with mass immunization campaigns in countries with low routine coverage, are key public health strategies to reduce global measles deaths.
- **Preventive efforts:** Under the **Global Vaccine Action Plan**, measles and rubella are targeted for elimination in five WHO Regions by 2020. WHO is the lead technical agency responsible for coordination of immunization and surveillance activities supporting all countries to achieve this goal.

Sources: the Hindu.

13. EQUIP PROJECT

What to study?

- For prelims and mains: key features, need for and significance of the project.

Context: Ministry of Human Resource Development plans to launch an ambitious ₹1.5 lakh crore **EQUIP project to improve the quality and accessibility of higher education over the next five years**.

Key features:

- **EQUIP** stands for **the Education Quality Upgradation and Inclusion Programme** and was crafted by ten committees led by experts within the government.
- **Aims:** EQUIP is meant to bridge the gap between policy and implementation. The project is made to bring transformation in the higher education system in the upcoming 5 years.
- **Objectives:** To **improve access to higher education**, especially for underserved communities; improve the gross enrolment ratio; improve teaching and learning processes; build educational infrastructure; improve the quality of research and innovation; use technology and online learning tools; and work on accreditation systems, governance structures and financing.

Sources: the Hindu.

14. INSTITUTES OF EMINENCE SCHEME

What to study?

- For Prelims and Mains: Institutes of Eminence Scheme- features and significance.

Context: The human resource development (HRD) ministry is likely to move the Cabinet soon to increase by half the number of educational establishments that can be tagged “institutes of eminence”, or IoEs, offering them greater autonomy. The ministry wants the number increased to 30 from the original 20.

What is Institutions of Eminence scheme?

- The institutes of eminence scheme under the **Union human resource development (HRD) ministry** aims to project Indian institutes to global recognition.

- The selected institutes will enjoy **complete academic and administrative autonomy**.
- The government will run 10 of these and they will receive special funding.
- The **selection shall be made through challenge method mode by the Empowered Expert Committee constituted for the purpose**.
- **Eligibility:** Only higher education institutions currently placed in the top 500 of global rankings or top 50 of the National Institutional Ranking Framework (NIRF) are eligible to apply for the eminence tag.
- The private Institutions of Eminence can also come up as greenfield ventures-provided the sponsoring organisation submits a convincing perspective plan for 15 years.

Implications :

- Institutions with the eminence tag would be allowed greater autonomy without having to report to the University Grants Commission (UGC); they would be able to admit foreign students and recruit faculty from abroad, and follow a flexible course and fee structure to enable them to vault to the ranks of the top global institutions.

Need for world-class institutes:

- India lacks world-class universities according to international rankings, and Indian academics, compared internationally, are rather poorly paid. Students also suffer an immense shortage of places in top academic institutions and throughout the higher education system. India today educates only half as many young people from the university age group as China and ranks well behind most Latin American and other middle-income countries.

Sources: the Hindu.

15. INTERNATIONAL CLASSIFICATION OF DISEASES (ICD)

What to study?

- For prelims and mains: ICD- features, need and significance, overview of ICD- 11.

Context: The World Health Organization has for the first time recognised “**burn-out**” in its **International Classification of Diseases (ICD)**, which is widely used as a benchmark for diagnosis and health insurers.

Significance:

- The decision could help put to rest decades of debate among experts over how to define burnout, and whether it should be considered a medical condition.

Background:

- The updated ICD list, dubbed ICD-11, was drafted last year following recommendations from health experts around the world. The ICD-11, which is to take effect in January 2022, contains several other additions, including classification of “compulsive sexual behaviour” as a mental disorder, although it stops short of lumping the condition together with addictive behaviours.

What is burn- out?

- In the latest update of its catalogue of diseases and injuries around the world, WHO defines burn-out as “**a syndrome conceptualised as resulting from chronic workplace stress that has not been successfully managed**.”
- **The syndrome is characterised by three dimensions:** “1) feelings of energy depletion or exhaustion; 2) increased mental distance from one’s job, or feelings of negativism or cynicism related to one’s job; and 3) reduced professional efficacy.”

What is ICD?

- The ICD is the global health information standard for mortality and morbidity statistics. The first international classification edition, known as the International List of Causes of Death, was adopted by the International Statistical Institute in 1893. WHO was entrusted with the ICD at its creation in 1948. The ICD is revised periodically and is currently in its 10th revision.
- ICD is increasingly used in clinical care and research to define diseases and study disease patterns, as well as manage health care, monitor outcomes and allocate resources. ICD has been translated into 43 languages.
- More than 100 countries use the system to report mortality data, a primary indicator of health status. This system helps to monitor death and disease rates worldwide and measure progress towards the Millennium Development Goals.

- About 70% of the world's health expenditures (USD \$ 3.5 billion) are allocated using ICD for reimbursement and resource allocation.

Highlights of ICD- 11:

- ICD-11 identifies health trends and statistics worldwide, and contains around 55,000 unique codes for injuries, diseases and causes of death.
- ICD-11, which has been over a decade in the making, provides significant improvements on previous versions.
- Also for the first time, it is completely electronic and has a much more user-friendly format. And there has been unprecedented involvement of health care workers who have joined collaborative meetings and submitted proposals.
- The new ICD-11 also reflects progress in medicine and advances in scientific understanding. For example, the codes relating to antimicrobial resistance are more closely in line with the **Global Antimicrobial Resistance Surveillance System (GLASS)**.
- ICD-11 is also able to better capture data regarding safety in health care, which means that unnecessary events that may harm health – such as unsafe workflows in hospitals can be identified and reduced.
- The new ICD also includes new chapters- one on traditional medicine and another new chapter on sexual health.
- Gaming disorder has been added to the section on addictive disorders.

ICD purpose and uses:

- The ICD is the foundation for the identification of health trends and statistics globally. It is the international standard for defining and reporting diseases and health conditions. It allows the world to compare and share health information using a common language.
- The ICD defines the universe of diseases, disorders, injuries and other related health conditions. These entities are listed in a comprehensive way so that everything is covered. It organizes information into standard groupings of diseases, which allows for:
- Easy storage, retrieval and analysis of health information for evidenced-based decision-making;
- Sharing and comparing health information between hospitals, regions, settings and countries; and
- Data comparisons in the same location across different time periods.

Sources: the Hindu.

Topics: Salient features of the Representation of People's Act.

1. ARTICLE 324

What to study?

- For prelims: A 324 and features.
- For mains: Issues surrounding the credibility of EC.

Context: The **Election Commission** of India has passed an unprecedented order ending the campaign in West Bengal. It also removed the state's Home Secretary, and a senior police officer.

- The decisions were taken under **Article 324** of the Constitution, in response to street violence in Kolkata between cadres of two political parties.

Historical background:

- Ambedkar introduced the Article 324 on June 15, 1949, saying the whole election machinery should be in the hands of a Central EC, which alone would be entitled to issue directives to returning officers, polling officers and others.

Need for and significance of A 324:

- **Mohinder Singh Gill vs The CEC, New Delhi and Others (1977):** The Court held that Article 324 "operates in areas left unoccupied by legislation and the words

What Article 324 and RPA say on this?

- **Article 324** vests "in an Election Commission" the "superintendence, direction and control of elections".
- Parliament enacted **The RP Act of 1950 and 1951** to define and enlarge the powers of the Commission.
- **The RP Amendment Act, 1988 (Act 1 of 1989)** introduced **Section 28A** in the RP Act of 1951, which said that all officers deployed for the conduct of an election shall be deemed to be on deputation to the EC. This should be from the notification of the election to the declaration of the results, and such officers shall, during that period, be subject to the control, superintendence and discipline of the EC.

'superintendence, direction and control' as well as 'conduct of all elections' are the broadest terms". The Constitution has not defined these terms.

- Article 324 is a **plenary provision** vesting the whole responsibility for national and State elections in the ECI and therefore, the necessary powers to discharge that function.
- Comprehensive provision in Art. 324 is necessary to **take care of surprise situations**.

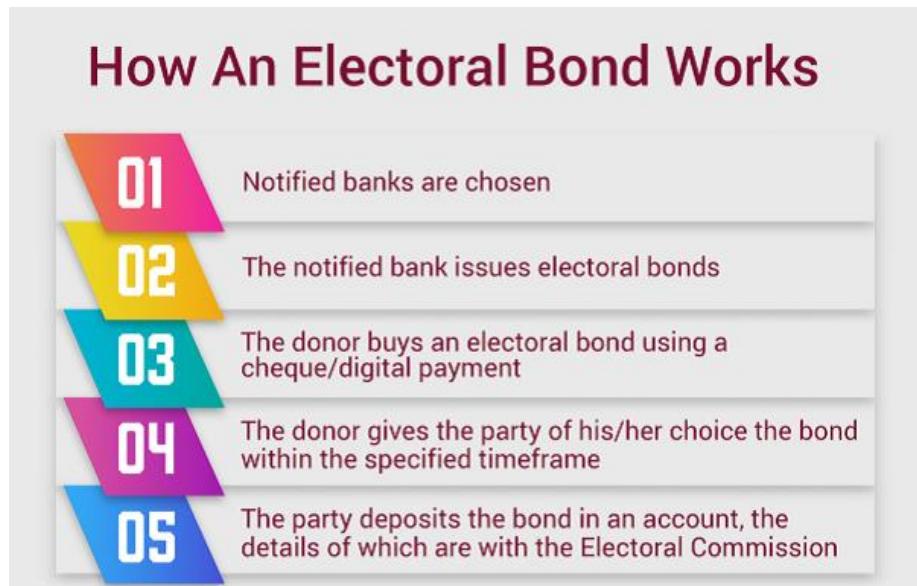
2. ELECTORAL BOND SCHEME

What to study?

- For Prelims: Key features of Electoral Bonds and highlights of the scheme.
- For Mains: Significance of the scheme, benefits and concerns associated.

Context: The government has curtailed the time period for sale of electoral bonds by the SBI in the current month to only 5 days from May 6, instead of 10 days as was announced earlier.

- State Bank of India (SBI) has been authorized to issue and encash Electoral Bonds** through its 29 Authorized Branches (as per list enclosed) in the month of May 2019.



About Electoral bonds:

- What are electoral bonds?** Electoral bonds will allow donors to pay political parties using banks as an intermediary.
- Key features:** Although called a bond, the banking instrument resembling promissory notes will not carry any interest. The electoral bond, which will be a bearer instrument, will not carry the name of the payee and can be bought for any value, in multiples of Rs 1,000, Rs 10,000, Rs 1 lakh, Rs 10 lakh or Rs 1 crore.
- Eligibility:** As per provisions of the Scheme, electoral bonds may be purchased by a citizen of India, or entities incorporated or established in India. A person being an individual can buy electoral bonds, either singly or jointly with other individuals. Only the registered Political Parties which have secured not less than one per cent of the votes polled in the last Lok Sabha elections or the State Legislative Assembly are eligible to receive the Electoral Bonds.
- Need:** The electoral bonds are aimed at rooting out the current system of largely anonymous cash donations made to political parties which lead to the generation of black money in the economy.

How will the Bonds help?

- The previous system of cash donations from anonymous sources is wholly non-transparent. The donor, the donee, the quantum of donations and the nature of expenditure are all undisclosed.
- According to government the system of Bonds will encourage political donations of clean money from individuals, companies, HUF, religious groups, charities, etc. After purchasing the bonds, these entities can hand them to political parties of their choice, which must redeem them within the prescribed time.
- Some element of transparency would be introduced in as much as all donors declare in their accounts the amount of bonds that they have purchased and all parties declare the quantum of bonds that they have received.

3. DISSENT IN THE ELECTION COMMISSION – WHAT THE RULES SAY

What to study?

- For prelims: constitutional provisions related.

- For mains: need for Election Commission reforms.

Context: Election Commissioner Ashok Lavasa has dissented with the opinion of his colleagues in the Election Commission in five different matters pertaining to alleged violations of the Model Code of Conduct.

What happens in case of dissent?

- **Section 10 (Disposal of business by Election Commission)** of The Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991, lays down that “all business of the Election Commission shall, as far as possible, be transacted unanimously”.
- Dissent is, however, provided for in the Act itself, which says: “**If the Chief Election Commissioner (CEC) and other Election Commissioners (ECs) differ in opinion on any matter, such matter shall be decided according to the opinion of the majority**”.

Background:

- The CEC and ECs are **appointed by the President to a tenure of six years, or up to the age of 65 years, whichever is earlier**.
- They enjoy **the same status and receive salary and perks as judges of the Supreme Court of India**.
- The Election Commission of India draws its authority from the Constitution itself. **Under Article 324**, the powers of “superintendence, direction and control of elections” is to be vested in an Election Commission.

Has the EC always been a multi- member body?

- The Constitution does not fix the size of the Election Commission. Article 324(2) says that “the Election Commission shall consist of the Chief Election Commissioner and such number of other Election Commissioners, if any, as **the President may from time to time fix**”.
- From the beginning, the Election Commission of India consisted of just the Chief Election Commissioner.
- However, on October 16, 1989, the Congress government of Prime Minister Rajiv Gandhi appointed two more Election Commissioners, making the Election Commission a multi-member body.
- On January 2, 1990, the National Front government of Prime Minister VP Singh amended the rules, making the Election Commission a single-member body again.
- However, on October 1, 1993, the government of Prime Minister PV Narasimha Rao promulgated an Ordinance to provide for the appointment of two more Election Commissioners.
- The Election Commission has had three members ever since. The Ordinance was subsequently replaced by **The Chief Election Commissioner and Other Election Commissioners (Conditions of Service) Amendment Act, 1993**, which came into effect on January 4, 1994.

Sources: the Hindu.

4. 10TH SCHEDULE OF THE CONSTITUTION

What to study?

- For Prelims: Features of 10th schedule of the constitution, dismissal, exceptions and judicial review of the decision.
- For Mains: Significance of anti- defection law, concerns associated with its misuse and measures to improve its transparency.

Context: The Supreme Court has stayed proceedings initiated by Tamil Nadu Assembly Speaker P. Dhanapal for the disqualification of three AIADMK MLAs for “anti-party activities”.

- The court has held that **it would be constitutionally impermissible for the Speaker to adjudicate a dispute of disqualification petition under the Tenth Schedule of the Constitution while a notice of resolution for his own removal from the office of Speaker is pending**.

What's the issue?

- The MLAs had approached the Supreme Court urging it to restrain the Speaker from acting on a disqualification notice for anti-party activities, in view of their support for T.T.V. Dhinakaran.
- They claimed the Speaker acted in a “partisan and biased manner, contrary to the high position”. Besides, a motion for his removal moved by the DMK on April 30 was pending.

- The petitioners contended that the action by the Speaker was taken in an arbitrary manner without jurisdiction and actuated with malice. They also contended that with a no-confidence motion pending against the Speaker, he could not adjudicate in a matter of disqualification.

Disqualification:

If a member of a house belonging to a political party:

- Voluntarily gives up the membership of his political party, or
- Votes, or does not vote in the legislature, contrary to the directions of his political party. However, if the member has taken prior permission, or is condoned by the party within 15 days from such voting or abstention, the member shall not be disqualified.
- If an independent candidate joins a political party after the election.
- If a nominated member joins a party six months after he becomes a member of the legislature.

Exceptions under the law:

- Legislators may change their party without the risk of disqualification in certain circumstances. The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger. In such a scenario, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.

Decision of the Presiding Officer is subject to judicial review:

- The law initially stated that the decision of the Presiding Officer is not subject to judicial review. This condition was struck down by the Supreme Court in 1992, thereby allowing appeals against the Presiding Officer's decision in the High Court and Supreme Court. However, it held that there may not be any judicial intervention until the Presiding Officer gives his order.

Sources: the hindu.

5. ELECTION COMMISSION OBSERVERS

What to study?

- For Prelims and Mains: EC observers- appointment, roles and functions.**

Context: The Supreme Court has sought responses from the Election Commission, the West Bengal government and others on a plea challenging the appointment of two retired bureaucrats as special observer and Central police observer in the State for the ongoing Lok Sabha election.

Who are EC observers?

- The observers are drawn from various central services, such as the Indian Revenue Service, the Indian Administrative Service, and the Indian Police Service. They are considered to be on EC duty till the elections process ends.

Appointment:

- Observers of the Election Commission of India (ECI) are appointed under the powers conferred on it by Section 20B of the Representation of the People Act, 1951 and the plenary powers available to the Commission under the Constitution of India.**
- They are the appointees of the Commission working under the superintendence, control and discipline of the Commission for the period from their appointment until the process of election is completed.**
- The Representation of the People Act, 1951 was amended in August 1996 to add a new Section 20B. This provides statutory powers to the Observers to watch the conduct of elections and especially in respect of counting of votes.**

What is the anti-defection law?

- The **Tenth Schedule** was inserted in the Constitution in 1985 by the **52nd Amendment Act**. It lays down the process by which legislators may be disqualified on grounds of defection by the Presiding Officer of a legislature based on a petition by any other member of the House.
- The decision on question as to disqualification on ground of defection is referred to the Chairman or the Speaker of such House, and his decision is final.**
- The law applies to both Parliament and state assemblies.

Roles and duties:

- The General and Police Observers are expected to assist the Commission in the conduct of free and fair polls.
- They also oversee the efficient and effective management of the electoral process at the field level.
- For all purposes, they act as the eyes and ears of the Commission during the period of the election and provide direct inputs to the Commission from the field as an interface with the election machinery the candidates, political parties, and electors to ensure that the Acts, rules, procedures, instructions and guidelines related to elections are strictly and impartially complied with by all concerned.

Sources: the hindu.

6. VOTER-VERIFIED PAPER AUDIT TRAIL (VVPAT)

What to study?

- For prelims: VVPAT.
- For mains: EVM tampering related concerns, significance of VVPATs and observations of SC.

Context: SC has dismissed Opposition plea to review order on VVPAT counting.

What's the issue?

- 21 Opposition parties had sought a review of Supreme Court verdict that increased counting of VVPAT slips to five random EVMs in each Assembly constituency. The Opposition wanted to increase the number to at least 25%. Petitioners pointed to large-scale tampering and selective malfunctioning of EVMs in the present Lok Sabha polls.

Background:

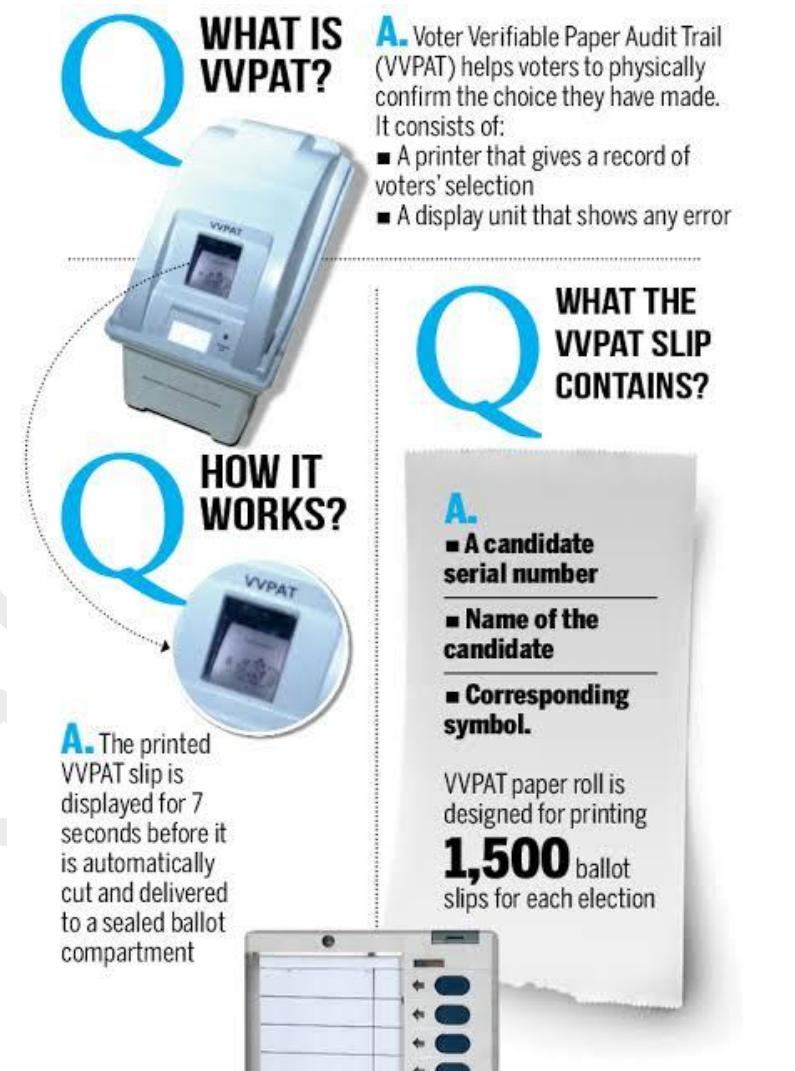
- Earlier, under the ECI guideline 16.6, only the VVPAT slips from one EVM in every Assembly segment/constituency was subjected to physical verification.

SC's observations:

- VVPAT verification of five EVMs, rather than in 125 polling booths, was far more "viable at this point of time" in the Lok Sabha poll season. Verification of five EVMs would not be a drain on the ECI's infrastructural resources and manpower.

What is VVPAT?

- The Voter Verifiable Paper Audit Trail (VVPAT) is a method of providing **feedback to voters using a ballot less voting system**.
- The VVPAT is an **independent printer system attached with Electronic Voting Machine (EVM)** that allows the voters to verify that their votes are cast as intended. It generates a paper slip every time a voter casts his vote, recording the party to whom the vote was made. The VVPAT slip is kept in a sealed cover.
- VVPAT slip counting takes place in the VVPAT counting booths under the close monitoring of the returning officer and direct oversight of the observer.



How does the VVPAT work?

- The voting in India is done using the Electronic Voting Machine (EVM) that is designed with **two units: the control unit and the balloting unit**.
- The balloting unit of the machine has a list of candidate names and party symbols with a blue button next to it. The voter can press the button next to the candidate's name they wish to vote for.
- When the voter casts the vote on the EVM, printer-like VVPAT apparatus linked to the EVM generates a slip showing serial number, name and symbol of the candidate to whom the vote was made.
- With this slip, the voter can verify his casted vote.
- This VVPAT slip is displayed for 7 seconds before it's automatically cut.
- The slip, once viewed, is cut and dropped into the drop box in the VVPAT machine and a beep will be heard.
- The VVPAT machines can only be accessed by the election officers in the rarest of rare cases.

Significance and the need for VVPATs:

- The VVPAT helps to detect potential election fraud or malfunction in the Electronic Voting Machine. It provides a means to audit the stored electronic results. It serves as an additional barrier to change or destroy votes.
- The EVMs with VVPAT system ensure the accuracy of the voting system with fullest transparency and restores the confidence of the voters.
- EVMs and VVPATs also speed up the election process as counting votes on EVMs takes much lesser time than counting paper ballots.

Sources: The Hindu.

7. EXIT POLLS IN INDIA

What to study?

- For prelims: Exit polls- meaning and provisions governing them.
- For mains: significance, need, concerns associated and need for regulation.

What is it?

- An election exit poll is a poll of voters taken soon after a voter walks out after casting his or her vote. It is considered as an indicator to which party forms the government.
- Unlike an opinion poll, which asks for whom the voter plans to vote, an exit poll asks for whom the voter actually voted.

How are they regulated?

- In February 2010, restrictions were imposed on exit polls through the introduction of **Section 126(A) in the Act**. The EC advises electronic and print media not to publish or publicise any article or programme related to the dissemination of results of exit polls during **the prohibited period**.

What does ECI advisory say about rules for predicting results?

- The ECI is of the view that prediction of results of elections in any form or manner by way of predictions etc by astrologers, political analysts or by any persons during the prohibited period is violation of the spirit of **Section 126A** (of the RP Act).
- It aims to prevent the electors of constituencies still going to polls from being influenced in their voting by such predictions about the prospects of the various political parties.

Why is the Election Commission (EC) opposed to media coverage of opinion polls and exit polls during a multi-phase election?

- Both kinds of polls can be controversial if the agency conducting them is perceived to be biased. Critics say the projections of these surveys can be influenced by the choice, wording and timing of the questions, and by the nature of the sample drawn. Political parties often allege that many opinion and exit polls are motivated and sponsored by their rivals, and could have a distorting effect on the choices voters make in a protracted election, rather than simply reflecting public sentiment or views.

Why are exit polls criticised?

- Critics and political parties say the agencies that conduct the exit polls could be biased in terms of the choice, words, timing of the questions, the methodology they use, and kind of sample they draw.
- The sample group's demographic behaviour, its economic status and various other factors used in tabulating the survey are also questioned.
- Political parties also allege that exit polls are funded by their rivals and may not reflect the sentiment or views of the people accurately.

Sources: the Hindu.

8. NONE OF THE ABOVE (NOTA) VOTES

What to study?

- For Prelims: Meaning of NOTA and features of RPA.
- For Mains: Significance and the use of NOTA in direct elections, concerns of its use in indirect elections.

Context: Election Commission has released a report on NOTA votes cast in recent elections.

Key findings:

- **Bihar registered the maximum None of The Above (NOTA) votes** of about 8 lakh, with the highest share of 5.04% reported from the Gopalganj constituency.
- The high NOTA percentage was an indicator that people were frustrated with the state of affairs in their constituency, did not find any of the candidates worthy enough and therefore, even after reaching the polling station, decided to press the NOTA button.
- In Andhra Pradesh, the fourth highest NOTA figure of 4.46%, involving 47,977 voters, was recorded in Araku and in only five constituencies of the State, was it below 1%.
- Gujarat, where the highest of 3% was seen in Dahod, had only eight constituencies where the NOTA share was below 1%; while in Haryana, nine of the 10 seats registered less than 1% voters rejecting all candidates.
- In as many as 23 constituencies of Karnataka, NOTA vote share was again less than 1% and the highest of 1.39% was in Uttara Kannada in the State. In Kerala and Delhi, all the constituencies had below 1% NOTA share.

The use of NOTA in elections:

- The option of NOTA for Lok Sabha and assembly elections was prescribed by the SC in 2013. The option of NOTA in RS polls was introduced by the EC in 2014. Thus, India became the 14th country to institute negative voting.

How is a NOTA vote cast?

- The EVMs have the NOTA option at the end of the candidates' list. Earlier, in order to cast a negative ballot, a voter had to inform the presiding officer at the polling booth. A NOTA vote doesn't require the involvement of the presiding officer.

Why have NOTA if there's 'no electoral value'?

- NOTA gives people dissatisfied with contesting candidates an opportunity to express their disapproval. This, in turn, increases the chances of more people turning up to cast their votes, even if they do not support any candidate, and decreases the count of bogus votes. Also, the Supreme Court has observed that negative voting could bring about "a systemic change in polls and political parties will be forced to project clean candidates".

Why NOTA is good?

- NOTA option will force the political parties to select the honest candidates, i.e with no criminal records.
- NOTA ensures people's 'right to freedom of speech and expression'.
- This will increase the polling percentage.

Sources: the Hindu.

Topics: Development processes and the development industry the role of NGOs, SHGs, various groups and associations, donors, charities, institutional and other stakeholders.

1. NATIONAL INSTITUTE OF NUTRITION (NIN)

What to study?

- For Prelims: About Midday meals scheme and Akshaya Patra foundation.
- For Mains: Features, need and significance of the scheme, performance analysis of the scheme.

Context: The National Institute of Nutrition (NIN) has said that it stands by its findings certifying mid-day meals without onion and garlic provided by the Akshaya Patra Foundation (APF) in Karnataka schools as compliant with nutritional norms laid down by the State government.

About Akshaya Patra:

- Funded by **International Society for Krishna Consciousness (ISKCON)**, Akshaya Patra is a Bengaluru-based **not-for-profit organisation** that works with the government on mid-day meal schemes. It has a state-of-the-art kitchen in Vrindavan.
- Today, **Akshaya Patra is the world's largest (not-for-profit run) Mid-Day Meal Programme** serving wholesome food every school day to over 1.76 million children from 14,702 schools across 12 states in India.

What's the issue?

- In January, 2019, the Karnataka government had asked NIN to assess APF meals for nutritional compliance, food safety, taste and diversity of meals following objections by the Karnataka State Food Commission as well as activists that **absence of onion and garlic from meals made the food unpalatable and resulted in children consuming less quantity of food.**

Mandate of NIN:

- Periodic Assessment of Nutrient intakes, Health and Nutrition status of the population for optimal health, and assist the Government and regulatory bodies in policy making
- Establishment of Dietary Reference Intake values, Recommended Dietary allowances, Dietary guidelines for Indian population; and assessment of Nutrient Composition of Foods
- Identify various nutrition deficiency disorders prevalent among different segments of the population
- Conduct operational research for planning and implementation of National Nutrition Programmes in the country
- Conduct surveys and study the risk factors of NCDs through multidisciplinary research
- Conduct innovative basic science Research on nutrient interactions, requirements, responses etc
- Identify and study food and environmental safety challenges for providing scientific input for policy and regulation
- Development of human resource in nutrition and also provide evidence-based nutrition knowledge to the community

Sources: The Hindu.

About National Institute of Nutrition (NIN):

- It is an Indian Public health, Nutrition and Translational research center located in Hyderabad.
- The institute is one of the oldest research centers in India, and the largest center, under the **Indian Council of Medical Research**.
- It was founded by Sir Robert McCarrison in the year 1918 as 'Beri-Beri' Enquiry Unit in a single room laboratory at the Pasteur Institute, Coonoor, Tamil Nadu.
- Within a short span of seven years, this unit blossomed into a "Deficiency Disease Enquiry" and later in 1928, emerged as full-fledged "Nutrition Research Laboratories" (NRL) with Dr. McCarrison as its first Director.
- It was later shifted to Hyderabad in 1958. In 1969, it was renamed as National Institute of Nutrition (NIN).

2. INDIA INTERNATIONAL INSTITUTE OF DEMOCRACY AND ELECTION MANAGEMENT (IIIDEM)

- IIIDEM is an advanced resource centre of learning, research, training and extension for participatory democracy and election management.

- The Institute has been developed in collaboration with the Government of India, United Nations, the Commonwealth and inter-governmental organisations like Sweden based International Institute of Democracy and Electoral Assistance (IDEA).

Roles and functions:

- The Institute will be a national and international hub for exchange of good practices in election management.
- It works for enhancing voter education, and developing human resource for efficient conduct of free and fair elections in India. Along with this it is also set to develop mutually beneficial partnership with other countries.

3. NGOS AND REGULATION OF THEIR FOREIGN FUNDING

What to study?

- For Prelims: FCRA guidelines on foreign funding to NGOs, eligibility.
- For Mains: Misuse of foreign funds, issues and the need for stringent measures to prevent the misuse of foreign funds.

Context: The Home Ministry has cancelled the FCRA licence of Infosys Foundation after a request was made by the not-for-profit initiative of the IT major.

Regulation of Foreign Funding:

- The **Foreign Contribution (Regulation) Act, 2010** and rules framed under it (the “FCRA” or “Act”) regulate the receipt and usage of foreign contribution by non-governmental organisations (“NGOs”) in India.

Scope and objective of FCRA:

- The intent of the Act is to prevent use of foreign contribution or foreign hospitality for any activity detrimental to the national interest. It has a very wide scope and is applicable to a natural person, body corporate, all other types of Indian entities (whether incorporated or not) as well as NRIs and overseas branches/subsidiaries of Indian companies and other entities formed or registered in India. It is **implemented by the Ministry of Home Affairs**, Government of India.

In order to achieve the above objective, the Act:

- Prohibits acceptance and use of foreign contribution or foreign hospitality by a certain specified category of persons such as a candidate for election, judge, journalist, columnist, newspaper publication, cartoonist and others.
- Regulates the inflow to and usage of foreign contribution by NGOs by prescribing a mechanism to accept, use and report usage of the same.

Definition:

- It defines the term ‘foreign contribution’ to include currency, article other than gift for personal use and securities received from foreign source. While foreign hospitality refers to any offer from a foreign source to provide foreign travel, boarding, lodging, transportation or medical treatment cost.

Acceptance of foreign funds:

- The Act permits only NGOs having a definite cultural, economic, educational, religious or social programme to accept foreign contribution, that too after such NGOs either obtain a certificate of registration or prior permission under the Act.

Registration and prior approval under FCRA:

- In order to be registered under the FCRA, an NGO must be in existence for at least three years and must have undertaken reasonable activity in its field for which the foreign contribution is proposed to be utilised. Further, it must have spent at least INR 1,000,000 over three years preceding the date of its application on its activities.
- The registration certificate is valid for a period of five years and must be thereafter renewed in the prescribed manner.

- NGOs not eligible for registration can seek prior approval from FCRA for receiving foreign funding. This permission is granted only for a specific amount of foreign funding from a specified foreign source for a specific purpose. It remains valid till receipt and full utilisation of such amount.

The Act imposes various conditions on the use of foreign funds and some of them are as follows:

- All funds received by a NGO must be used only for the purpose for which they were received.
- Such funds must not be used in speculative activities identified under the Act.
- Except with the prior approval of the Authority, such funds must not be given or transferred to any entity not registered under the Act or having prior approval under the Act.
- Every asset purchased with such fund must be in the name of the NGO and not its office bearers or members.

Reporting requirement:

- Every NGO registered or having prior approval under the Act must file an annual report with the Authority in the prescribed form. This report must be accompanied by an income and expenditure statement, receipt and payment account, and balance sheet for the relevant financial year. For financial years where no foreign contribution is received, a 'NIL' report must be furnished with the Authority.

Sources: The Hindu.

4. MOHALLA CLINICS

What to study?

- For prelims and mains: mohalla clinics- success, model and potential.

Context: Delhi's Mohalla clinic initiative is set to be extended to several states, with Telangana, Karnataka, Jharkhand and J&K expressing interest in adopting the flagship project.

About Mohalla clinics:

- Started in 2015, they are **primary health centres in New Delhi**, that offer a basic package of essential health services including medicines, diagnostics, and consultation free of cost.
- Mohalla in Hindi means **neighborhood or community**.
- These clinics serve as **the first point of contact for the population**, offer timely services, and reduce the load of referrals to secondary and tertiary health facilities in the state.
- Every such clinic has a doctor, a technician for uploading patients' Aadhaar card details and a lab assistant for collecting blood samples and disbursing medicines.
- The clinics run from 8 am to 2 pm and doctors are paid on the basis of the number of patients they treat — each doctor gets Rs 30 per patient per day.
- Each clinic is ideally supposed to cater to a 5-km radius with a population of 10,000-15,000.

Sources: The Hindu.

Topics: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

1. CHINA'S VIGOROUS QUEST FOR FOREIGN MILITARY BASES

- **Context:** Countries worldwide are concerned over China's vigorous quest for foreign military bases, including in Pakistan.

Rationale behind China quest:

- As the world's second-largest economy (aggregate GDP of \$13 trillion) and the second-largest annual defence budget (\$250 billion), China has both the motivation and the means to acquire foreign military bases.
- China's transition follows the familiar dictum that flag follows trade.
- China's advancement of projects such as the 'One Belt, One Road' Initiative (OBOR) will probably drive military overseas basing through a perceived need to provide security for OBOR projects.
- China will seek to establish additional military bases in countries with which it has a longstanding friendly relationship and similar strategic interests.

India's response:

- That China and India compete for foreign military bases is not merely an extension of their very familiar rivalry but a definitive moment in their overall political evolution as modern states. India closely tracks the expansion of China's military footprint in the Subcontinent and beyond in the Indian Ocean.
- India's response so far has developed along three axes. One is to counter potential threats from China's military bases in its immediate neighbourhood. Second, to strengthen military partnerships with its friends and partners to balance China. The third is to emulate Beijing's quest for foreign military presence.

India's concerns:

- Pakistan has the precedent of hosting foreign military bases. Pakistan is undoubtedly China's closest political and military partner. While there is no formal "base", the integration of Pakistan into China's military strategy and operations has steadily advanced.
- The Pakistan army's determination to limit India's power means there is little political opposition to hosting Chinese bases and facilities.
- The depth of the anti-India alliance between the two "iron brothers" means Delhi can't prevent Beijing developing bases and strategic military facilities — that perform a number of functions ranging from hosting PLA Navy warships to China's satellite tracking.

How is India planning to counter china's presence?

- Unlike in the past, when India operated as a lone ranger in the Indian Ocean, Delhi is now making its armed forces interoperable with its friends and partners.
- After prolonged reluctance, India has signed agreements with the US and France for mutual peacetime use of military bases. It is a matter of time before it signs such agreements with other powers like Japan and Australia.
- Delhi is also seeking access to military facilities in a number of countries.

Need:

- India's growing and globalised economy is now close to \$3 trillion and Delhi's political ambition is to raise it to \$5 trillion in the next five years. Delhi's security imperatives are no longer limited to its borders and it needs to secure its widely dispersed interests with forward military presence in the Indo-Pacific.

2. BIMSTEC

What to study?

- For prelims and mains: BIMSTEC- members, objectives, significance and need for reforms.

Context: By inviting leaders from the **BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) countries, Kyrgyz Republic and Mauritius** at his swearing-in ceremony on May 30, Prime Minister Narendra Modi has made a carefully calibrated diplomatic move that signals a major outreach to India's neighbourhood from the Bay of Bengal to Central Asia, as well as the Indian diaspora across the world.

What is BIMSTEC?

- In an effort to integrate the region, the grouping was **formed in 1997**, originally with **Bangladesh, India, Sri Lanka and Thailand, and later included Myanmar, Nepal and Bhutan**. **BIMSTEC**, which now includes five countries from South Asia and two from ASEAN, is a bridge between South Asia and Southeast Asia. It includes all the major countries of South Asia, except Maldives, Afghanistan and Pakistan.

Why the region matters?

- The Bay of Bengal is the **largest bay in the world**. Over one-fifth (22%) of the world's population live in the seven countries around it, and they have a combined GDP close to \$2.7 trillion.
- Despite economic challenges, all the countries in the region have been able to sustain **average annual rates of economic growth between 3.4% and 7.5% from 2012 to 2016**.
- The Bay also has vast **untapped natural resources**. One-fourth of the world's traded goods cross the Bay every year.

India's stake:

- As the region's largest economy, India has a lot at stake. **BIMSTEC connects not only South and Southeast Asia, but also the ecologies of the Great Himalayas and the Bay of Bengal.** For India, it is a **natural platform to fulfil our key foreign policy priorities of 'Neighborhood First' and 'Act East'.**
- For New Delhi, one key reason for engagement is in the vast potential that is unlocked with **stronger connectivity**. Almost 300 million people, or roughly one-quarter of India's population, live in the four coastal states adjacent to the Bay of Bengal (Andhra Pradesh, Orissa, Tamil Nadu, and West Bengal). And, about 45 million people, who live in landlocked Northeastern states, will have the opportunity to connect via the Bay of Bengal to Bangladesh, Myanmar and Thailand, opening up possibilities in terms of development.
- From the **strategic perspective**, the Bay of Bengal, a funnel to the Malacca straits, has emerged a key theatre for an increasingly assertive China in maintaining its access route to the Indian Ocean.
- As **China mounts assertive activities in the Bay of Bengal region**, with increased submarine movement and ship visits in the Indian Ocean, it is in India's interest to consolidate its internal engagement among the BIMSTEC countries.

Sources: Indian Express.

Topics: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

1. GENERALIZED SYSTEM OF PREFERENCE (GSP)

What to study?

- For Prelims: Key features of GSP.
- For Mains: How US withdrawal affects India and how should India be prepared for this?

Why in news: The U.S. should not terminate the **GSP programme** with India after the expiry of the 60-day notice period, a group of 25 influential American lawmakers urged the U.S. Trade Representative, warning that **companies seeking to expand their exports to India could be hit**.

Benefits of GSP:

- Indian exporters benefit indirectly** – through the benefit that accrues to the importer by way of reduced tariff or duty free entry of eligible Indian products
- Reduction or removal of import duty on an Indian product makes it **more competitive** to the importer – other things (e.g. quality) being equal.
- This tariff preference **helps new exporters** to penetrate a market and established exporters to increase their market share and to improve upon the profit margins, in the donor country.
- US Concern regarding GSP Continuation to developing countries:**
- President Donald Trump's case on what he calls "**unequal tariffs**" from India rests on the trade relationship in favour of India: Indian exports to the U.S. in 2017-18 stood at \$47.9 billion, while imports were \$26.7 billion.
- Trump Administration has criticized India for a range of **unfair trading practices** – decision on data localisation for all companies operating in India, and the more recent tightening norms for FDI in e-commerce have aggravated the situation.
- Sanitary and phytosanitary (SPS) barriers in India limit U.S. agricultural exports.**

What is Generalised System of Preferences (GSP)?

- The Generalized System of Preferences (GSP) is a U.S. trade program designed to promote economic growth in the developing world by providing **preferential duty-free entry for up to 4,800 products from 129 designated beneficiary countries and territories**.
- GSP was instituted on January 1, 1976, by the Trade Act of 1974.**
- GSP has been given on **non-reciprocal basis** yet the US has linked it with market access and tariff reduction which is against the basic tenets of GSP.

What is the objective of GSP?

- The objective of GSP was to give development support to poor countries by promoting exports from them into the developed countries. GSP promotes sustainable development in beneficiary countries by helping these countries to increase and diversify their trade with the United States.

What is the impact of GSP withdrawal on India?

- India exports nearly 50 products of the 94 products on which GSP benefits are stopped. The GSP removal will leave a reasonable impact on India as the country enjoyed preferential tariff on exports worth of nearly \$ 5.6 billion under the GSP route out of the total exports of \$48 bn in 2017-18.
- Removal of GSP indicate a tough trade position by the US;** especially for countries like India who benefited much from the scheme. India is the 11th largest trade surplus country for the US and India enjoyed an annual trade surplus of \$ 21 bn in 2017-18.

Sources: The Hindu.

2. JOINT COMPREHENSIVE PLAN OF ACTION (JCPOA)

What to study?

- For prelims and Mains: Joint Comprehensive Plan of Action (JCPOA)- objectives, why US has withdrawn from this, implications and what needs to be done?

Context: Iran will reduce some of its commitments to the nuclear deal in response to the United States' decision to withdrew from the 2015 multilateral deal known as the **Joint Comprehensive Plan of Action (JCPOA).**

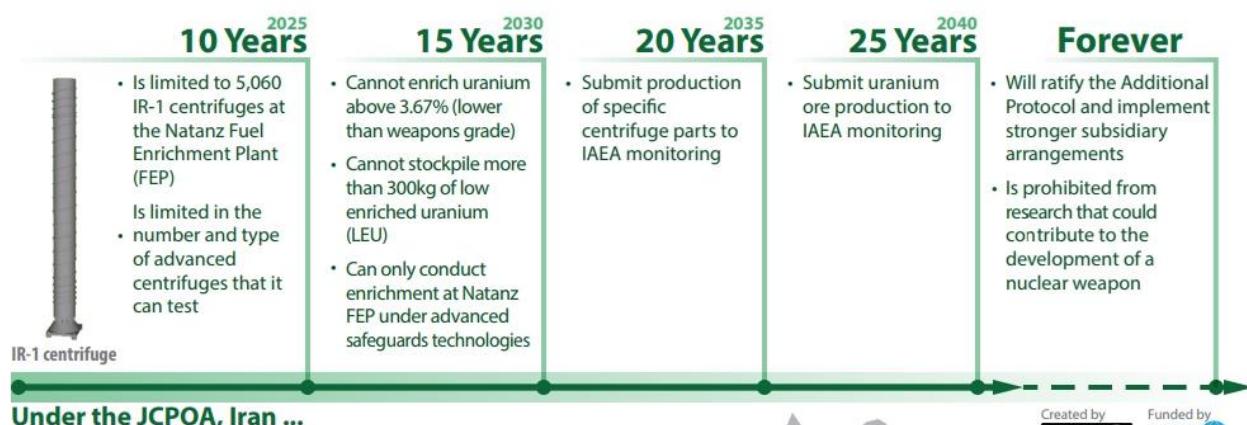
Why did Iran agree to the deal?

- It had been hit with devastating economic sanctions by the United Nations, United States and the European Union that are estimated to have cost it tens of billions of pounds a year in lost oil export revenues. Billions in overseas assets had also been frozen.

What is the Iran nuclear deal?

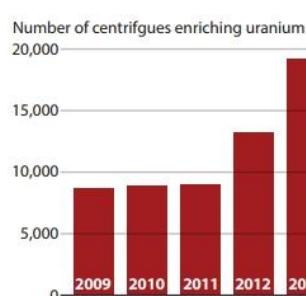
- Iran agreed to rein in its nuclear programme in a 2015 deal struck with the US, UK, Russia, China, France and Germany.
- Under the Joint Comprehensive Plan of Action (JCPOA) Tehran agreed to significantly cut its stores of centrifuges, enriched uranium and heavy-water, all key components for nuclear weapons.
- The JCPOA established the Joint Commission, with the negotiating parties all represented, to monitor implementation of the agreement.

The Iran Nuclear Deal: Blocking Iran's Path to the Bomb



With No JCPOA, Iran has the:

- Ability to build an unlimited number of centrifuges at an unlimited number of sites
- Ability to enrich uranium to any level and stockpile as much as it chooses
- Ability to develop and test more advanced centrifuges without restriction



Prior to the Joint Comprehensive Plan of Action, Iran had built a large uranium infrastructure that would have produced enough highly enriched uranium (HEU) to build a nuclear weapon in a matter of weeks. Iran was also building a heavy water reactor that would open a second route to the bomb.

Created by CNS
Funded by NTI
Nov 2017

Why has US pulled out of the deal?

- Trump and opponents to the deal say it is flawed because it gives Iran access to billions of dollars but does not address Iran's support for groups the U.S. considers terrorists, like Hamas and Hezbollah. They note it also doesn't curb Iran's development of ballistic missiles and that the deal phases out by 2030. They say Iran has lied about its nuclear program in the past.

What are the implications of US sanctions on Iran?

- Other countries have promised to uphold it but their ability to do so will depend on how their companies can be firewalled from U.S. sanctions if they continue their engagement with Iran.
- The sanctions often referred to as "secondary sanctions", which primarily target non-US companies engaging in business in or with Iran entirely outside US jurisdiction.

Other concerns:

- Iran can make things difficult for the U.S. in Afghanistan as also in Iraq and Syria.
- The U.S.'s ability to work with Russia in Syria or with China regarding North Korea will also be impacted.
- And sooner or later, questions may be asked in Iran about why it should continue with other restrictions and inspections that it accepted under the JCPOA, which would have far-reaching implications for the global nuclear architecture.
- Coming after the rejection of the Trans-Pacific Partnership (TPP), the Paris climate change accord and the North American Free Trade Agreement, President's decision further diminishes U.S. credibility.

Sources: The Hindu.

3. US SANCTIONS OVER IRAN AND ITS IMPLICATIONS

Context: Iran threatened to abandon limits on uranium enrichment unless Europe throws it an economic lifeline within 60 days, setting an ultimatum for the survival of a shaky 2015 accord meant to prevent the Islamic Republic from developing a nuclear bomb.

- The move is likely to inflame tensions with President Donald Trump's administration, which walked away from the landmark nuclear deal a year ago and imposed strict sanctions that squeezed Iran's economy, triggered a currency collapse and ushered in shortages of consumer goods.

What are the Iranian leaders talking about?

- Iran has set a deadline of 60 days for the world's major powers to re-negotiate a deal that they had struck with Iran in 2015. Iran has not renounced the agreement altogether, but has announced calibrated steps to roll back its compliance.
- The EU refers to the High Representative of the European Union for Foreign Affairs and Security Policy; E3 are the 'big three' European powers who led the negotiations with Iran — Germany, France, and the United Kingdom; and the '+2' are China and the Russian Federation.

What was JCPOA?

- JCPOA is the Joint Comprehensive Plan of Action, **an agreement that Iran and the P5+1** (the five permanent members of the United Nations Security Council — the United States, UK, France, Russia, and China — and Germany) reached on July 14, 2015.
- It is the official name for the **Iran nuclear deal or Iran deal**.

Key commitments under JCPOA:

- Under the JCPOA, Iran agreed to destroy its stock of **medium-enriched uranium**, cut its stock of **low-enriched uranium by 98%**, and reduce the **number of gas centrifuges by two-thirds for 13 years**.
- It agreed to **enrich uranium up to just 3.67% and to not build any new heavy-water facilities, for the next 15 years**.
- It agreed that **for 10 years, uranium enrichment would happen only at a single facility, using first-generation centrifuges**.
- **International Atomic Energy Agency (IAEA), the world's nuclear watchdog, would have access to all Iranian nuclear facilities**.

Benefits for Iran:

- In return for Iran verifiably abiding by these commitments, the US, EU, and United Nations Security Council **nuclear-related sanctions on it were lifted**. The Iran deal was endorsed by **UN Security Council Resolution 2231**, which was adopted on July 20, 2015, and major international corporates rushed to do business with Iran almost immediately.

Latest developments:

- On May 8 last year, President Donald Trump unilaterally pulled the **US out of the JCPOA**, dismantling one of the key foreign policy successes of his predecessor President Barack Obama, and reinstated the sanctions on Iran.

What exactly has Iran decided to do now?

- Iran has begun building up again stockpiles of low-enriched uranium and heavy water, which is used in nuclear reactors. **The IR-40 nuclear reactor** that Iran started building close to its Heavy Water Production Plant in Arak in 2004, and which could ultimately produce bomb-grade plutonium, was closed down under the deal with the West. But Iran has now said it would resume its construction unless the Europeans compensate it for the sanctions imposed unilaterally by the US.

What happens now?

- After President Trump pulled out of the Iran accord, most of the promised international business deals ended. The Iranian economy, which grew in 2016 and 2017, shrank in 2018 and 2019 (until April).
- In April, the US increased its provocation by ending exemptions from sanctions for five of Iran's main oil customers, including India, and designating Iran's elite Islamic Revolution Guard Corps, as a Foreign Terrorist Organisation.
- This week, US National Security Adviser John Bolton said an aircraft carrier was being deployed to the Middle East. Critics have been saying for some time that the Trump administration could be building up towards possible military conflict with Iran.

How are other countries responding?

- The European signatories of the JCPOA have been upset with the US for wrecking the deal that had taken difficult and painstaking negotiations to strike, and which was widely believed to have been working. This January, the E3 set up the **Instrument in Support of Trade Exchanges, or INSTEX**, a special purpose vehicle for trade with Iran bypassing sanctions. Iran's demand that they do more within a fixed deadline forces them to face difficult questions.

4. US 'GLOBAL HEALTH SECURITY STRATEGY'

What to study?

- For prelims and mains: Features, need And significance of the strategy.

Context: US comes up with strategy to Detect, Respond to Health security threats globally.

- Called the '**Global Health Security Strategy**', it is an effort which outlines coordinated US approach to help improve world's ability in stopping deadly outbreaks even before they spread between countries.

The strategy will pursue three interrelated goals:

- strengthened capacity in developing nations to implement obligations under the International Health Regulations (2005);
- increased international support for The Global Health Security Agenda (GHSA); and
- a Homeland prepared and resilient against global health threats.

Features and significance:

- It is a first of its kind strategy that seeks to detect, prevent, and respond to threats from various **infectious diseases occurring naturally or accidentally**.
- It defines the actions that **US administration will undertake by adopting a whole-of-government approach** to health security.

- **Priority areas:** The Strategy precisely identifies fighting biological threats and pandemics as central component of US's national security. It treats Biological threats, (like infectious disease outbreaks) as national security priority.
- United States will continue to **make investments in funding to select country partners** focused on the priority global-health security risks that will be milestone-driven and time-limited.

Need:

- The **increase in the number of infectious-diseases outbreaks** (e.g., Ebola, Zika, and yellow fever) around the world and the risk posed by an accidental or deliberate release of dangerous pathogens highlight the need for a sustained, multi-sectoral, and coordinated
- **Outbreaks can spread rapidly to jeopardize the health, security, and prosperity of all countries**, including the United States. With this new Strategy, the United States reaffirms its steadfast support for building global and country-level health-security capacities so we are all better protected against existing and emerging infectious disease threats.

Sources: The Hindu.

5. US-CHINA TARIFF WARS

What to study?

- For prelims and mains: US China tariff wars-causes, effects, implications on other countries and what is needed?

Context: US recently decided to hike tariffs to 25 per cent on \$200 billion worth of Chinese goods. This move could impact goods trade in more than 5,700 product categories and spark off another round of **tariff wars between the two largest economies of the world**.

Trade Impact:

- The biggest Chinese import sector impacted by the hike in tariffs is the \$20 billion-plus category of internet modems, routers and other data transmission devices, alongside printed circuit boards used in a number of US-made products.
- Furniture, lighting products, auto parts, vacuum cleaners and building materials are also faced with higher levies.
- The tariffs could hamper the rebound in the US economy, with consumption likely to take a hit as these tariffs would be paid by American consumers and businesses.

Impact on India:

- There could be a short-term **impact on the stock markets** over fears of the escalating trade war between the US and China.
- In the longer run, while a slowdown in the US economy does not augur well for emerging markets, **the trade war heralds a silver lining for some countries**. India is among a handful of countries that **stand to benefit from the trade tensions between the world's top two economies**, the UN has said in a report.

Benefits for other countries:

- Countries that are expected to benefit the most from the trade war are the EU members as **exports in the bloc are likely to grow by \$70 billion**. Japan and Canada will see exports increase by more than \$20 billion each. Other countries set to benefit from the trade tensions include Australia, with 4.6 per cent export gains, Brazil (3.8) India (3.5), Philippines (3.2) and Vietnam (5), the study said.

Origin of the US-China dispute:

- Trump slapped heavy tariffs on imported steel and aluminium items from China in March last year, and China responded by imposing tit-for-tat tariffs on billions of dollars worth of American imports.
- The dispute escalated after Washington demanded that China reduce its \$375 billion trade deficit with the US, and introduce "**verifiable measures**" for protection of Intellectual Property Rights, technology transfer, and more access to American goods in Chinese markets.

Why should the world be worried?

- In a report earlier this year, the IMF noted that the US-China trade tension was one factor that contributed to a “significantly weakened global expansion” late last year, as it cut its global growth forecast for 2019.
- Also, this exacerbates the uncertainty in the global trading environment, affects global sentiment negatively, and adds to risk aversion globally.
- The higher tariffs could lead to the repricing of risk assets globally, tighter financing conditions, and slower growth.
- The trade tensions could result in an increasingly fragmented global trading framework, weakening the rules-based system that has underpinned global growth, particularly in Asia, over the past several decades.

Sources: The Hindu.

6. GREEN CARDS

What to study?

- For prelims and mains: green cards- features, recent changes proposed and implications.

Context: U.S. President Donald Trump has announced a proposal that will include significant changes to the way green cards are allocated.

Key changes:

- The new proposal will increase skills-based green cards to 57%.
- Points will be awarded to applicants based on their education, work experience, age (more points for younger workers), English language ability etc.
- New immigrants will have to show that they can financially support themselves and will need to pass a civics exam.
- There would be a new “Build America” visa – details of which were not provided.
- People given Green Cards on humanitarian and diversity grounds will now only constitute 10% of all Green Card recipients.

Implications:

- The plan outlined dramatically reduces the **number of family-based green cards and moves towards a points-based (“merit-based”) system** that will reward, among other factors, education, skills and English language proficiency.
- It will **increase the number of green cards that are given through the skills route** versus the family-based route.

Rationale behind:

- The plan is sought to boost border security and tighten asylum procedures.
- Currently about 12% of those receiving green cards entered the U.S. based on skill-based visas (such as the H1B), while some 66% are family-based green cards.

How will it impact India?

- The proposals, if they eventually turn into law, are likely to have a significant impact on Indians who interact with the U.S. immigration system. A large majority (over 70%) of H1B visas, for skilled workers, went to Indians in fiscal year 2018. Many of these are eventually converted to green cards.
- Such a move is likely to benefit hundreds and thousands of Indian professionals on H-1B visa whose current Green Card wait, on an average, is more than a decade.
- However, it is far from clear that a shift towards a points-based system will make the prospects of Indian skilled migrants wanting to settle in the U.S. easier, as bringing family members over, especially elderly parents, may get more complicated.

Sources: The Hindu.

7. 'GOLDEN CARD' PERMANENT RESIDENCY SCHEME

What to study?

- For prelims and mains: features, need and significance of the Scheme.

Context: The United Arab Emirates (UAE) has launched 'Golden Card' Permanent Residency Scheme in an attempt to woo wealthy individuals and exceptional talents from all over the world.

The "Golden Card" visa includes categories:

- General investors who will be granted a 10 year permanent residency visas .
- Real Estate Investors, who can get a visa for 5 year visa.
- Entrepreneurs and Talented Professionals like doctors, researchers and innovators can get 10 years visa.
- 'Outstanding students'. These will also be permitted 5 years permanent residency visas.

Key features of the scheme:

- Eligibility:** It is open to investors and 'exceptional talents' like scientists, engineers, doctors, students and artists. As part of initiative, the first group of 6800 investors from more than 70 countries with investments of about 100 Billion Dirhams (USD 27 billion), were being given permanent residency.
- Significance:** The Golden Card is UAE's way to welcome all those seeking to be a part of the UAE's success story and making it a second home. It is introduced keeping in mind that Residents are an indispensable part of country and thus will be permanent partners in UAE's journey.
- Need:** Expatriates in the UAE are usually given limited duration residence permits under a sponsorship system.
- Benefits:** The Golden Card offers permanent residency and unprecedented benefits to cardholders as well as to their families while creating an attractive environment for growth and business. The benefits of PR also includes spouse and children of cardholder so as to ensure cohesive social ties.
- Potential:** This new initiative will attract greater foreign investment (FI) and activate local economy, making it more efficient and attractive for investors. It will also increase UAE's competitiveness on a global scale and will reaffirm country's position as a global incubator.

8. THE DISPUTE BETWEEN BRITAIN AND MAURITIUS OVER CHAGOS ISLANDS

What to study?

- For prelims: location of chagos islands, countries involved in the dispute.
- For mains: what is the controversy all about, recent ICJ observations and the need of hour.

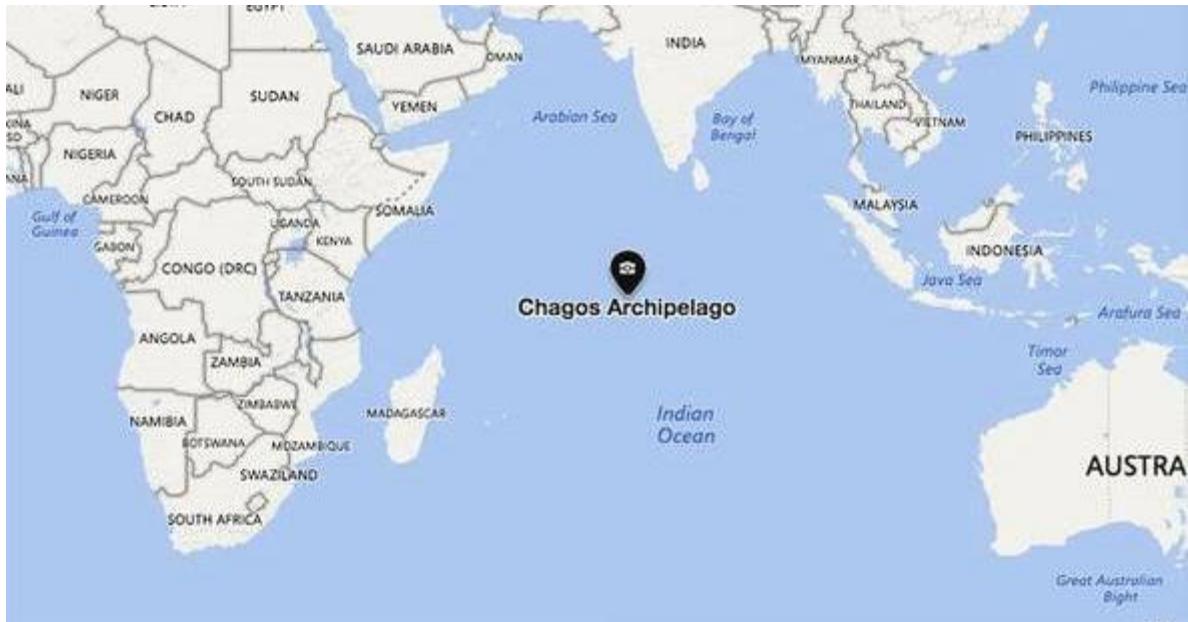
Why in News? The United Nation General Assembly (UNGA) has passed a non-binding resolution asking United Kingdom (UK) to return Chagos Archipelago in Indian Ocean to Mauritius.

What has the International Court of Justice said on this?

- The UK should end its control of the Chagos Islands in the Indian Ocean as rapidly as possible. The islands are not lawfully separated from the former colony of Mauritius.

What's the issue?

- Britain detached the Chagos Islands from Mauritius in 1965, three years before Mauritian independence. From 1967 to 1973, some 1,500 Chagos islanders were gradually forced to leave their homes so that the largest island, Diego Garcia, could be leased to the US for a strategic airbase. Today, Diego Garcia hosts a major US military base.
- In 2016, after several judicial challenges, Britain extended Diego Garcia's lease until 2036 and declared that the expelled islanders would not be allowed to go back. In 2017, Mauritius successfully petitioned the United Nations to seek an ICJ advisory opinion on the legality of the separation.
- Mauritius claims it was forced to give up the islands – now a British overseas territory – in 1965 in exchange for independence, which it gained in 1968.**



Arguments by Mauritius:

- Mauritius argues it was illegal for Britain to break up its territory. It claims sovereignty over the archipelago and demands the right to resettle former residents.
- The crux of the Mauritian claim is **the right of self-determination**. In its submission to the court, the Mauritian government claimed that the separation of the islands from Mauritius was in clear breach of UN resolution 1514, also known as the Colonial Declaration. Passed in 1960, it enshrined the right of self-determination for colonial peoples and specifically banned the breakup of colonies prior to independence. This was intended to keep borders stable, and to prevent colonial powers from simply absorbing colonial territory into their overseas territory so as to retain their sovereignty.
- Yet in spite of this resolution, a number of states (including France and the UK) kept possession of parts of their former colonies following the decolonisation process.

Sources: the Hindu.

9. UNITED STATES' CURRENCY MONITORING WATCHLIST

What to study?

- For prelims and mains: features, implications and issues associated with this list.

Context: The Donald Trump administration has removed India from its **currency monitoring watchlist**. In its semi-annual foreign-exchange report to the US Congress, the Treasury Department did not mention India's name in its watchlist of countries with potentially "questionable" foreign exchange policies and currency "manipulation".

Countries in the list:

- India, alongside China, Japan, Germany, Switzerland and South Korea, was placed in the bi-annual currency watch list in October last year.
- While India and Switzerland have not been mentioned in the latest list, the US has added Ireland, Italy, Malaysia, Singapore and Vietnam to the list, with China continuing to figure in it.

Implications:

- While the designation of a country as a currency manipulator does not immediately attract any penalties, it tends to dent the confidence about a country in the global financial markets.

The criterion:

- Countries with a current-account surplus equivalent to 2 per cent of gross-domestic product are eligible for the list, according to modifications made in the new list, down from 3 per cent earlier. Other thresholds include repeated intervention in the currency markets and a trade surplus with the US of at least \$20 billion.

Why is this significant?

- Tweaks in currency policy has been used by the Trump administration to browbeat countries that, from Washington's perspective, have hurt American businesses and consumers. For India, this comes amid the ongoing trade spat between Washington and New Delhi.
- Trump has repeatedly claimed that India is a "tariff king" and imposes "tremendously high" tariffs on American products, while also dismissing as "inadequate" the Indian government's decision to halve the import tariff on Harley-Davidson motorcycles from 100% to 50% last year, even as he has maintained that his administration is "fixing broken trade deals" to protect American workers.

Sources: Indian Express.

Topics: Important International institutions, agencies and fora, their structure, mandate.

1. ARCTIC COUNCIL

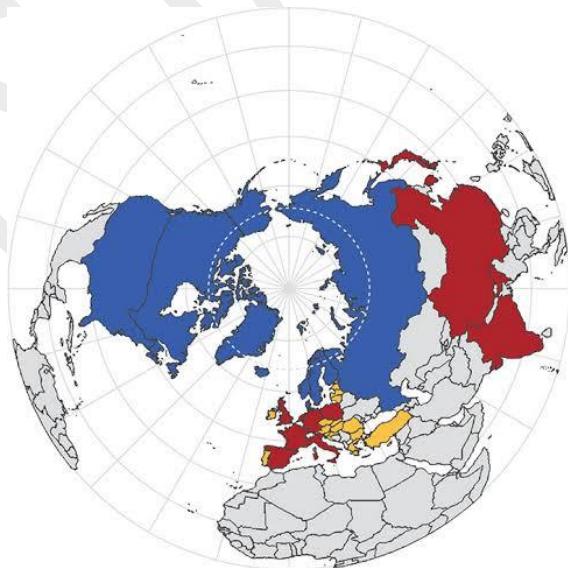
What to study?

- For prelims and mains: Composition of Arctic Council, membership, objective, subordinate bodies and significance.

Context: At 11th Arctic Council ministerial meeting held at Rovaniemi in Finland, India was re-elected as an observer to intergovernmental forum Arctic Council.

About Arctic council:

- 1996 – **Ottawa declaration.**
- It is an Intergovernmental forum which addresses issues faced by the Arctic governments and people living in the Arctic region
- It is **Not a treaty-based international organization** but rather an international forum that operates on the basis of **consensus**.
- The decisions, recommendations or guidelines of the Arctic Council are **non-enforceable** and strictly the prerogative of the individual state.
- Its mandate explicitly **excludes military security**.



Organization structure:

- Chairmanship: rotated every two years once
- Secretariat:
- Rotated biennially with the Chairmanship of the Arctic Council
- It supports the Chair of the Arctic Council
- It manages logistics related to the biennial member states' meetings and the more frequent SAO meetings.
- SAO (Senior Arctic Official): a government representative, usually from a member states' Ministry of Foreign Affairs. SAO guides and monitors Arctic Council activities in accordance with the decisions and instructions of the Arctic Council Foreign Ministers.

ARCTIC COUNCIL
MEMBERS AND
OBSERVERS

Member States

Permanent Observers

Ad Hoc Observers

Who takes part?

- The Ottawa Declaration lists the following countries as **Members of the Arctic Council**: Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States.
- In addition, six organizations representing Arctic indigenous peoples have status as **Permanent Participants**. The category of Permanent Participant was created to provide for active participation and full consultation with the Arctic indigenous peoples within the Council. They include: the Aleut International Association, the Arctic Athabaskan Council, Gwich'in Council International, the Inuit Circumpolar Council, Russian Association of Indigenous Peoples of the North and the Saami Council.

- **Observer status** in the Arctic Council is open to non-Arctic states, along with inter-governmental, inter-parliamentary, global, regional and non-governmental organizations that the Council determines can contribute to its work. Arctic Council Observers primarily contribute through their engagement in the Council at the level of Working Groups.

Arctic Council working groups:

- **Arctic Contaminants Action Program (ACAP)**— strengthening and supporting mechanism to encourage national actions to reduce emissions and other releases of pollutants.
- **Arctic Monitoring and Assessment Programme (AMAP)** — monitors the Arctic environment, ecosystems and human populations, and provides scientific advice to support governments as they tackle pollution and adverse effects of climate change.
- **Conservation of Arctic Flora and Fauna (CAFF)** — addresses the conservation of Arctic biodiversity, working to ensure the sustainability of the Arctic's living resources.
- **Emergency Prevention, Preparedness and Response (EPPR)**— protect the Arctic environment from the threat or impact of an accidental release of pollutants or radionuclides.
- **Protection of the Arctic Marine Environment (PAME)** — protection and sustainable use of the Arctic marine environment.
- **Sustainable Development Working Group (SDWG)** — works to advance sustainable development in the Arctic and to improve the conditions of Arctic communities as a whole

Sources: The Hindu.

2. BASEL CONVENTION

What to study?

- For prelims and mains: features, need for and significance of the convention.

Context: 14th Conference of the Parties to the Basel Convention (COP-14) is being held in **Geneva**, Switzerland.

Wastes covered by Basel Convention

<ul style="list-style-type: none"> ■ Toxicity ■ Corrosivity ■ Ignitability ■ Reactivity ■ Eco-toxicity 	     POISON: Pesticides, Chemicals, Rat poison, Bleach, Pharmaceuticals, Cleaning fluids EXPLOSIVE: Aerosols, Propane cylinders CORROSIVE: Batteries, Drain cleaners, Oven cleaners FLAMMABLE: Paints, Solvent Oils, Gasoline, BBQ starter
■ Currently addresses 27 specific categories of waste and 18 waste streams (Source :UNEP ,2005)	

8

Basel Convention — Control of Transboundary Movements of Hazardous Wastes and Their Disposal:

- opened for signature on 22 March 1989
- entered into force on 5 May 1992
- Parties — 187.
- Haiti and the United States have signed the Convention but not ratified.

- It is an international treaty that was designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs).
- It does not address the movement of radioactive waste.
- The Convention is also intended to minimize the amount and toxicity of wastes generated, to ensure their environmentally sound management and to assist LDCs in environmentally sound management of the hazardous and other wastes they generate.

Sources: down to earth.

3. WORLD CUSTOMS ORGANIZATION

What to study?

- For prelims: Key facts on WCO.
- For mains: Role of WCO in global market and emerging challenges.

Context: Central Board of Indirect Taxes and Customs (CBIC), under Ministry of Finance is organising a meeting of Regional Heads of Customs Administration of Asia Pacific Region of **World Customs Organisation (WCO)** in Kochi (in Kerela). India currently holds seat of Vice Chairperson of Asia Pacific region.

About WCO:

- established in 1952 as the **Customs Co-operation Council (CCC)**.
- It is an independent **intergovernmental body** whose mission is to enhance the effectiveness and efficiency of Customs administrations.
- As the global centre of Customs expertise, the WCO is **the only international organization with competence in Customs matters** and can rightly call itself the voice of the international Customs community.
- **Members:** The WCO has divided its Membership into six Regions. Each of the six Regions is represented by a regionally elected Vice-Chairperson to the WCO Council.

Roles and functions:

- As a **forum for dialogue** and exchange of experiences between national Customs delegates, the WCO offers its Members a range of Conventions and other international instruments, as well as technical assistance and training services.
- Besides the vital role played by the WCO in stimulating the growth of legitimate international trade, its efforts to combat fraudulent activities are also recognized internationally.
- WCO has also been responsible for administering the World Trade Organization's Agreements on Customs Valuation, which provide a system for placing values on imported goods, and the Rules of Origin, which are used to determine the origin of a given commodity.

Sources: The Hindu.

4. COMMONWEALTH TRIBUNAL

What to study?

- For prelims and mains: the tribunal, Composition and functions.

Context: Justice KS Radhakrishnan, a former Supreme Court judge, has been appointed as the Member of the Commonwealth Secretariat Arbitral Tribunal of London. He will serve a 4-year term from June 1, 2019 to May 31, 2023 as a Member of the Tribunal.

About Commonwealth Secretariat Arbitral Tribunal:

- The Commonwealth Secretariat Arbitral Tribunal **resolves disputes of the Commonwealth organisations, international or intergovernmental**.
- Based in London.
- Functions under a Statute agreed by Commonwealth governments.
- **Composition:** eight members, comprising the President and 7 Members. Members are selected by the Commonwealth Governments.

- Eligibility:** For the post of Member, a person shall be of high moral character who has held or holds high judicial office in a Commonwealth country. Even a legal consultant with at least 10 years of experience is eligible for the post.
- Term:** The Members are appointed for a 4-year term. Their term can be renewed, however, only once.

Functions:

- It hears applications brought by staff of the Commonwealth Secretariat, Commonwealth Secretariat or any person who is in contract with the Commonwealth Secretariat.
- The Tribunal entertains only such cases in which organisations agree to surrender to its jurisdiction.

Sources: The Hindu.

5. COMPREHENSIVE NUCLEAR TEST BAN TREATY

What to study?

- For Prelims: CTBT- key facts.
- For Mains: Significance of the treaty and why India is not willing to sign the treaty, what needs to be done?

Context: The executive secretary of the Comprehensive Test Ban Treaty Organization (CTBTO) has offered India an '**Observer**' status and access to state-of-art International Monitoring System (IMS) data.

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.

Benefits of becoming an Observer:

- India can benefit immensely from becoming a CTBTO Observer as the organisation setting has changed a lot over the years. India will have access to the data available which was traditionally not made available.

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.

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 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.

Sources: The Hindu.

6. UNITED NATIONS NOT A STATE UNDER ARTICLE 12

What to study?

- For prelims: subjects under Article 12 and 226.
- For mains: implications and significance of the judgment.

Context: The Delhi High Court has ruled that the United Nations is not a State under Article 12 of the Constitution of India and is not amenable to its jurisdiction under Article 226 of the Constitution.

Background:

- A plea was filed by a former UNO employee who was found guilty of misconduct.
- The petitioner was convicted by a US Federal Court and sentenced to 97 months of imprisonment and two years of mandatory probation. He was released and deported to India in May 2014. In his petition, he claimed that due process was not followed in his case.

What's the issue now?

- He had in November 2018, written a letter to the Ministry of External Affairs seeking a grant of permission to initiate legal action against the United Nations Organization (UNO) under section 86 of Civil Procedure Code, 1908. The provision provides that a foreign State may be sued in any Court with the consent of the Central government.

Immunity available to UNO:

- The consent of the Government of India is not required to initiate a legal suit against UNO as it is not a foreign state and is only an Internal Organization.
- UNO and its officials enjoy immunity under the United Nations (Privileges and Immunities) Act, 1947.
- As per Section 2 of Article II of the Schedule of Act, 1947, UNO has immunity from every form of legal process except insofar as in any particular case it has expressly waived its immunity. The immunity granted is all comprehensive and applicability of any national laws are subject to the waiver of the immunity by respondent no.2 (UNO).

About UNO:

- The United Nations is an international organization founded in 1945. It is currently made up of 193 Member States. The mission and work of the United Nations are guided by the purposes and principles contained in its founding Charter.
- States are admitted to membership in the UN by a decision of the General Assembly upon the recommendation of the Security Council.
- The main organs of the UN are the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, the International Court of Justice, and the UN Secretariat. All were established in 1945 when the UN was founded.

Sources: The Hindu.

7. UN HUMAN RIGHTS COUNCIL

What to study?

- For Prelims and mains: UNHRC- functions and composition, issues related to reforms.

Why in News? Reacting angrily to a submission from the Geneva-based Human Rights Council (HRC) on alleged violations in Jammu and Kashmir, India has informed the United Nations body that it will no longer entertain any communication with the HRC's Special Rapporteurs on its report.

What's the issue?

- A report from two NGOs in Jammu and Kashmir on alleged cases of torture, was released in Srinagar, which was endorsed by a former UN Special Rapporteur.
- The Special Rapporteurs on Extrajudicial Executions had referred to a previous June 2018 report of the Office of the High Commissioner of Human Rights (OHCHR) and written to the government in March 2019, asking about steps taken by New Delhi to address alleged human rights violations listed in the report.
- In addition, the Special Rapporteurs had listed “13 cases of concern” from the year 2018 alone in which “four children were among eight civilians killed by members of the security forces.”
- Rejecting all the claims, the Indian Permanent Mission to the United Nations in Geneva replied to the OHCHR on April 23, saying that “India does not intend to engage further with these mandate holders or any other mandate holders on the issue,” whom it accused of “individual prejudice”.

About UNHRC:

- The UN body was established in 2006 with the aim of promoting and protecting human rights around the globe, as well as investigating alleged human rights violations.
- It is made up of 47 member states, which are selected by the UN General Assembly on a staggered basis each year for three-year-long terms.
- Members meet around three times a year to debate human rights issues and pass non-binding resolutions and recommendations by majority vote.
- The council also carries out the Universal Periodic Review of all UN member states, which allows civil society groups to bring accusations of human rights violations in member states to the attention of the UN.

Sources: The Hindu.

8. WTO'S DISPUTE SETTLEMENT MECHANISM

What to study?

- For prelims: WTOs dispute settlement mechanism- objectives, how it operates?
- For mains: issues associated and the need for reforms.

Context: The World Trade Organization's (**WTO's**) **dispute settlement mechanism** is going through a “crisis”: the body is struggling to appoint new members to its understaffed Appellate Body that hears appeals in trade. Over 20 developing countries met in New Delhi last week to discuss ways to prevent the WTO's dispute resolution system from collapsing due to the logjam in these appointments.

Challenges and concerns:

- Unless the issue is resolved, the body could become defunct, and countries locked in international trade disputes will be left with no forum for recourse.

What is the WTO's Appellate Body, and why is it important?

- The Appellate Body, set up in 1995, is a standing **committee of seven members that presides over appeals against judgments passed in trade-related disputes brought by WTO members**.
- With over 500 international disputes brought to the WTO and over 350 rulings issued since 1995, the organisation's dispute settlement mechanism is one of the most active in the world, and the Appellate Body is the highest authority in these matters.

Who can approach?

- Countries involved in a dispute over measures purported to break a WTO agreement or obligation can approach the Appellate Body if they feel the report of the panel set up to examine the issue needs to be reviewed on points of law. Existing evidence is not re-examined; legal interpretations are reviewed.
- The Appellate Body can uphold, modify, or reverse the legal findings of the panel that heard the dispute. Countries on either or both sides of the dispute can appeal.

Significance:

- The WTO's dispute settlement procedure is seen as being vital to ensuring smooth international trade flows. The Appellate Body has so far issued 152 reports. The reports, once adopted by the WTO's disputes settlement body, are final and binding on the parties.

So, what is the problem in the WTO Appellate Body?

- Over the last two years, the membership of the body has dwindled to just three persons instead of the required seven. This is because the **United States, which believes the WTO is biased against it, has been blocking appointments of new members and reappointments of some members who have completed their four-year tenures**. Two members will complete their tenures in December this year, leaving the body with just one member.
- **At least three people are required to preside over an appeal**, and if new members are not appointed to replace the two retiring ones, the body will cease to be relevant.

Concerns:

- The understaffed appeals body has been unable to stick to its 2-3 month deadline for appeals filed in the last few years, and the backlog of cases has prevented it from initiating proceedings in appeals that have been filed in the last year. The three members have been proceeding on all appeals filed since October 1, 2018.
- In February 2019, the body said it would be unable to staff an appeal in a dispute between Japan and India over certain safeguard measures that India had imposed on imports of iron and steel products. The panel had found that India had acted "inconsistently" with some WTO agreements, and India had notified the Dispute Settlement Body of its decision to appeal certain issues of law and legal interpretations in December 2018.
- The body has so far been unable to review at least 10 appeals that have been filed since July 2018.

What can happen if this situation is not addressed in time?

- With the Appellate Body unable to review new applications, there is already great uncertainty over the WTO's dispute settlement process. If the body is declared non-functional in December, **countries may be compelled to implement rulings by the panel even if they feel that gross errors have been committed**.
- Should such a country refuse to comply with the order of the panel on the ground that it has no avenue for appeal, it will run the risk of facing arbitration proceedings initiated by the other party in the dispute.

And what is the way forward from here on?

- While new appointments to the Appellate Body are usually made by a consensus of WTO members, there is a provision for voting where a consensus is not possible.
- The group of 17 least developed and developing countries, including India, that have committed to working together to end the impasse at the Appellate Body can submit or support a proposal to this effect, and try to get new members on the Appellate Body by a majority vote. This, however, may be an option of the last resort, as all countries fear unilateral measures by the US as a consequence of directly opposing its veto.

Sources: Indian express.

9. IBSA AND IT'S RELEVANCE:

Context: Foreign policy mandarins of IBSA Dialogue Forum met in Kochi recently. The central goal was to develop a blueprint to rejuvenate IBSA, widely viewed as a unique voice for the Global South.

Genesis: IBSA was launched through the **Brasilia Declaration in 2003**.

- Its summits, between 2006 and 2011, gave it a special global profile.

How does it affect India?

- This does not bode well for India, which is facing a rising number of dispute cases, especially on agricultural products. In the last four months alone, four cases have been brought to the WTO against India's alleged support measures for its sugar and sugarcane producers.
- Also, the overall weakening of the WTO framework could have the effect of undoing over two decades of efforts to avoid protectionism in global trade. This is a major concern currently, as trade tensions, for example between the US and China and the US and India, are on the rise.

- 2011 onwards, BRICS, the larger group comprising IBSA countries, China and Russia, started to overshadow IBSA. IBSA has been unable, until now, to hold its sixth summit.

Need for its presence:

- The idea of IBSA remains valid. The special responsibilities it bears cannot be discharged by BRICS. In fact, strengthening IBSA could increase the effectiveness of BRICS and encourage it to follow a more balanced approach on key issues of interest to India, Brazil and South Africa.

Way ahead:

- The current endeavours to infuse greater dynamism in IBSA are well-timed. They would need buy-in by the government that comes to power in India. Support by Brazil's President Jair Bolsonaro and South Africa's Cyril Ramaphosa, who has just won re-election as President, would be crucial.

Importance of IBSA:

- Throughout the period of its marginalisation by BRICS, a strong body of officials and experts in the three countries has held the view that IBSA is the **true inheritor of solidarity** among developing countries, which was nurtured from the **Bandung Conference (1955) through UNCTAD and G-77 to the BAPA+40 Declaration (2018)**.
- It is the champion of **South-South Cooperation**, and the advocate of a coordinated response by developing economies to secure the Sustainable Development Goals (SDGs).
- The glue that binds IBSA countries together is their faith in democracy, diversity, plurality, inclusivity, human rights and rule of law. This was reiterated through the IBSA Declaration on South-South Cooperation, issued in Pretoria in June 2018.

10. U20

What to study?

- For prelims: about U20- composition, objectives and functions.
- For mains: significance and the need for U20, outcomes of the recent meet.

Context: Tokyo is hosting the **second U20 Mayors Summit**. The summit takes place one month ahead of the **G20 Osaka Summit**. This will allow invited Mayors to discuss and approve a communiqué which will be formally presented to the G20.

Themes of Mayoral Sessions:

- Climate Action
- Circular Economy
- Social Inclusion and Integration
- Sustainable Economic Growth
- Gender Equality

Outcomes of the summit:

- Mayors of 30 major cities from across the world have urged the Global leaders to act fast on climate change, social inclusion and sustainable economic growth.
- The issues highlighted by the mayors and city governors are represented in the United Nations-mandated sustainable development goals, the deadline of which is 2030.
- It urged G20 leaders to ensure greenhouse gas emissions reduce substantially by '30 and reach net zero by 2050, ensure access of adequate housing to all populations.

What is U20?

- Urban 20 (U20) is an initiative developed in 2017 under the leadership of the Mayor of Buenos Aires and Mayor of Paris, and convened by the C40 Cities Climate Leadership Group (C40) in collaboration with United Cities and Local Governments (UCLG).
- Launched on December 12, 2017 at the **One Planet Summit in Paris**.
- U20 seeks to develop a joint position and collective messages to inform and enrich the discussions of national leaders at the G20 Summit through unique urban perspectives.
- Urban 20, or U20, aims to tackle global challenges by leveraging the potential of cities as hubs of diversity and innovation.
- **Urban 20 is composed of 25 global cities:** Beijing, Berlin, City of Buenos Aires, Chicago, Durban, Hamburg, Jakarta, Johannesburg, London, Los Angeles, Madrid, Melbourne, Mexico City, Milan, Montreal, Moscow, New York, Paris, Rio de Janeiro, Rome, Sao Paulo, Seoul, Sydney, Tokyo, and Tshwane.

Sources: the Hindu.

11. SHANGHAI COOPERATION ORGANIZATION (SCO)

What to study?

- For prelims and mains: SCO- objectives, members, functions, significance, various organs and issues associated.

Context: The Second Shanghai Cooperation Organization (SCO) Mass Media Forum is being held at **Bishkek, Kyrgyzstan**.

- The Forum aims to strengthen the exchange and cooperation in the field of mass media amongst SCO countries.
- It offers a unique platform for active work through mass media to create an objective vision of the organization and strengthen its positive image in the global information space.
- The representative of state bodies supervising mass media of the SCO countries (Member States, Observer Countries, Dialogue Partners); representatives of leading mass media of the SCO countries and representatives of the SCO Secretariat are participating in the Forum.



Background:

- The first SCO Media Summit was held in Beijing on 1 June 2018.
- This event was held under the motto “Development of the “Shanghai Spirit” and opening of a new era in the mass media cooperation”, where over 110 media outlets from 16 countries participated, including the SCO Member States, Observer States and Dialogue Partners.

About SCO:

- What is it?** The Shanghai Cooperation Organisation, also known as the **Shanghai Pact**, is a **Eurasian political, economic, and military organisation** which was founded in 2001 in Shanghai.

- **Founding members:** China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. The cooperation was renamed to Shanghai Cooperation Organisation after Uzbekistan joined the organisation in 2001.
- **The SCO's main goals are:** strengthening mutual trust and neighbourliness among the member states; promoting their effective cooperation in politics, trade, the economy, research, technology and culture, as well as in education, energy, transport, tourism, environmental protection, and other areas; making joint efforts to maintain and ensure peace, security and stability in the region; and moving towards the establishment of a democratic, fair and rational new international political and economic order. currently:
- **Presently, the SCO comprises eight member states**, namely the Republic of India, the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, and the Republic of Uzbekistan.
- **The SCO counts four observer states**, namely the Islamic Republic of Afghanistan, the Republic of Belarus, the Islamic Republic of Iran and the Republic of Mongolia.
- **The SCO has six dialogue partners**, namely the Republic of Azerbaijan, the Republic of Armenia, the Kingdom of Cambodia, the Federal Democratic Republic of Nepal, the Republic of Turkey, and the Democratic Socialist Republic of Sri Lanka.

Sources: the Hindu.

12. UNESCO WORLD HERITAGE SITES

What to study?

- For Prelims: UNESCO WHS- important sites.
- For Mains: Significance and the need for conservation of WHS.

Context: The Orchha town of Madhya Pradesh has been included in **tentative list of the World Heritage Sites** of United Nations Educational, Scientific and Cultural Organisation (UNESCO).

About Orchha Town:

- It is Situated on the banks of the **river Betwa**, in Niwari district of Bundelkhand region of Madhya Pradesh.
- **Significance:** The town is celebrated for its rich and ancient architecture of **Chaturbhuj Temple, Orchha Fort Complex, and Raja Mahal among others**. It is famous for its two elevated minarets – Saavan and Bhadon; and four palaces – Jahangir Palace, Rai Praveen Mahal, Raja Mahal, and Sheesh Mahal.
- The site houses '**Sri Ram Raja Mandir**'. It is the only place in India where Lord Ram is worshipped as a King, not as a deity, with this dedicated temple in his name.

UNESCO world heritage site:

- A UNESCO World Heritage Site is a place that is **listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as of special cultural or physical significance**.
- The list is **maintained by the international World Heritage Programme** administered by the UNESCO World Heritage Committee, composed of **21 UNESCO member states which are elected by the General Assembly**.
- Each World Heritage Site remains part of the **legal territory of the state** wherein the site is located and UNESCO considers it in the interest of the international community to preserve each site.

Selection of a site:

- To be selected, a World Heritage Site must be an already classified landmark, unique in some respect as a geographically and historically identifiable place having special cultural or physical significance (such as an ancient ruin or historical structure, building, city, complex, desert, forest, island, lake, monument, mountain, or wilderness area). It may signify a remarkable accomplishment of humanity, and serve as evidence of our intellectual history on the planet.

Legal status of designated sites:

- UNESCO designation as a World Heritage Site provides *prima facie* evidence that such culturally sensitive sites are legally protected pursuant to the Law of War, under the **Geneva Convention**, its articles, protocols and customs, together with other treaties including the **Hague Convention** for the Protection of Cultural Property in the Event of Armed Conflict and international law.

What are endangered sites?

- A site may be added to the List of World Heritage in Danger if there are conditions that threaten the characteristics for which the landmark or area was inscribed on the World Heritage List. Such problems may involve armed conflict and war, natural disasters, pollution, poaching, or uncontrolled urbanization or human development.
- This danger list is intended to increase international awareness of the threats and to encourage counteractive measures. Threats to a site can be either proven imminent threats or potential dangers that could have adverse effects on a site.
- The state of conservation for each site on the danger list is reviewed on a yearly basis, after which the committee may request additional measures, delete the property from the list if the threats have ceased or consider deletion from both the List of World Heritage in Danger and the World Heritage List.

Sources: the Hindu.

13. UN HABITAT

What to study?

- For Prelims and Mains: Composition, objectives, functions and significance of NMCG and UN Habitat, World Cities Day and its significance.

Context: India has been elected to the Executive Board of the first UN-Habitat Assembly.



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**.

Sources: the Hindu.

14. UN SECURITY COUNCIL

What to study?

- For Prelims: About UNSC- composition, objectives and functions.
- For Mains: Role and significance of UNSC, need for UNSC reforms, why India should be given permanent membership?

Context: Vice President calls for renewed efforts for India to gain permanent membership of the UN Security Council.

About UNSC:

What is it?

- The United Nations Security Council (UNSC) is one of the organs of the United Nations and is charged with the maintenance of international peace and security.



- **Its powers include** the establishment of peacekeeping operations, the establishment of international sanctions, and the authorization of military action through Security Council resolutions; it is the only UN body with the authority to issue binding resolutions to member states.
- **Members:** The Security Council consists of fifteen members. Russia, the United Kingdom, France, China, and the United States—serve as the body's five permanent members. These permanent members can veto any substantive Security Council resolution, including those on the admission of new member states or candidates for Secretary-General.
- **The Security Council also has 10 non-permanent members**, elected on a regional basis to serve two-year terms. The body's presidency rotates monthly among its members.

Proposed reforms:

- **Reform of the United Nations Security Council (UNSC) encompasses five key issues:** categories of membership, the question of the veto held by the five permanent members, regional representation, the size of an enlarged Council and its working methods, and the Security Council-General Assembly relationship. There is also a proposal to admit more permanent members.
- **India's demands:**
- India has been calling for the reform of the UN Security Council along with Brazil, Germany and Japan for long, emphasising that it rightly deserves a place at the UN high table as a permanent member.
- **Why India should be given a permanent seat in the council?**
- India was among the founding members of United Nations.
- It is the second largest and a one of the largest constant contributor of troops to United Nations Peacekeeping missions.
- Today, India has over 8,500 peacekeepers in the field, more than twice as many as the UN's five big powers combined.
- India, since long time, has been demanding expansion of UNSC and its inclusion as permanent member in it. It has been a member of UNSC for 7 terms and a member of G-77 and G-4, so permanent membership is a logical extension.

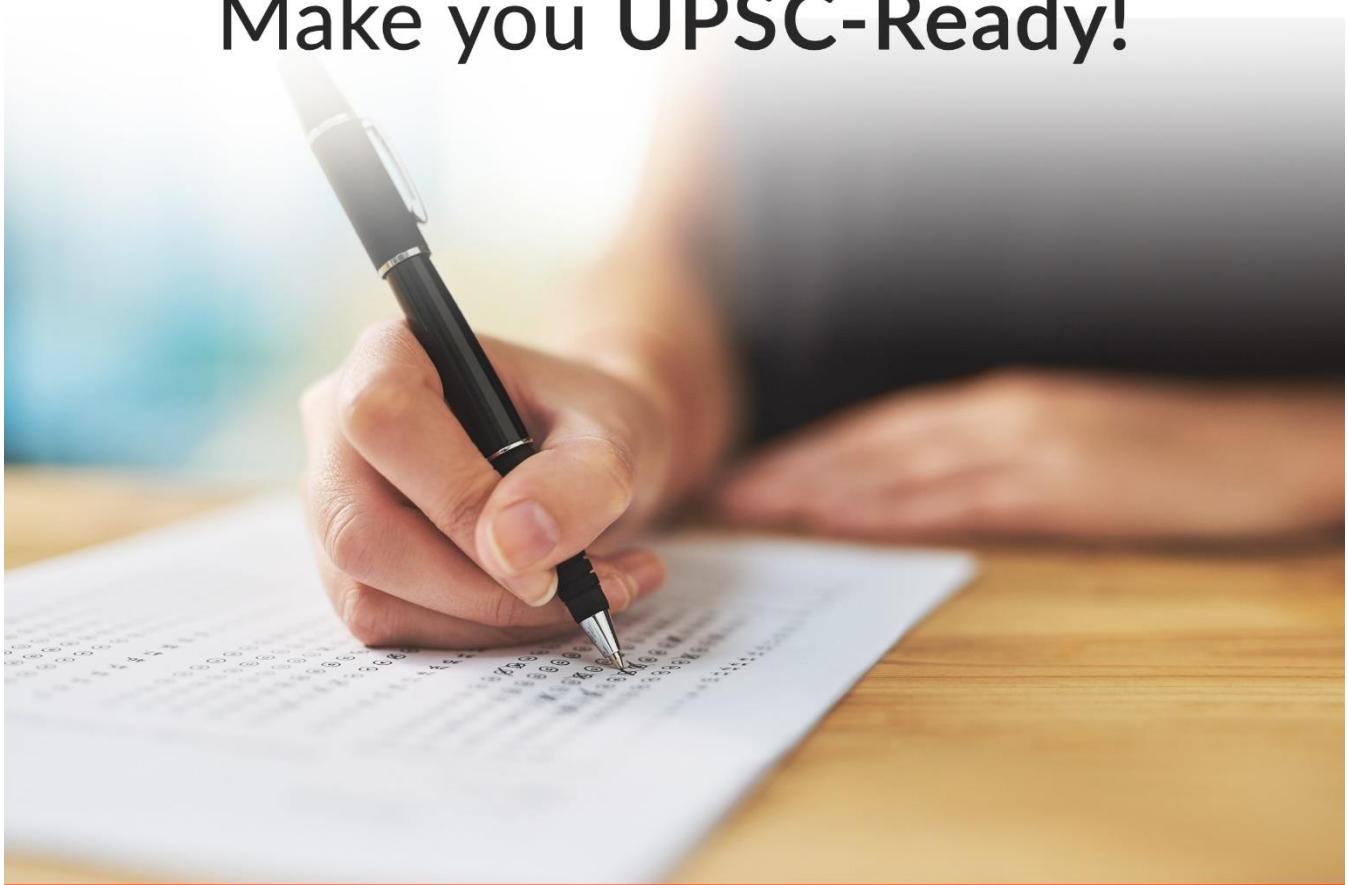


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GENERAL STUDIES - III

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

1. PREPAID PAYMENT INSTRUMENTS (PPIS)

What to study?

- For Prelims: What are PPIs and how are they regulated?
- For Mains: Significance and role of PPIs, regulatory challenges faced by them.

Context: Reserve Bank of India (RBI) has imposed a monetary penalty on five Pre-Paid Payment Instrument (PPI) issuers for violating its regulatory guidelines under provisions of **payment and settlement Systems act 2007**.

Background:

- As per RBI directions, PPI issuers were required to complete the KYC process by February 28, 2019. PPIs or mobile wallets were mandated by the banking regulator in October 2017 to capture all information required under the know-your-customer (KYC) guidelines by end February.

Features:

- Prepaid payment instruments (PPIs) come with a **pre-loaded value and in some cases a pre-defined purpose of payment**.
- They **facilitate the purchase of goods and services as well as inter-personal remittance transactions such as sending money to a friend or a family member**.
- These payment instruments are **licensed and regulated by the Reserve Bank of India**.
- There are three types of PPIs**—closed system PPIs, semi-closed system PPIs and open system PPIs.
- The most common example of a closed system PPI is a brand-specific gift card. Such cards, physical or otherwise, can be used only at specific locations, and cannot be used to transfer funds from one account to another.

Sources: the hindu.

What are PPIs?

- Prepaid payment instruments are those which **facilitate purchase of goods and services against the value stored on such instruments**. Value stored on them is paid by the holder using a medium (cash, debit card, credit card etc).
- These are generally issued in the **form of smart cards, mobile wallets, paper vouchers, internet accounts/wallets**.

2. NON-PERFORMING ASSETS (NPAS)

- Context:** Non-performing assets (NPAs) at commercial banks amounted to ₹10.3 trillion, or 11.2% of advances, in March 2018. Public sector banks (PSBs) accounted for ₹8.9 trillion, or 86%, of the total NPAs. The ratio of gross NPA to advances in PSBs was 14.6%. These are levels typically associated with a **banking crisis**.

What caused this?

- The credit boom** of the years 2004-05 to 2008-09. In that period, commercial credit (or what is called 'non-food credit') doubled. Indian firms borrowed furiously in order to avail of the growth opportunities they saw coming. Most of the investment went into infrastructure and related areas — telecom, power, roads, aviation, steel. Businessmen were overcome with exuberance, partly rational and partly irrational.
- Problems in acquiring land and getting environmental clearances**, several projects got stalled.
- At the same time, with the onset of **the global financial crisis in 2007-08 and the slowdown in growth after 2011-12**, revenues fell well short of forecasts. Financing costs rose as policy rates were tightened in India in response to the crisis.
- The depreciation of the rupee** meant higher outflows for companies that had borrowed in foreign currency.
- This combination of adverse factors made it difficult for companies to service their loans to Indian banks.

- The Reserve Bank of India (RBI), acting in the belief that NPAs were being under-stated, introduced **tougher norms for NPA recognition under an Asset Quality Review**.

Why high NPAs in public sector banks?

- PSBs had a higher exposure to the **five most affected sectors** — mining, iron and steel, textiles, infrastructure and aviation. These sectors accounted for 29% of advances and 53% of stressed advances at PSBs in December 2014.

What needs to be done?

- One immediate action that is required is resolving the NPAs.
- An alternative is to set up a Loan Resolution Authority, if necessary through an Act of Parliament.
- The government must infuse at one go whatever additional capital is needed to recapitalise banks — providing such capital in multiple instalments is not helpful.
- Over the medium term, the RBI needs to develop better mechanisms for monitoring macro-prudential indicators.
- Actions need to be taken to strengthen the functioning of banks in general and, more particularly, PSBs. Governance at PSBs, meaning the functioning of PSB boards, can certainly improve.

Impact of higher NPAs:

- Higher provisions on the part of banks.** Provisions rose to a level where banks, especially PSBs, started making losses. Their capital got eroded as a result. Without adequate capital, bank credit cannot grow. **Gross NPAs/advances rose sharply.**

3. CPI INFLATION

What to study?

- For prelims and mains: CPI inflation- how is it measured? Its significance, effects of variations on economy.

Why in News? Retail inflation rose to a six-month high of 2.92 per cent in April due to a spike in food prices, according to data from the Central Statistics Office. **CPI inflation** in April is the highest since October 2018 when the rate was 3.38 per cent.

Why is CPI inflation rising?

- Rising prices in the food basket, as well as jump in fuel prices, are contributing to the rising inflation.

Concerns:

- Rating agency Crisil expects retail inflation to rise by 60 basis points to 4 per cent this fiscal from 3.4 per cent in 2018-19. Within CPI inflation, food inflation is expected to rise in the current year, as last two months witnessed rise in prices of many farm commodities, **mainly due to drought in large parts of western and southern India, coupled with an early and harsher-than-usual summer.**

What is the impact on interest rates?

- Despite rising CPI inflation, analysts expect the Reserve Bank of India to cut repo rate — the rate at which it lends short-term funds to banks — as inflation remains within the RBI's target of 4 per cent even as growth of the Indian economy has been slowing down.

What Is the Consumer Price Index (CPI)?

- The Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food and medical care. It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them.
- Changes in the CPI are used to assess price changes associated with the cost of living; the CPI is one of the most frequently used statistics for identifying periods of inflation or deflation.

Understanding Consumer Price Index (CPI):

- The CPI measures the average change in prices over time that consumers pay for a basket of goods and services, commonly known as inflation. Essentially it attempts to quantify the aggregate price level in an economy and thus measure the purchasing power of a country's unit of currency.
- The weighted average of the prices of goods and services that approximates an individual's consumption patterns is used to calculate CPI.

Sources: The Hindu.

4. RBI RELEASES 'VISION 2021' FOR E-PAYMENT SYSTEM

What to study?

- For Prelims and mains: key features and significance, need for framework in this regard.

Context: The Reserve Bank of India (RBI) has released '**Payment and Settlement Systems in India: Vision 2019 – 2021**', a vision document for safe, secure, quick and affordable e-payment system.

- The core theme of the vision document is '**Empowering Exceptional (E)payment Experience**', that stresses on empowering every Indian to access a bunch of e-payment options safely and conveniently.

Need:

- The RBI has highlighted the need for a self-regulatory organisation for the digital payment space, which can serve as a two-way communication channel between the players and the regulator.
- The number of digital transactions is expected to increase more than four times, from 20.69 billion in December 2018 to 87.07 billion in December 2021.
- The digital payment transaction turnover vis-à-vis gross domestic product (at current market prices) is expected to further increase to 10.37 per cent in 2019, 12.29 per cent in 2020, and 14.80 per cent in 2021.

Way ahead:

- The RBI will implement the approach highlighted in the Vision document during the period 2019 – 2021. RBI's efforts will focus towards facilitating the operation of efficient and price-attractive payment systems. However, there will be minimal intervention of the RBI in fixing charges for customers to avail of digital payments.

Sources: The Hindu.

5. MASALA BONDS

What to study?

- For prelims and mains: masala bonds- features, need and significance.

Context: Kerala Infrastructure Investment Fund Board issued **Masala Bonds** to raise funds from the overseas market.

What are Masala Bonds?

- Masala Bonds are **rupee-denominated bonds** i.e the funds would be raised from overseas market in Indian rupees.
- Eligibility:** Any corporate, body corporate and Indian bank is eligible to issue Rupee denominated bonds overseas.

Where can these bonds be issued and who can subscribe?

- The Rupee denominated bonds can only be issued in a country and subscribed by a resident of such country that is a member of financial action task force and whose securities market regulator is a member of International Organisation of Securities Commission.

Highlights of Payment Systems Vision 2021:

- It has **36 specific action points and 12 specific outcomes**.
- The main agenda of the vision document is the '**no-compromise**' approach towards safety and security of payment systems.
- It outlined the measures that the central bank will undertake to foster innovation, cybersecurity, financial inclusion, customer protection, and competition.

The vision document aims to achieve "a '**highly digital**' and '**cash-lite**' society through **Goal Posts (4Cs)**:

- Competition
- Cost effectiveness
- Convenience
- Confidence

Key focus areas:

- Boosting customer experience with robust grievance redressal
- Empowering e-payment service providers
- Enabling eco-system and infrastructure for the e-payment system
- Putting down forward-looking regulations
- Undertaking Risk-focused Supervision

Limitations:

- RBI mandates that the money raised through such bonds **cannot be used for real estate activities** other than for development of integrated township or affordable housing projects.
- It also **can't be used for investing in capital markets**, purchase of land and on-lending to other entities for such activities as stated above.

- While residents of such countries can subscribe to the bonds, it can also be subscribed by multilateral and regional financial institutions where India is a member country.

What is the minimum maturity of such bonds?

- According to RBI, the minimum maturity period for Masala Bonds raised up to Rupee equivalent of USD 50 million in a financial year should be 3 years and for bonds raised above USD 50 million equivalent in INR per financial year should be 5 years.
- The conversion for such bonds will happen at the market rate on the date of settlement of transactions undertaken for issue and servicing of the bonds, including its redemption.

Sources: the Hindu

6. NEFT AND RTGS

- Context:** The RBI has proposed to examine the possibility of extending availability of **National Electronic Funds Transfer (NEFT)** round-the-clock on all the seven days of the week — 24x7 basis — to facilitate beyond the banking hour fund transfer. Besides, the central bank will also examine the possibility of extending the timings for **Real Time Gross Settlement (RTGS)** transactions.

What is NEFT?

- NEFT is an electronic funds transfer system maintained by the Reserve Bank of India (RBI). Started in November 2005, the setup was established and maintained by Institute for Development and Research in Banking Technology (IDRBT).
- NEFT enables bank customers in India to transfer funds between any two NEFT-enabled bank accounts on a one-to-one basis. It is done via electronic messages.
- Unlike Real-time gross settlement (RTGS), fund transfers through the NEFT system do not occur in **real-time basis**.

What is RTGS?

- RTGS are specialist funds transfer systems where the transfer of money or securities takes place from one bank to any other bank on a “real time” and on a “gross” basis.
- Settlement in “real time” means a payment transaction is not subjected to any waiting period, with transactions being settled as soon as they are processed.

7. CHIEF RISK OFFICER (CRO) FOR NBFCs

What to study?

- For prelims and mains: the proposal, need and significance.

Context: The RBI has asked the **non-banking financial companies (NBFCs)** with assets of more than ₹5,000 crore to appoint a **chief risk officer (CRO)**.

Roles of Chief Risk Officer (CRO):

- The primary role of the risk officer will be identification, measurement and mitigation of risks.
- All credit products (retail or wholesale) shall be vetted by the CRO from the angle of inherent and control risks.
- The CRO's role in deciding credit proposals shall be limited to being an adviser.

Reporting by CRO:

- RBI has mandated that the CRO shall report directly to the MD and CEO or the risk management committee (RMC) of the board.
- Moreover, in case the CRO reports to the MD and CEO, the risk management committee or the board shall meet the CRO in the absence of the MD and CEO, at least on a quarterly basis.
- The CRO shall not have any reporting relationship with the business verticals of the NBFC and shall not be given any business targets.

Appointment and Transfer:

- The CRO shall be a senior official in the hierarchy of an NBFC and shall possess adequate professional qualification or experience in the area of risk management.
- The CRO shall be appointed for a fixed tenure with the approval of the board.
- There shall not be any ‘dual hatting’ i.e. the CRO shall not be given any other responsibility.
- The CRO can be transferred or removed from his post before completion of the tenure only with the approval of the board.
- And such premature transfer or removal shall be reported to the department of non-banking supervision of the regional office of RBI under whose jurisdiction the NBFC is registered.

Need:

- With the increasing role of NBFCs in direct credit intermediation, there is a need for NBFCs to augment risk management practices. Ongoing rating downgrades of non-banks which has raised fears of another liquidity crisis.

Sources: The Hindu.

8. REGULATORY CADRE WITHIN RBI

What to study?

- For prelims and mains: need for and significance of the proposed board.

Context: The RBI has decided to create a specialised **supervisory and regulatory cadre** within the RBI in order to strengthen the supervision and regulation of commercial banks, urban cooperative banks and NBFCs.

Need for a regulatory Cadre:

- A series of events including the IL&FS defaults, ICICI Bank loan issue, PNB fraud and the liquidity issues in the NBFC sector in the last two years have increased the concerns.
- **Complexity:** The present structure of supervision in RBI in the context of the growing diversity, complexities and interconnectedness within the Indian financial sector is too complex.
- **There were complaints that the RBI was lax in the supervisory functions,** especially in timely detection of frauds and poor governance in the banking sector.
- **Increased burden:** With the number of commercial bank branches being more than 1,16,000 in the country it would be impossible to cover each and every branch under the RBI’s supervisory process.

Current practice:

- Currently, banks follow risk-based supervision which focusses on evaluating both present and future risks and facilitates early corrective action. In comparison, supervision of NBFCs and urban cooperative banks is less stringent.

Sources: livemint.

9. CURRENCY CHEST

What to study?

- For Prelims: Currency chest- features.
- For Mains: Need and significance.

Context: The Reserve Bank of India is planning to allow large modern currency chests to increase the service charges on cash deposited by non-chest bank branches from the existing rate of ₹5 per packet of 100 pieces to a higher rate subject to a maximum of ₹8 per packet. For this, only a currency chest (CC) that fulfils the minimum standards will be eligible to be classified as a large modern CC.

What are Currency chests?

- Currency chests are branches of selected banks authorised by the RBI to stock rupee notes and coins.

Who determines the number of notes and coins to be printed?

- The responsibility for managing the currency in circulation is vested in the RBI.
- **The central bank advises the Centre on the number of notes to be printed, the currency denominations, security features and so on.** The number of notes that need to be printed is determined using a statistical model that takes the pace of economic growth, rate of inflation and the replacement rate of soiled notes.
- The **Government has, however, reserved the right to determine the amount of coins that have to be minted.**

Role of currency chests:

- The RBI offices in various cities receive the notes from note presses and coins from the mints. These are sent to the currency chests and small coin depots from where they are distributed to bank branches.
- The RBI has set up over 4,075 currency chests all over the country. Besides these, there are around 3,746 bank branches that act as small coin depots to stock small coins.

Reserve Bank of India (RBI) recently issued new guidelines for banks to set up new currency chests. They include:

- Area of the strong room/ vault of at least 1,500 sq ft. For those situated in hilly/ inaccessible places, the strong room/ vault area of at least 600 sq ft.
- The new chests should have a processing capacity of 6.6 lakh pieces of banknotes per day. Those situated in the hilly/ inaccessible places, a capacity of 2.1 lakh pieces of banknotes per day.
- The currency chests should have Chest Balance Limit (CBL) of Rs 1,000 crore, subject to ground realities and reasonable restrictions, at the discretion of the Reserve Bank.

Sources: the Hindu.

10. OPEN MARKET OPERATIONS (OMO)

What to study?

- For prelims and mains: OMOs- meaning, need, significance and concerns.

Context: The Reserve Bank of India is planning to inject Rs. 15,000 crore into the financial system next month through purchase of government bonds via the auction route.

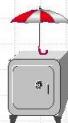
- The government securities will be bought under **open market operations (OMO)**. The decision has been taken in view of the evolving liquidity situation.

What is OMO?

- Open market operations is **the sale and purchase of government securities and treasury bills by RBI or the central bank of the country.**
- The objective of OMO is **to regulate the money supply in the economy.**
- RBI carries out the OMO **through commercial banks and does not directly deal with the public.**
- **Features:** When the RBI wants to increase the money supply in the economy, it purchases the government securities from the market and it sells government securities to suck out liquidity from the system.

Sources: the Hindu.

Network of Currency Chests



- ◆ RBI is located only in 18 places for currency operations
- ◆ Distribution of notes and coins throughout the country is done through designated bank branches, called chests
- ◆ Chest is a receptacle in a commercial bank to store notes and coins on behalf of the Reserve Bank
- ◆ Deposit into chest leads to credit of the commercial bank's account and withdrawal, debit

Topics: Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.

1. SERVICES TRADE RESTRICTIVENESS INDEX

What to study?

- For Prelims: key features of STRI.
- For Mains: Concerns and issues raised by India.

Context: Union Commerce ministry has found problems with the current method of **Services Trade Restrictiveness Index (STRI)** which ranks countries based on their services trade policies, indicating the outcomes are biased and counter-intuitive.

- The 2018 edition covers a total of 45 economies (36 OECD and the rest non-OECD) and 22 sectors.

Issues and concerns raised by India:

- **Design issues** that render STRI impractical for use. For example, the index seems to show the Indian services sector as one of the most restrictive, particularly in policy areas like foreign entry. This seems surprising as since 1991, the one area that has seen maximum liberalisation in India is FDI.
- **Theoretical and empirical inconsistencies** in the OECD methodology. For example, change in regulatory measures in one policy area can lead to dramatic changes in the STRI in another policy area which is not very useful for policy purposes.
- **Developed country bias:** The data seems to have been generated by rather arbitrary procedures and reflects a developed country bias.

Sources: Indian Express.

About STRI:

- Launched in 2014 and computed by the Organisation for Economic Cooperation and Development (OECD). The database is based on regulations currently in force.
- **Uses and significance:** It helps to identify which policy measures restrict trade. It provides policy makers and negotiators with information and measurement tools to improve domestic policy environment, negotiate international agreements and open up international trade in services. It can also help governments identify best practice and then focus their domestic reform efforts on priority sectors and measures.
- **Scores:** STRI indices take the value from 0 to 1, where 0 is completely open and 1 is completely closed.

2. NEED OF MANUFACTURING POLICY

Concerns:

- India still has no manufacturing policy. Focussing (as “Make in India” does) on increasing foreign direct investment and ease of doing business, important though they may be, does not constitute an industrial policy.

Significance of the Manufacturing sector:

- Manufacturing is an engine of economic growth because it offers economies of scale, embodies technological progress and generates forward and backward linkages that create positive spillover effects in the economy.
- No major country managed to reduce poverty or sustain growth without manufacturing driving economic growth. This is because productivity levels in industry (and manufacturing) are much higher than in either agriculture or services.

Need of the hour:

- There is a need for government intervention in the case of market failures. Specific instances of market failure require a government-driven industrial policy: deficiencies in capital markets, usually as a result of information asymmetries; lack of adequate investments inhibiting exploitation of scale economies; imperfect information with respect to firm-level investments in learning and training; and lack of information and coordination between technologically interdependent investments. These are good reasons why an economy-wide planning mechanism is needed in India.

Why have an industrial policy in India now?

- There is the need to coordinate complementary investments when there are significant economies of scale and capital market imperfections.
- Industrial policies are needed to address learning externalities such as subsidies for industrial training.
- The state can play the role of organiser of domestic firms into cartels in their negotiations with foreign firms or governments — a role particularly relevant in the 21st century after the big business revolution of the 1990s.
- The role of industrial policy is not only to prevent coordination failures (i.e. ensure complementary investments) but also avoid competing investments in a capital-scarce environment.
- An industrial policy can ensure that the industrial capacity installed is as close to the minimum efficient scale as possible.
- When structural change is needed, industrial policy can facilitate that process. In a fast-changing market, losing firms will block structural changes that are socially beneficial but make their own assets worthless. East Asian governments prevented such firms from undermining structural change, with moves such as orderly capacity-scraping between competing firms and retraining programmes to limit such resistance.

3. EXPORT POLICY

What to study?

- For prelims and mains: key features, need, challenges and significance of the policy.

Context: The **Commerce Ministry** has come out with a comprehensive draft of the export policy which includes product-specific rules with a view to provide a ready reckoner for exporters.

Highlights of the Draft Export Policy, 2019:

- The draft policy aims at consolidating the export norms for each product as applicable at different government agencies.
- It is proposed to bring out a comprehensive exports policy for all **ITC (HS) tariff codes** (including items which are 'free' for export and do not currently exist in the policy), covering conditions/restrictions imposed by partner government agencies on exports.
- The compendium will help an exporter know all the applicable norms pertaining to a particular product, helping him/her understand policy conditions for that item.
- Consolidating norms
- This exercise is for consolidating the norms and not for making any changes in the existing export policy of the country. It also includes non-tariff regulations imposed by different government agencies.

Additional facts:

- **ITC (HS) codes are better known as Indian Trade Clarification (ITC) and are based on Harmonized System (HS) of Coding.** It was adopted in India for import-export operations. Indian custom uses an eight digit ITC (HS) code to suit the national trade requirements.
- Any changes or formulation or addition of new codes in ITC-HS Codes are carried out by **DGFT (Directorate General of Foreign Trade).**

Sources: the Hindu.

Topics: Agriculture issues; Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions.

1. FALL ARMYWORM

- **Why in News?** First reported in India last year, the Fall Armyworm (FAW) or Spodoptera frugiperda has become a major problem for farmers this year, with the pest hitting the production of the crop.

Concerns:

- More than 50% of the country, including Mizoram, has reported cases of FAW infestation this year.

- Ahead of the new kharif season, FAW poses a serious challenge before farmers due to lack of knowledge about the pest and lack of clarity on how to tackle it.
- If these problems are not addressed urgently, vast tracts of crops can be laid to waste by this pest.

What is FAW?

- A native of the **tropical and sub-tropical regions of the Americas**, FAW was first detected in the African continent in 2016. Since then, it has spread to other countries such as China, Thailand, Malaysia and Sri Lanka.
- **In India:** It was reported in India for the first time last year, when it affected crops in Karnataka. Within a span of only six months, almost 50 per cent of the country, including Mizoram, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Gujarat and West Bengal, has reported FAW infestations.

Life cycle:

- In its 45-day-long lifecycle, the female moth of this pest lays around 1,500-2,000 eggs on the top of leaves. In the roughly 30-day larval stage, the caterpillar goes through six stages of development or instars.
- This is the most dangerous part of the lifecycle as the caterpillar feeds on leaves, whorls, stalks and flowers of crop plants. Once this stage is completed, the growing moth pupates in the soil — for 8-9 days in summer and 20-30 days in cold weather. The nocturnal egg-laying adults live for about 10 days, during which they migrate long distances.

What needs to be done?

- Most entomologists have suggested the **Integrated Pest Management system** to control the pest. This would involve constant surveillance of the pest during its vegetative growth phase and taking measures like mechanically destroying the egg masses and using pheromone traps to catch the insects.
- **Pheromone traps** are devices which are used to attract male insects by luring them with female pheromones. Farmers should also be discouraged from taking up staggered sowing, as this would allow the pest to have multiple reservations for growth.

2. FUND FOR RURAL AGRICULTURAL START-UPS

What to study?

- For prelims: about NABARD and the proposed fund.
- For mains: Need and significance of fund proposed.

Context: NABARD has announced Rs 700-crore **venture capital fund for rural agricultural start-ups**.

Key facts:

- This project was launched by **Nabventures**, an auxiliary unit of NABARD.
- NABARD proposed amount of Rs 500 crore with an option to retain over-subscriptions of Rs 200 crore.
- NABARD has given an anchor commitment for the fund, which will be investing across startups engaged in agriculture, food and rural development space.

Significance and benefits of the fund:

- The fund will have a high impact as it will provide a boost to investment ecosystem in the core areas of agriculture, food and improvement of rural livelihoods.

What makes FAW dangerous?

- It is the **polyphagous** (ability to feed on different kinds of food) nature of the caterpillar and **the ability of the adult moth to fly more than 100 km per night**.
- Given its ability to feed on multiple crops — nearly 80 different crops ranging from maize to sugarcane — FAW can attack multiple crops.
- Similarly, it can spread across large tracts of land as it can fly over large distances. This explains the quick spread of the pest across India.

How FAW affects output?

- Till date, India has reported FAW infestation on maize, sorghum (jowar) and sugarcane crops. Maize has been the worst affected as most maize-growing states in southern India have been affected by the pest.
- FAW infestation and drought has led to a shortfall of nearly 5 lakh tonnes in output, prompting the central government to allow import of maize under concessional duty. Maize is the third most important cereal crop grown in the country and the infestation, if not checked in time, can wreck havoc.

About NABARD:

- It is an apex development and specialized bank established on 12 July 1982 by an act by the parliament of India.
- Its main focus is to uplift rural India by increasing the credit flow for elevation of agriculture & rural non farm sector.
- It was established based on the recommendations of the Committee set up by the Reserve Bank of India (RBI) under the chairmanship of Shri B. shivaraman.
- It replaced the Agricultural Credit Department (ACD) and Rural Planning and Credit Cell (RPCC) of Reserve Bank of India, and Agricultural Refinance and Development Corporation (ARDC).
- It has been accredited with “matters concerning policy, planning and operations in the field of credit for agriculture and other economic activities in rural areas in India”.
- The Reserve Bank of India (RBI) recently sold its entire stakes in the National Bank for Agriculture & Rural Development (NABARD) and National Housing Bank. The decision to divest its entire stake was taken based on the recommendations of the second Narasimham Committee. The government now holds a 100 per cent stake in both NHB and NABARD.

Sources: The Hindu.

3. PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

What to study?

- For Prelims: PMFBY- key features.
- For Mains: PMFBY performance analysis, shortcomings and ways to address them.

Context: Out of ₹1,400 crore earmarked annually for the north-eastern States under the Centre's flagship Pradhan Mantri Fasal Bima Yojana, only ₹8 crore — or just over half a per cent — was actually spent last year, according to the Agriculture Ministry. Four north-eastern States — Arunachal Pradesh, Nagaland, Manipur and Mizoram — are not covered under the scheme at all.

Issues with the implementation of the scheme:

- Farmers in seven States and four Union Territories nationwide will not be covered by the scheme in this kharif or summer season, for which sowing begins next month.
- Some large States like Bihar and West Bengal have withdrawn from PMFBY to set up their own State-level schemes and Punjab has never participated in the scheme, while UTs like Delhi and Chandigarh are largely urban spaces.
- However, States in the Northeast, as well as the Union Territory of Daman and Diu, face challenges such as the lack of interest by insurance companies and the lack of State budgetary resources to pay their share of the premium.
- This lack of coverage has left thousands of maize farmers devastated by losses from the fall armyworm pest there without any hope of insurance.
- Insurance companies have been reluctant to bid for these States, as the administrative costs are high. There are no proper land records. Historic yield data is not available for these States, particularly at the gram panchayat and block level.

About PMFBY:

- In April, 2016, the government of India had launched Pradhan Mantri Fasal Bima Yojana (PMFBY) after rolling back the earlier insurance schemes viz. National Agriculture Insurance Scheme (NAIS), Weather-based Crop Insurance scheme and Modified National Agricultural Insurance Scheme (MNAIS).
- **Premium:** It envisages a uniform premium of only 2% to be paid by farmers for Kharif crops, and 1.5% for Rabi crops. The premium for annual commercial and horticultural crops will be 5%.
- The scheme is mandatory for farmers who have taken institutional loans from banks. It's optional for farmers who have not taken institutional credit.

Objectives:

- Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events.
- Stabilizing the income of farmers to ensure their continuance in farming.
- Encouraging farmers to adopt innovative and modern agricultural practices.
- Ensuring flow of credit to the agriculture sector which contributes to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

Challenges at present:

- **Insufficient reach and the issue of penetration.**
- **Data constraints:** With just around 45% of the claims made by farmers over the last three crop seasons data for the last rabi season is not available paid by the insurance companies.
- **Low payout of claims:** The reason for the very low payout of claims is that only few state governments are paying their share of the premiums on time and till they do, the central government doesn't pay its share either. Till they get the premium, insurance companies simply sit on the claims.
- **Gaps in assessment of crop loss:** There is hardly any use of modern technology in assessing crop damages. There is lack of trained outsourced agencies, scope of corruption during implementation and the non-utilisation of technologies like smart phones and drones to improve reliability of such sampling
- **Less number of notified crops** than can avail insurance, Inadequate and delayed claim payment.
- **High actuarial premium rates:** Insurance companies charged high actuarial premium rates. If states delay notifications, or payment of premiums, or crop cutting data, companies cannot pay compensation to the farmers in time.
- **Poor capacity to deliver:** There has been no concerted effort by the state government and insurance companies to build awareness of farmers on PMFBY. Insurance companies have failed to set-up infrastructure for proper implementation of PMFBY. PMBY is not beneficial for farmers in vulnerable regions as factors like low indemnity levels, low threshold yields, low sum insured and default on loans make it a poor scheme to safeguard against extreme weather events.

Sources: the Hindu.

4. ONGOLE CATTLE

What to study?

- For prelims and mains: Ongole cattle- significance and the need for conservation.

Context: Vice President of India, M. Venkaiah Naidu has called for protecting Ongole cattle breed.

About Ongole cattle:

- It is an indigenous cattle breed that originates from **Prakasam District in the state of Andhra Pradesh**. The breed derives its name from the place the breed originates from, Ongole.
- The Ongole breed of cattle, Bos Indicus, has a great demand as it is said to possess **resistance to both foot and mouth disease and mad cow disease**.
- The Ongole is one of the **heaviest breeds**.
- These cattle are commonly used in bull fights in Mexico and some parts of East Africa due to their strength and aggressiveness. They also participate in traditional bull fights in Andhra Pradesh and Tamil Nadu.
- It has a great similarity with the Gaolao breed of Madhya Pradesh and also has a resemblance to the Bhagnari type of cattle in the north of India.

5. MINIMUM SUPPORT PRICE (MSP)

What to Study?

- For prelims: what is MSP, crops covered and other related facts.
- For mains: issues related to MSP and the need for reforms.

Context: Haryana government is planning to discourage planting of the water-guzzling rice (paddy) crop, which threatens to deplete the State's groundwater. Meanwhile, farmers have asked the government to first come out with a mechanism to procure alternative crops at the Minimum Support Price (MSP) so that farmers are not at the receiving end.

What necessitated This?

- Water depletion in Haryana over the years has led to 60 dark zones in the State, which include 21 critical ones in 10 districts.

Challenges:

- The government wants to save water but it seems to be unaware of **the ground realities**.
- If the government wants farmers to give up rice and cultivate some other crop then there **needs to be a mechanism to purchase the alternative crop at MSP**.
- The State government should **enact a law**, which guarantees that the produce of farmer is purchased at MSP.
- Farmers will only leave rice cultivation if they are sure of reaping more profit with the alternative crop (maize and tuar), which the government is suggesting.

About MSP:

What is it?

- In theory, an MSP is the minimum price set by the Government at which farmers can expect to sell their produce for the season. When market prices fall below the announced MSPs, procurement agencies step in to procure the crop and ‘support’ the prices.

Who announces?

- The Cabinet Committee of Economic Affairs announces MSP for various crops at the beginning of each sowing season based on the recommendations of the Commission for Agricultural Costs and Prices (CACP).
- The CACP takes into account demand and supply, the cost of production and price trends in the market among other things when fixing MSPs.

Why is it important?

- Price volatility makes life difficult for farmers. Though prices of agri commodities may soar while in short supply, during years of bumper production, prices of the very same commodities plummet.
- MSPs ensure that farmers get a minimum price for their produce in adverse markets.
- MSPs have also been used as a tool by the Government to incentivise farmers to grow crops that are in short supply.

Sources: the Hindu.

6. FARM PRICE CHALLENGE

Context: Most of the commodities for which the government fixes minimum support prices (MSPs) are being traded at 10 to 30 per cent below these rates in the ongoing rabi marketing season.

Performance of PM-AASHA:

- The government’s flagship price support scheme, **PM-AASHA (Annadata Aay Sanrakshan Abhiyan)**, has remained virtually a non-starter.

Issues with PM-AASHA:

- Physical procurement of stocks at MSPs, price deficiency payment of the kind tried out in Madhya Pradesh, and a few other states, and the participation of private trade in the procurement and management of farm produce on a fixed-commission basis.
- The system of open-ended procurement of staple cereals, notably rice and wheat, has been in operation for decades and has served well to run the world’s largest public distribution system but at a huge cost to the exchequer.
- It has, however, remained confined primarily to parts of a handful of states where the procurement infrastructure exists.
- The price deficiency payment system, too, has failed to deliver the results because of a cumbersome registration procedure; mandatory sale through the regulated mandis dominated by manipulative middlemen; and capping total purchases at 25 per cent of production.

Reasons for price meltdown:

- consistent surplus production in the last couple of years
- subdued global commodity prices
- unfavourable domestic and external trade policies concerning agri-commodities
- offloading previously procured stocks
- permitting imports while the domestic crops are still being marketed

- The third option of roping in private traders in price support operations has found no takers chiefly because the proposed commission of 15 per cent of the MSP for the operation involving buying, bagging, transporting, storing and disposing of the stocks is too meagre for the task.

Measures needed:

- An export window as an outlet for surplus stocks. This can be created by modifying import-export tariffs with an eye on boosting agri-exports.
- The farmers need to be incentivised to diversify their production by growing high-value crops, which could yield better returns without the government's intervention.
- The overarching objective of the policy regime has to be to strike a balance between the farmers' interests and inflation management.

Topics: *Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.*

1. ICAT

What to study?

- For prelims and mains: About ICAT and NATRIP.

About ICAT Manesar:

- International Centre for Automotive Technology (ICAT) Manesar is a division of **NATRIP Implementation Society (NATIS)** under the Department of Heavy Industries, India.

Functions:

- It provides services for testing, validation, design and homologation of all categories of vehicles.
- It assists the automotive industry in adopting cutting edge technologies in vehicle evaluation and component development to ensure reliability, durability and compliance to the current and future regulations.

National Automotive Testing and R&D Infrastructure Project (NATRIP):

- The Project aims at creating core global competencies in Automotive sector in India and facilitate seamless integration of Indian Automotive industry with the world as also to position the country prominently on the global automotive map.

2. WASTE TO WEALTH TECHNOLOGIES

What to study?

- For prelims: about PM-STIAC- composition, roles and objectives.
- For mains: waste to wealth- need, significance and challenges.

Context: To commemorate the **150th birth anniversary of Mahatma Gandhi**, the Office of the Principal Scientific Adviser (PSA) to the Government of India and Indian Institute of Technology Delhi (IIT Delhi) signed a Memorandum of Understanding for setting up a **Centre of Excellence for Waste to Wealth Technologies** for implementation of sustainable, scientific and technological solutions for waste management, through validation and deployment of available technologies for transformation of waste to wealth.

Key facts:

- The waste to wealth mission project has been approved under the recently constituted **Prime Minister's Science Technology and Innovation Advisory Council (PM-STIAC)**.
- The partnership will provide an effective **platform for stakeholders to bring together integrated approaches for effective recycle, reuse and resource recovery of waste**.
- The immediate objective** is to implement technologies that are available with various national and international academias, industries, research laboratories and other agencies by way of setting up pilot

projects on-site effectively and successfully, and demonstrating the proof of concept of the technology under Indian condition.

- This will be carried out by creating a **strong collaborating network** between IIT Delhi, and other national and international stakeholders through the aegis of the office of the PSA.
- **The long-term goal** is to create circular economic models for waste management, by leveraging big data analytics and frontier technologies to streamline waste in India.
- The overall outcomes would involve treating waste and generating different forms of energy, thereby making India a waste free nation, with zero greenhouse gas emission and no health hazard.
- Under the initiative, a **waste to wealth programme management centre** will also be set up at IIT Delhi.
- **The office of the PSA acts as a ‘think-tank’ and ‘action-tank’** for science, technology and innovation activities. The office plays a catalytic and synergistic role to strongly connect government ministry, academia and industry, to evolve relevant policies, make recommendations for the relevant scientific departments and ministries, and implement scientific interventions in various sectors of national priority.

About Prime Minister's Science Technology and Innovation Advisory Council:

- **Chairperson:** Principal Scientific Adviser to the Government of India
- The PM-STIAC is an overarching Council that facilitates the PSA's Office to assess the status in specific science and technology domains, comprehend challenges in hand, formulate specific interventions, develop a futuristic roadmap and advise the Prime Minister accordingly.
- PSA's Office also oversees the implementation of such interventions by concerned S&T Departments and Agencies and other government Ministries.

Why convert waste to wealth?

- **Over 75% of the waste we generate is recyclable but we, in India, recycle just 30%.** It is time for the nation to wake up and start taking waste management seriously because if this issue is ignored any further then by 2030 we will need a landfill as big as Bengaluru to dump all the waste.
- According to the Central Pollution Control Board, **less than 15% of the municipal solid waste generated is processed or treated.**
- **There are various issues plaguing efficient waste management in India,** ranging from lack of proper guidelines, planning on the part of authorities, poor waste collection, and treatment system to poor awareness among citizens about waste segregation.

3. ABHYAS – HIGH-SPEED EXPENDABLE AERIAL TARGET (HEAT)

Context: DRDO recently conducted the flight test of ABHYAS – High-speed Expendable Aerial Target (HEAT) from a test range in Odisha.

- The configuration of ABHYAS is designed on an in-line small gas turbine engine and it uses **indigenously developed MEMS based navigation system.**
- ‘Abhyas’ is designed for **autonomous flying with the help of an autopilot.**
- A **Luneburg lens** in the nose cone improves the radar cross-section of the target for weapons practice.
- It also has an **acoustic miss distance indicator (AMDI)** to indicate the missed distance.

4. YUVA VIGYANI KARYAKRAM

What to study?

- For Prelims and Mains: Key features and significance of ISRO’s Young Scientist programme.

Context: ISRO recently inaugurated the **Young Scientist Programme YUVIKA 2019.**

About YUva VIGYANI KARYAKRAM:

- Launched by **Indian Space Research Organisation.**
- It is a special **programme for School Children**, in tune with the Government’s vision “Jai Vigyan, Jai Anusandhan”.
- **Aim:** The Program is primarily aimed at imparting basic knowledge on Space Technology, Space Science and Space Applications to the younger ones with the intent of arousing their interest in the emerging areas of Space activities.

- **Participants:** It is proposed to select 3 students each from each State/ Union Territory to participate in this programme covering CBSE, ICSE and State syllabus.
- **Eligibility:** Those who have just completed 9th standard will be eligible for the online registration. The selection is based on the 8th Standard academic performance and extracurricular activities. Students belonging to the rural area have been given special weightage in the selection criteria. In case there is tie between the selected candidates, the younger candidates will be given priority.

Sources: the Hindu.

5. POLY (DIKETOENAMINE)

What to study?

- For prelims and mains: key features, need and significance of the new material.

Context: US researchers have designed a fully recyclable plastic which can be disassembled into its constituent parts at molecular level. The name of newly created recyclable plastic is **Poly (Diketoenamine), or PDK**.

Key features:

- Unlike conventional plastics, the monomers of PDK plastic could be recovered and freed from any compounded additives simply by dunking the material in a highly acidic solution.
- It can be fully recycled into new materials of any form, shape or colour without any loss of its performance or quality.
- Not only does acid break down PDK polymers into monomers, but the process also allows the monomers to be separated from entwined additives.

Significance:

- The new material takes recycling into consideration from a molecular perspective. It means that this recyclable plastic can be disassembled into its constituent parts at molecular level.

Need:

- Most of the plastic products are made of large molecules called polymers. It is composed of various units of small carbon compounds named monomers. Manufacturers generally add chemicals to make plastic more useful.
- When these plastics, with different chemical composition, go to processing unit are mixed and ground together into smaller pieces. After that plastic goes to the melting unit to make a new material, it becomes difficult to identify true properties.

Sources: the Hindu.

4. NEW DEFINITION OF KILOGRAM

What to study?

- For Prelims and Mains: Need for redefining, about the new system, significance and the process of redefining.

Why in News? The CSIR-NPL, which is India's official reference keeper of units of measurements has released a set of recommendations requiring that school textbooks, engineering-education books, and course curriculum update the definition of the kilogram.

- The institute is also in the process of making its own '**Kibble Balance**', a device that was used to measure the Planck Constant and thereby reboot the kilogram.

Background:

- Scientists, last year, have changed the way the kilogram is defined. The decision was made at the General Conference on Weights and Measures. The new definitions came into force on 20 May 2019.

Why kill off the kilogram?

- Currently, it is defined by the weight of a platinum-based ingot called "Le Grand K" which is locked away in a safe in Paris.

- Le Grand K has been at the forefront of the international system of measuring weights since 1889. Several close replicas were made and distributed around the globe. But the master kilogram and its copies were seen to change – ever so slightly – as they deteriorated.
- In a world where accurate measurement is now critical in many areas, such as in drug development, nanotechnology and precision engineering – those responsible for maintaining the international system had no option but to move beyond Le Grand K to a more robust definition.

How wrong is Le Grand K?

- The fluctuation is about 50 parts in a billion, less than the weight of a single eyelash. But although it is tiny, the change can have important consequences.

How does the new system work?

- Electromagnets generate a force. Scrap-yards use them on cranes to lift and move large metal objects, such as old cars. The pull of the electromagnet, the force it exerts, is directly related to the amount of electrical current going through its coils. There is, therefore, a direct relationship between electricity and weight.
- So, in principle, scientists can define a kilogram, or any other weight, in terms of the amount of electricity needed to counteract the weight (gravitational force acting on a mass).

Planck's constant:

- There is a quantity that relates weight to electrical current, called Planck's constant – named after the German physicist Max Planck and denoted by the symbol h .
- But h is an incredibly small number and to measure it, the research scientist Dr Bryan Kibble built a super-accurate set of scales. The Kibble balance, as it has become known, has an electromagnet that pulls down on one side of the scales and a weight – say, a kilogram – on the other. The electrical current going through the electromagnet is increased until the two sides are perfectly balanced.
- By measuring the current running through the electromagnet to incredible precision, the researchers are able to calculate h to an accuracy of 0.000001%. This breakthrough has paved the way for Le Grand K to be deposed by “die kleine h ”.

Facts for Prelims:

- **General Conference on Weights and Measures (CGPM)** is the highest international body of the world for accurate and precise measurements and comprises of 60 countries including India and 42 Associate Members.

Sources: The Hindu.

Topics: Awareness in space.

1. INDIA'S ANTI-SATELLITE (ASAT) MISSILE

What to study?

- For Prelims: Features of ASAR missile, Low Earth Orbit.
- For Mains: Need, significance and concerns associated with ASAT missile, the issue of space debris.

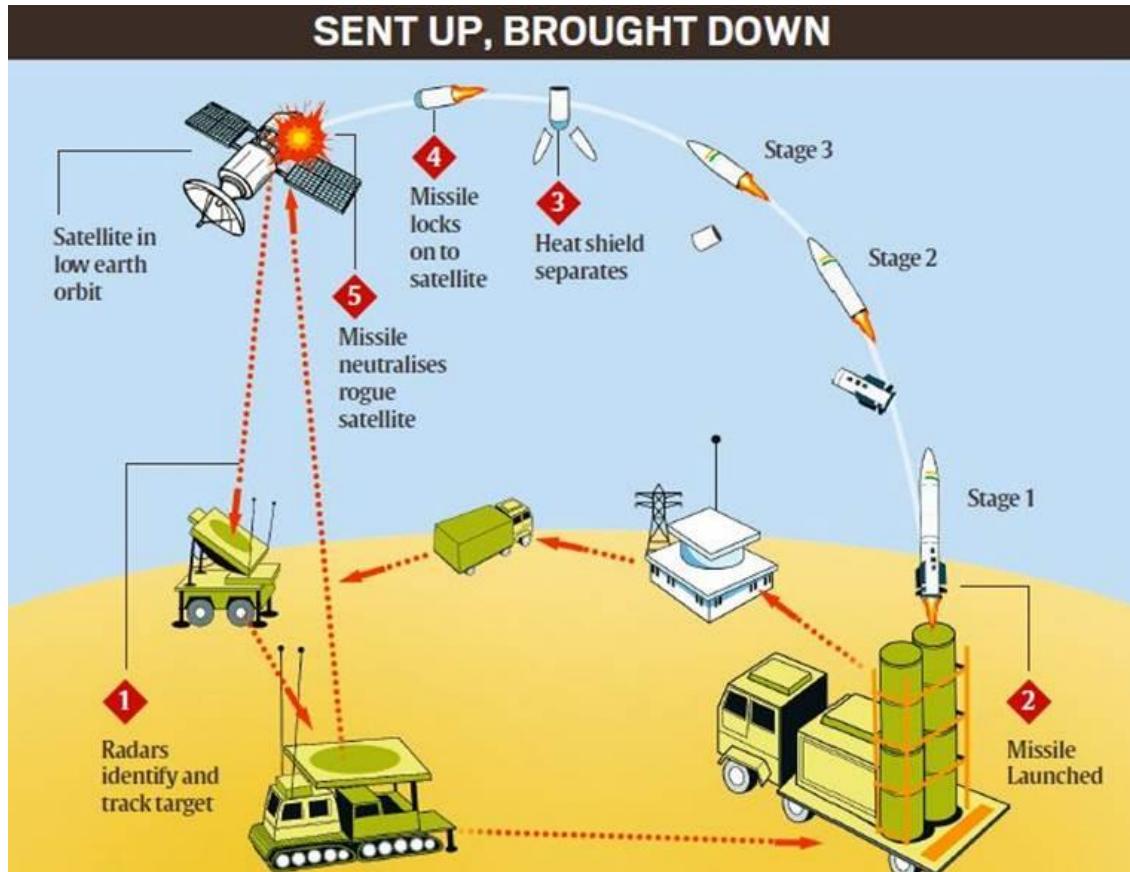
Why in News? Stating that defence and offensive space technologies are being developed with various **aims of spying, gaining control, deactivating service and destroying**, French Envoy in India Alexandre Ziegler has supported India's Anti-Satellite (ASAT) missile test as a response to these growing threats.

What is it?

- **Mission Shakti** is a joint programme of the Defence Research and Development Organisation (DRDO) and the Indian Space Research Organisation (ISRO).
- As part of the mission, an anti-satellite (A-SAT) weapon was launched and targeted an Indian satellite which had been decommissioned. Mission Shakti was carried out from DRDO's testing range in Odisha's Balasore.

Significance:

- **India is only the 4th country to acquire such a specialised and modern capability**, and Entire effort is indigenous. Till now, only the US, Russia and China had the capability to hit a live target in space.



Why do we need such capabilities?

- India has a long standing and rapidly growing space programme.** It has expanded rapidly in the last five years. The Mangalyaan Mission to Mars was successfully launched. Thereafter, the government has sanctioned the Gaganyaan Mission which will take Indians to outer space.
- India has undertaken more than 100 spacecraft missions** consisting of communication satellites, earth observation satellites, experimental satellites, navigation satellites, apart from satellites meant for scientific research and exploration, academic studies and other small satellites. India's space programme is a critical backbone of India's security, economic and social infrastructure.
- The test was done to verify that India has the capability to safeguard our space assets.** It is the Government of India's responsibility to defend the country's interests in outer space.

Raising concerns:

- Outer space has become an "**arena of rivalry between major powers.**" At the same time, there was **common concern on space debris.** Satellites today have to avoid almost 6,00,000 debris of over 1cm travelling at speed faster than a bullet.
- As space gets increasingly crowded, **there is need to regulate space traffic on the lines of air traffic or railways.**

Technologies that can tackle the problem in future are:

- Moving an object out of the way by altering its orbit** is one method of diverting a potential crash, but the sheer amount of debris requires constant observation and prediction – by any means necessary.
- Nasa's Space Debris Sensor** orbits the Earth on the International Space Station. The sensor was attached to the outside of the space station's European Columbus module in December 2017. It will detect millimetre-sized pieces of debris for at least two years, providing information on whatever hits it such as size, density, velocity, orbit and will determine whether the impacting object is from space or a man-made piece of space debris.
- REMOVEdebris**, satellite contain two cubesats that will release simulated space debris so that it can then demonstrate several ways of retrieving them.
- Deorbit mission:** There are two emerging technologies being developed under what's known as the "e.Deorbit" mission to grasp the wayward space junk, or to catch it.
- Other technologies include** moving objects with a powerful laser beam. It is important to start doing that soon, current scientific estimates predict that without active debris removal, certain orbits will become unusable over the coming decades.

What is space debris?

- Space junk is an ever-growing problem with more than 7,500 tonnes of redundant hardware now thought to be circling the Earth. Ranging from old rocket bodies and defunct spacecraft through to screws and even flecks of paint – this material poses a collision hazard to operational missions.
- The rising population of space debris increases the potential danger to all space vehicles, but especially to the International Space Station (ISS), space shuttles, satellites and other spacecraft.

Way ahead:

- Arms race in outer space should not be encouraged. India has always maintained that space must be used only for peaceful purposes. It is against the weaponisation of Outer Space and supports international efforts to reinforce the safety and security of space based assets.
- India believes that Outer space is the common heritage of humankind and it is the responsibility of all space-faring nations to preserve and promote the benefits flowing from advances made in space technology and its applications for all.

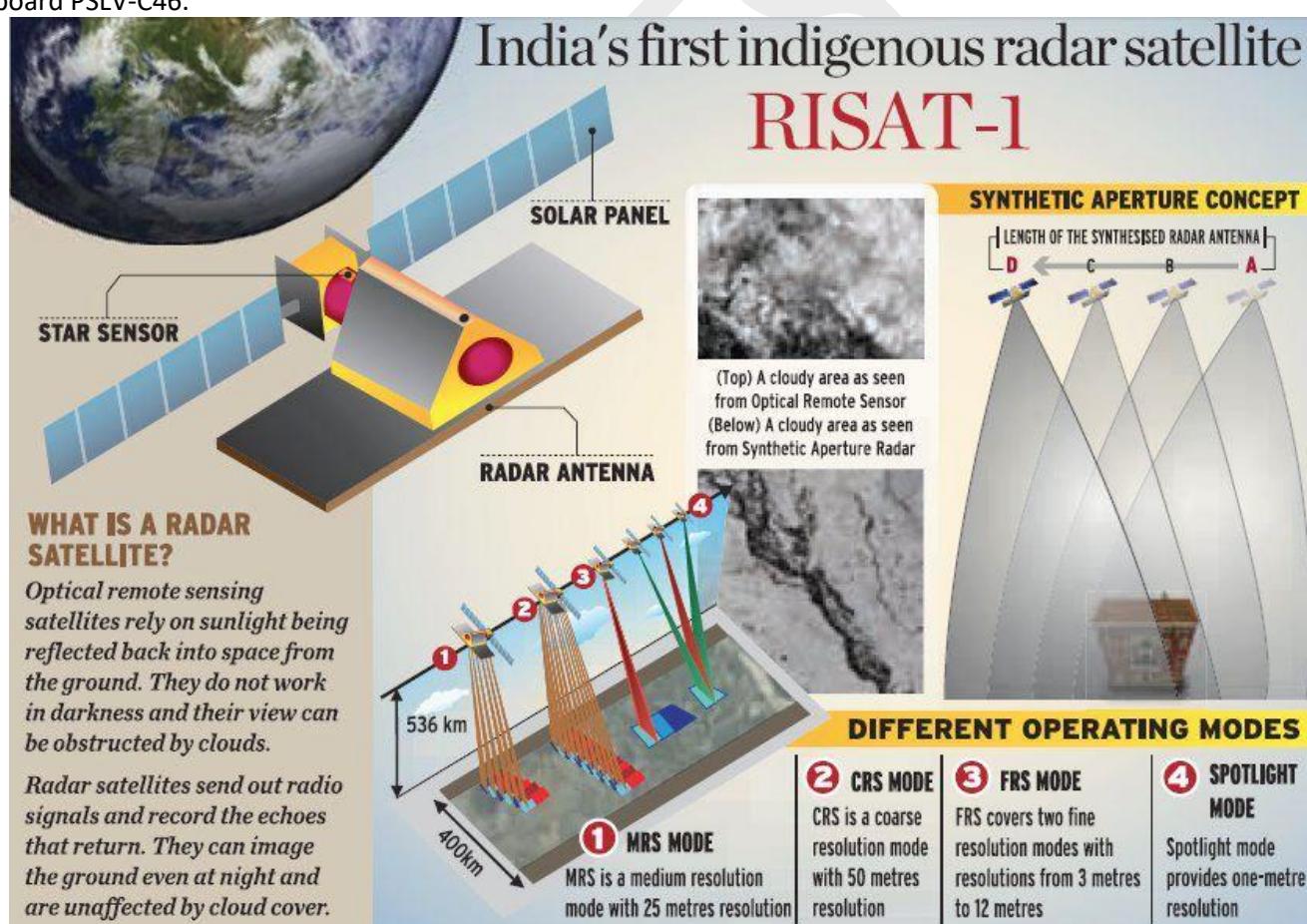
Sources: the hindu.

2. RISAT 2BR1

What to study?

- For prelims and mains: about RISAT 2BR1 satellite- objectives.

Context: India is planning to launch its latest radar imaging satellite RISAT 2BR1 towards the end of May 2019 on board PSLV-C46.



About RISAT:

- The RISAT, which was first deployed in orbit on April 20, 2009 as the RISAT-2, uses **synthetic aperture radars (SAR)** to provide Indian forces with **all-weather surveillance and observation**, which are crucial to notice any potential threat or malicious activity around the nation's borders.

- Following the 2008 Mumbai terror attacks, the launch of RISAT-2 was prioritised over RISAT-1, as its C-band SAR radar was not yet ready and RISAT -2 carried an Israeli-built X-band radar.
- The to-be-deployed RISAT-2BR1 satellite uses the same SAR band and will further improve India's imaging reconnaissance abilities.

Sources: ET.

3. ADITYA- L1 MISSION

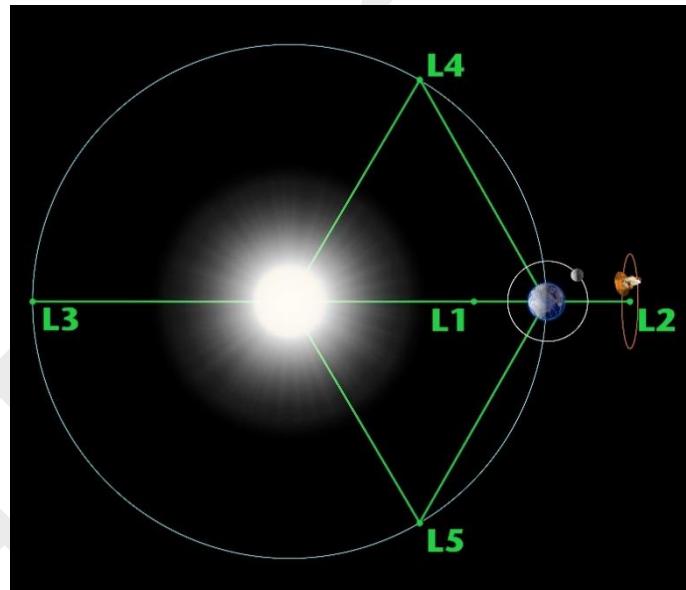
What to study?

- For prelims and mains: Key features, objectives and significance of the mission.

Context: The Indian Space Research Organization is planning to launch Aditya- L1 mission to study the sun early in 2020.

About Aditya- L1 mission:

- What is it?** It is India's first solar mission.
- Objectives:** It will study the sun's outer most layers, the corona and the chromospheres and collect data about coronal mass ejection, which will also yield information for space weather prediction.
- Significance of the mission:** The data from Aditya mission will be immensely helpful in discriminating between different models for the origin of solar storms and also for constraining how the storms evolve and what path they take through the interplanetary space from the Sun to the Earth.
- Position of the satellite:** In order to get the best science from the sun, continuous viewing of the sun is preferred without any occultation/ eclipses and hence, Aditya- L1 satellite will be placed in the halo orbit around the Lagrangian point 1 (L1) of the sun-earth system.



What are Lagrangian points and halo orbit?

- Lagrangian points are the locations in space where the combined gravitational pull of two large masses roughly balance each other. Any small mass placed at that location will remain at constant distances relative to the large masses.
- There are five such points in Sun-Earth system and they are denoted as L1, L2, L3, L4 and L5. A halo orbit is a periodic three-dimensional orbit near the L1, L2 or L3.

Sources:toi.

4. DOUBLE ASTEROID REDIRECTION TEST (DART)

What to study?

- For Prelims and Mains: Key features and significance of DART.

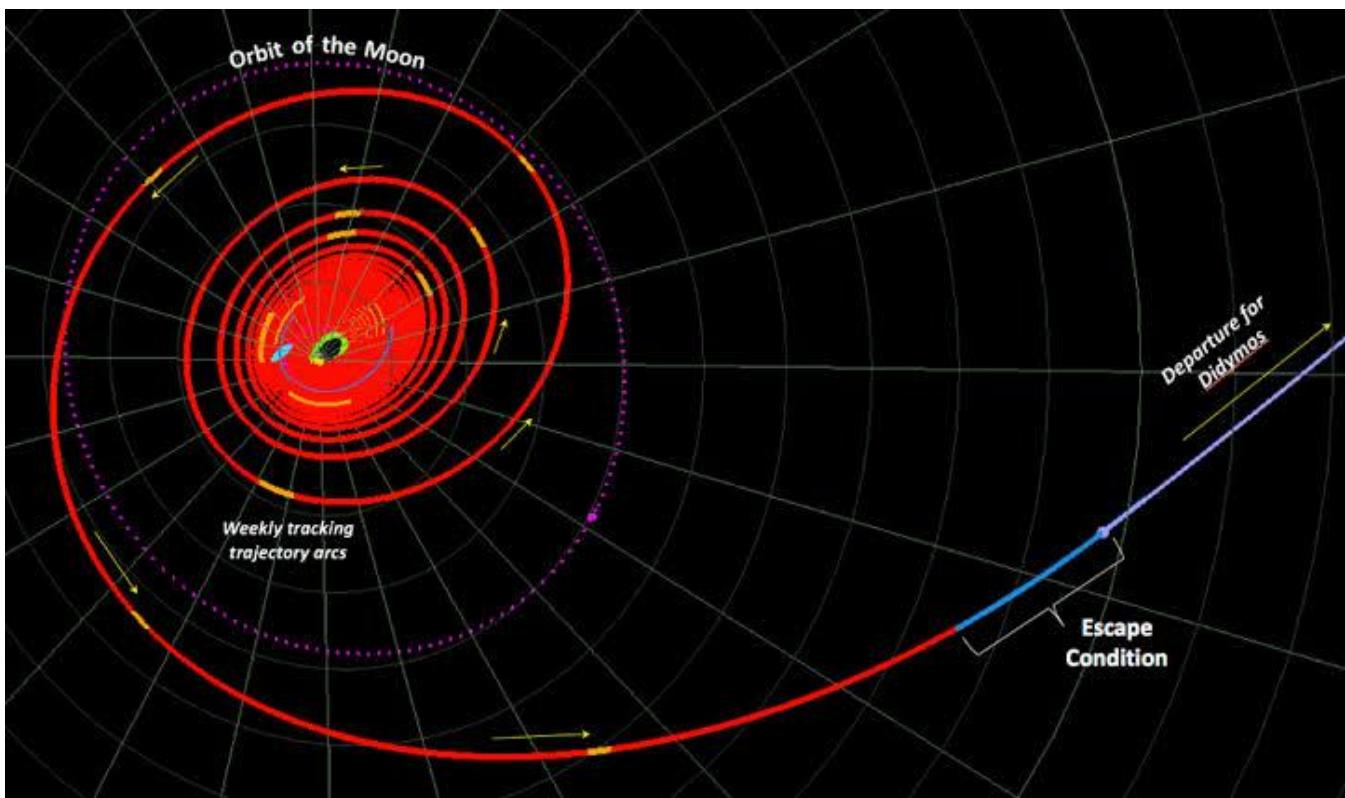
Context: NASA's First Planetary Defense Technology Demonstration to Collide with Asteroid in 2022.

What is it?

- The Double Asteroid Redirection Test, or DART,** is a spacecraft designed to determine whether an asteroid can be redirected with a high-speed collision.
- SpaceX will launch the spacecraft toward **an asteroid named Didymos** about 4 million miles from Earth. It then will ram into the asteroid's small moon at about 13,000 miles per hour.

Significance:

- DART would be NASA's first mission to demonstrate what's known as the kinetic impactor technique – striking the asteroid to shift its orbit – to defend against a potential future asteroid impact.



How it impacts?

- The target for DART is an asteroid that will have a distant approach to Earth in October 2022, and then again in 2024. The asteroid is called Didymos – Greek for “twin” -because it is an asteroid binary system that consists of two bodies: Didymos A, about 780 metres in size, and a smaller asteroid orbiting it called Didymos B, about 160 metres in size.
- DART would impact only the smaller of the two bodies, Didymos B. The Didymos system has been closely studied since 2003. The primary body is a rocky S-type object, with composition similar to that of many asteroids.
- The composition of its small companion, Didymos B, is unknown, but the size is typical of asteroids that could potentially create regional effects should they impact Earth. After launch, DART would fly to Didymos and use an APL-developed onboard autonomous targeting system to aim itself at Didymos B.
- Then the refrigerator-sized spacecraft would strike the smaller body at a speed about nine times faster than a bullet, about six kilometres per second. Earth-based observatories would be able to see the impact and the resulting change in the orbit of Didymos B around Didymos A, allowing scientists to better determine the capabilities of kinetic impact as an asteroid mitigation strategy.
- The kinetic impact technique works by changing the speed of a threatening asteroid by a small fraction of its total velocity, but by doing it well before the predicted impact so that this small nudge will add up over time to a big shift of the asteroid's path away from Earth.

Sources: The Hindu.

5. MODIS (OR MODERATE RESOLUTION IMAGING SPECTRORADIOMETER)

What to study?

- For Prelims: MODIS- objectives and significance.
- For Mains: Greening efforts by China and India, significance.

Context: NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) data shows that China and India are leading the increase in “greening efforts” across the world.

Key findings:

- Global green leaf area has increased by 5% since the early 2000s. This translates to a net increase in leaf area of 2.3% per decade, which is equivalent to adding 5.4×10^6 sq km new leaf area over the 18-year period of the record (2000 to 2017). This is equivalent to the area of the Amazon.
- **China alone accounts for 25%** of the global net increase in leaf area. **India has contributed a further 6.8%.**
- The greening in China is from forests (42%) and croplands (32%) but in India is mostly from croplands (82%) with minor contribution from forests (4.4%).
- With only 2.7% of the global vegetated area, India accounts for 6.8% of the global net increase in leaf area. It is as expected because **most of the land cover type in India is cropland**. Total cereal production in India increased by 26% during the same period.
- **There are only a few forests in India**, and that is why their contribution is small. Data show that since Independence, a fifth of India's land has consistently been under forests.
- The **Forest Survey of India's State of Forest Report 2017** had recorded that forest cover had increased by 6,600 sq km or 0.21% since 2015.

What is MODIS?

- Moderate-Resolution Imaging Spectroradiometer
- Launched in 1999 aboard the EOS AM (Terra); EOS PM (Aqua) followed in 2002
- Monitors 36 spectral bands between 0.4 μm and 14.4 μm
- Images entire Earth every 1-2 days at 1 km resolution



About MODIS:

- **MODIS** (or Moderate Resolution Imaging Spectroradiometer) is a key instrument aboard the Terra (originally known as EOS AM-1) and Aqua (originally known as EOS PM-1) satellites.
- **Terra's orbit around the Earth is timed so that it passes from north to south across the equator in the morning, while Aqua passes south to north over the equator in the afternoon.**
- **Terra MODIS and Aqua MODIS** are viewing the entire Earth's surface every 1 to 2 days, acquiring data in 36 spectral bands, or groups of wavelengths.
- **Significance:** These data will improve our understanding of global dynamics and processes occurring on the land, in the oceans, and in the lower atmosphere. MODIS is playing a vital role in the development of validated, global, interactive Earth system models able to predict global change accurately enough to assist policy makers in making sound decisions concerning the protection of our environment.

Sources: The Hindu.

6. ARTEMIS MISSION

What to study?

- For Prelims and Mains: Key features, objectives and significance of the mission.

Context: NASA's next **mission to the Moon** will be called **Artemis**.

- The mission was named **Artemis** after the **Greek mythological goddess of the Moon** and twin sister to **Apollo**, namesake of the program that sent 12 American astronauts to the Moon between 1969 and 1972.

About Artemis Mission:

- **ARTEMIS** stands for **Acceleration, Reconnection, Turbulence and Electrodynamics of Moon's Interaction with the Sun**.
- **Objective:** It consists of spacecraft to measure what happens when the Sun's radiation hits our rocky moon, where there is no magnetic field to protect it.
- **Background:** The ARTEMIS mission uses two of the five in-orbit spacecraft from another **NASA Heliophysics constellation of satellites (THEMIS)** that were launched in 2007 and successfully completed their mission

earlier in 2010. The ARTEMIS mission allowed NASA to repurpose two in-orbit spacecraft to extend their useful science mission, saving tens of millions of taxpayer dollars instead of building and launching new spacecraft.

Sources: the Hindu.

7. CHANG'E-4

What to study?

- For prelims and mains: key features and significance of the mission, why study far side of the moon?

The infographic is titled "LONG MARCH 3B/E | CHANG'E 4 (LANDER AND ROVER)" and "LAUNCHING: DECEMBER 7TH, 2018 - 12:30 PM EST (17:30 UTC)". It features the CNSA logo and a map of Earth with a red dot over China. The "MISSION" section describes Chang'e 4 as a Chinese lunar exploration mission involving a lander and rover. The "LAUNCHING FROM" section indicates the Xichang Satellite Launch Center in the People's Republic of China. The "THIS WILL BE THE FIRST MISSION TO ATTEMPT SOFT LANDING ON THE FAR SIDE OF THE MOON." section is highlighted. To the right, there are boxes for "MISSION PAYLOAD" (Chang'e 4 (lander and rover)), "ORBIT" (Lunar Orbit), "LAUNCH VEHICLE" (Long March 3B/E), and "MISSION TYPE" (Orbiter, Lander, Lunar Rover). A graphic of the Long March 3B/E rocket is also shown.

Context: Scientists have said they could be a step closer to solving the riddle behind the Moon's formation, unveiling the most detailed survey yet of the far side of Earth's satellite.

- In January, the **Chinese spacecraft Chang'e-4** — named after the moon goddess in Chinese mythology — became the first ever craft to touch down on the far side of the lunar surface.

Key findings:

- China landed its probe in the **Von Karmen Crater in the Aitken Basin** at the Moon's south pole — home to one of the largest impact craters known in the solar system.
- They detected materials such as olivine and low-calcium pyroxene that are rare elsewhere on the surface. Researchers suggest that these materials were ejected from the Moon's upper mantle when it was struck by a meteor.

How was moon born?

- The most widely accepted theory is that moon was born when a massive protoplanet slammed into young Earth, sending plenty of terrestrial building blocks into orbit around it.
- Scientists suspect that the moon was covered in a magma ocean during its very early days. As it progressively cooled and solidified, denser minerals remained in the ocean's depths while less dense minerals floated to the surface. This meant the geochemical compositions of the eventual mantle and crust layers turned out to be distinct from each other.

About the mission:

- Chang'e 4 is the fourth mission in the country's lunar mission series which is being named after the Chinese moon goddess.
- The tasks of the Chang'e-4 probe include low-frequency radio astronomical observation, surveying the terrain and landforms, detecting the mineral composition, and measuring the neutron radiation and neutral atoms to study the environment on the far side of the moon.

Significance of the mission:

- According to experts, landing on the far side of the moon is undoubtedly one of the most challenging missions ever launched by any of the world's superpowers.

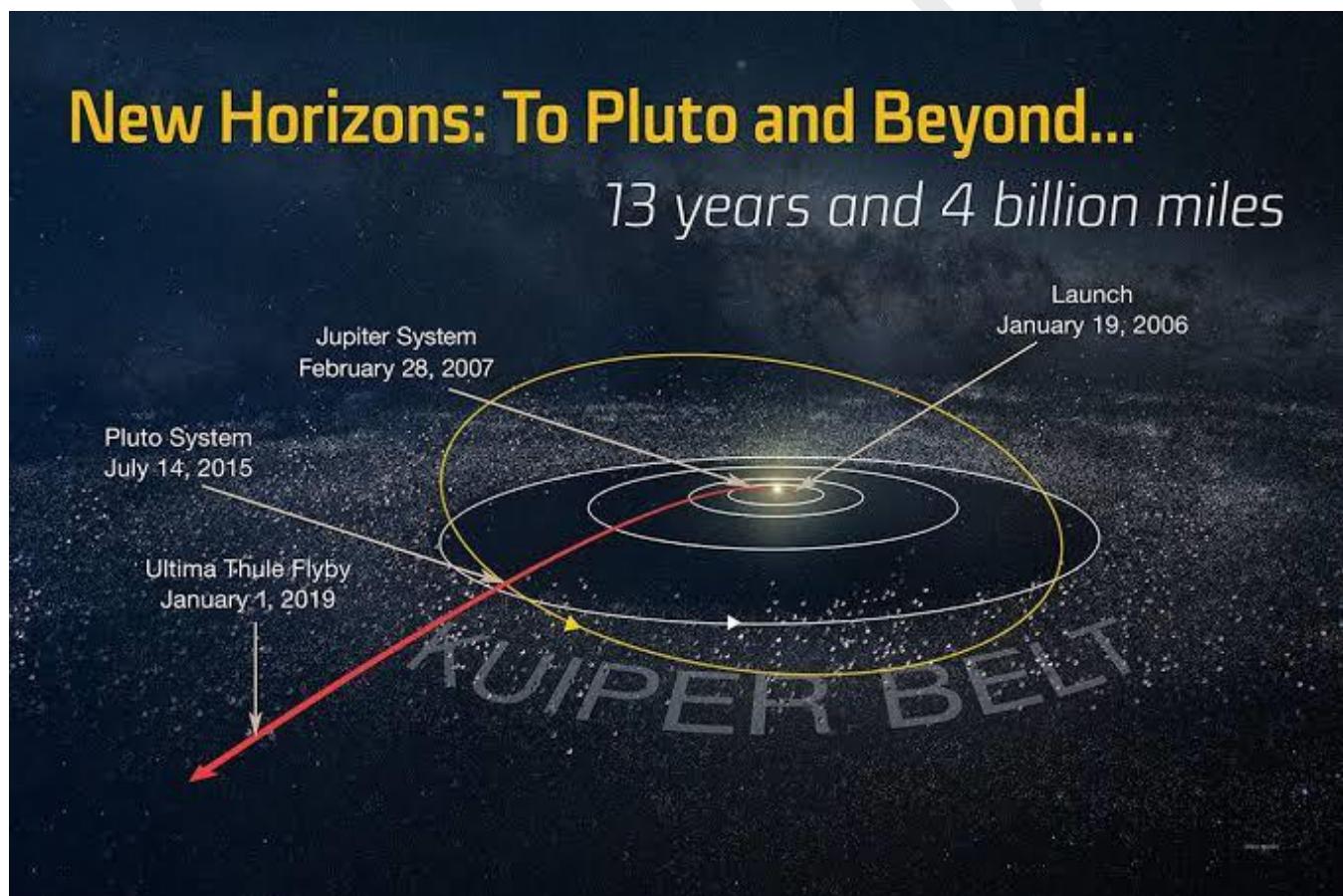
Sources: The Hindu.

8. ULTIMA THULE

What to study?

- For prelims and mains: key facts related to ultimate Thule and new Horizon mission.

Context: NASA has found evidence of a unique mixture of water ice, methanol, and organic molecules on Ultima Thule's surface. This mixture is very different from most icy objects explored previously by spacecraft till date.



About Ultima Thule:

- Located in the **Kuiper belt** in the outermost regions of the Solar system.
- Measures approximately 30 km in diameter, and is irregularly shaped.
- It has a reddish color, probably caused by exposure of hydrocarbons to sunlight over billions of years.
- It belongs to a class of Kuiper belt objects called the “**cold classicals**”, which have nearly circular orbits with low inclinations to the solar plane.

About New Horizons:

- Launched on January 19, 2006 and conducted a six-month-long reconnaissance flyby study of Pluto and its moons in summer 2015.

- The goal of the mission is to understand the formation of the Plutonian system, the Kuiper belt, and the transformation of the early Solar System.

Sources: the Hindu.

9. SEVEN MEGA MISSIONS BY ISRO

What to study?

- For prelims and mains: key features and significance of the missions announced.

Context: The Indian Space Research Organisation (ISRO) has announced its planned seven mega missions which will be conducted over a period of next 10 years.

The seven mega missions include:

- Chandrayaan-2.
- XPoSat (to study cosmic radiation in 2020) and Aditya-L1(to the Sun in 2021).
- Undefined Missions – which include missions which are still in planning stage namely Mangalyaan-2 (or Mars Orbiter Mission-2 in 2022), Lunar Polar Exploration (or Chandrayaan-3 in 2024), Venus mission (in 2023), Exoworlds (exploration outside the solar system in 2028).

About Xposat:

- The X-ray Polarimeter Satellite (or Xposat), is ISRO's dedicated mission **to study polarization**. It will be launched in year 2020.
- It will be a five-year mission and will study cosmic radiation.**
- It will be carrying a payload named '**polarimeter instrument in X-rays**' (POLIX) made by Raman Research Institute. POLIX will study degree and angle of polarisation of bright X-ray sources in energy range 5-30 keV.
- The spacecraft will be placed in a circular 500-700km orbit.

About Aditya- L1 mission:

- What is it?** It is India's first solar mission.
- Objectives:** It will study the sun's outer most layers, the corona and the chromospheres and collect data about coronal mass ejection, which will also yield information for space weather prediction.
- Significance of the mission:** The data from Aditya mission will be immensely helpful in discriminating between different models for the origin of solar storms and also for constraining how the storms evolve and what path they take through the interplanetary space from the Sun to the Earth.
- Position of the satellite:** In order to get the best science from the sun, continuous viewing of the sun is preferred without any occultation/ eclipses and hence, Aditya- L1 satellite will be placed in the halo orbit around the Lagrangian point 1 (L1) of the sun-earth system.

Sources: The Hindu.

10. RISAT-2B

What to study?

- For prelims and mains: key features, objectives and significance of the mission.

Context: ISRO successfully launched **radar imaging satellite RISAT-2B** on-board **PSLV-C46** from Sriharikota.

- RISAT-2B was placed into **an orbit of 555 km with an inclination of 37 degree** to the equator.
- This is the **fourth flight** unit of the **RISAT programme** and it would be used for reconnaissance, strategic surveillance and disaster management.

Key facts:

- It has been developed for **military and general surveillance purposes**. The data will also be used in fields of agriculture, forestry and disaster management support.
- RISAT-2B is equipped with a synthetic aperture radar that can take pictures of the earth during day and night, and also under cloudy conditions.

- With this advanced earth observation satellite, ISRO has introduced a complex new technology. That is a 3.6 metre **unfurlable radial rib antenna**. This is also going to be the technology of the future.
- RISAT-2B is going to RISAT-2**, which was placed in the orbit in 2009. RISAT-2 was RISAT-1's replacement, a microwave remote sensing satellite that was launched in 2012. RISAT-2 was actively used India to monitor activities in camps across the border in Pakistan to thwart infiltration bids by terrorists.

11. ARTEMIS MISSION

What to study?

- For Prelims and Mains: Key features, objectives and significance of the mission.

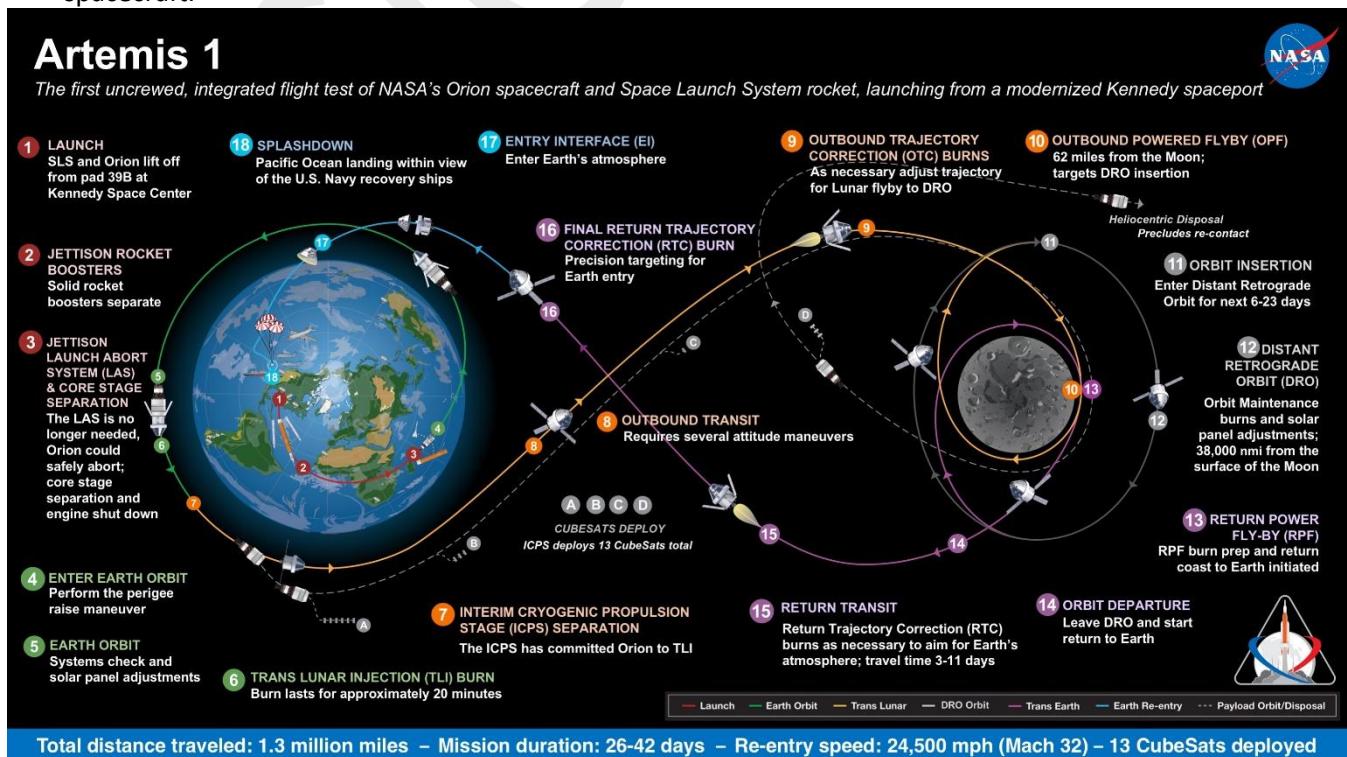
Context: NASA has unveiled the calendar for the “**Artemis**” program that will return astronauts to the Moon for the first time in half a century, including eight scheduled launches and a mini-station in lunar orbit by 2024.

Key facts:

- Artemis 1 will be an uncrewed mission around the Moon planned for 2020.
- Next will come Artemis 2, which will orbit Earth's satellite with a crew around 2022; followed finally by Artemis 3 that will put astronauts on lunar soil in 2024, including the first woman.
- The three will be launched into space by the biggest rocket of all time, the Boeing-led Space Launch System (SLS), which is currently under development but has seen numerous delays and has been criticized in some quarters as a bloated jobs program.

About Artemis:

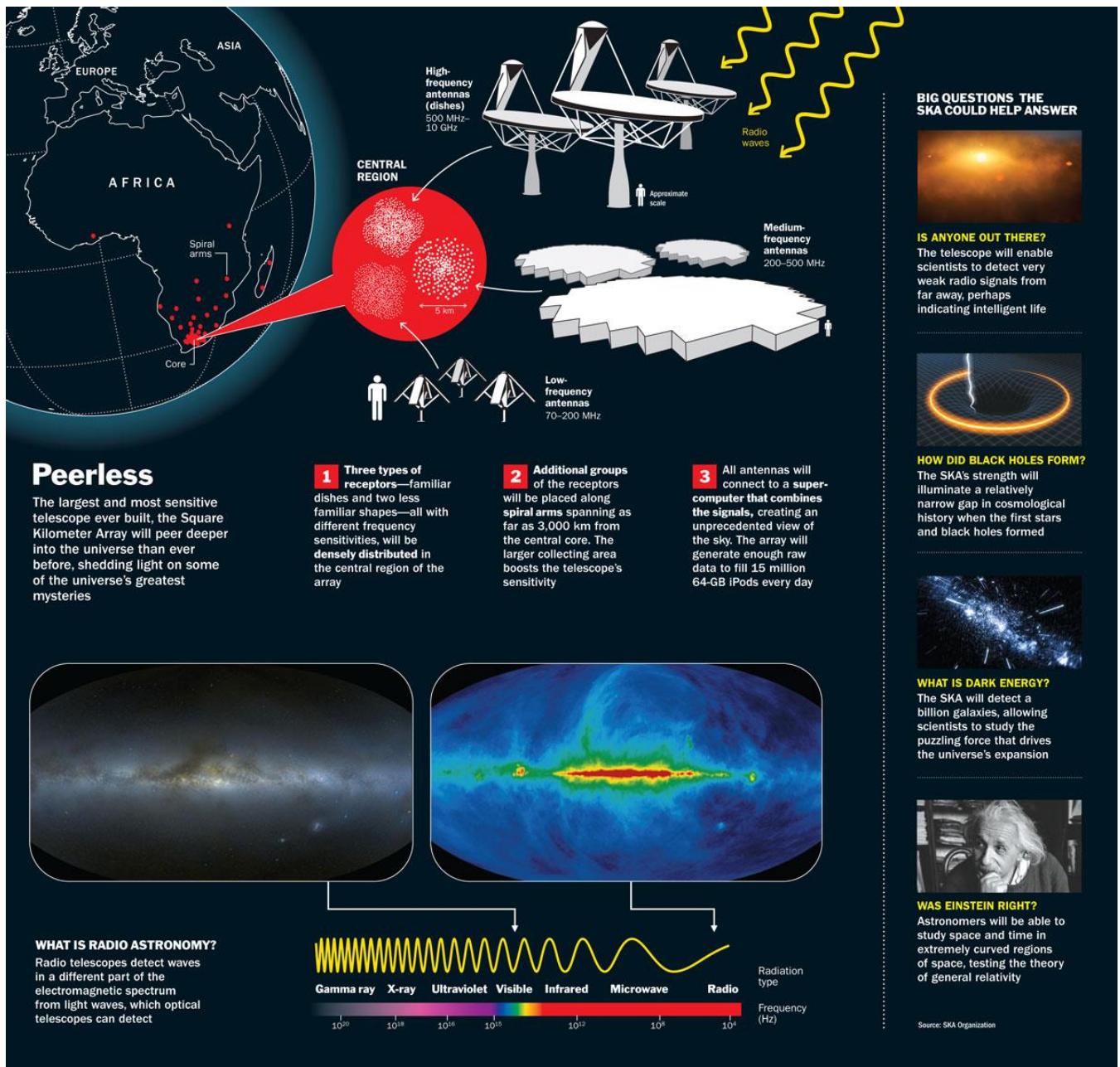
- NASA's next **mission to the Moon will be called Artemis**. ARTEMIS stands for **Acceleration, Reconnection, Turbulence and Electrodynamics of Moon's Interaction with the Sun**.
- The mission was named Artemis after the Greek mythological goddess of the Moon and twin sister to Apollo, namesake of the program that sent 12 American astronauts to the Moon between 1969 and 1972.
- Objective:** It consists of spacecraft to measure what happens when the Sun's radiation hits our rocky moon, where there is no magnetic field to protect it.
- Background:** The ARTEMIS mission uses two of the five in-orbit spacecraft from another NASA Heliophysics constellation of satellites (THEMIS) that were launched in 2007 and successfully completed their mission earlier in 2010. The ARTEMIS mission allowed NASA to repurpose two in-orbit spacecraft to extend their useful science mission, saving tens of millions of taxpayer dollars instead of building and launching new spacecraft.



12. SQUARE KILOMETRE ARRAY (SKA)

What to study?

- For Prelims and Mains: SKA – objectives and key features.



Context: Scientists at Cambridge have finished designing the ‘brain’ of the Square Kilometre Array (SKA), the world’s largest radio telescope.

Key facts:

- It consists of a supercomputer that will process the enormous amounts of data produced by the SKA’s telescopes.
- The total compute power will be around 250 PFlops — that’s 25 per cent faster than IBM’s Summit, the current fastest supercomputer in the world.

Significance:

- When complete, the SKA will enable astronomers to monitor the sky in unprecedented detail and survey the entire sky much faster than any system currently in existence.

The SKA Project:

- The Square Kilometre Array (SKA) project is an international effort to build **the world's largest radio telescope**, with eventually over a square kilometre (one million square metres) of collecting area.
- **Objectives:** The SKA will eventually use thousands of dishes and up to a million low-frequency antennas that will enable astronomers to monitor the sky in unprecedented detail and survey the entire sky much faster than any system currently in existence.
- **Significance:** Its unique configuration will give the SKA unrivalled scope in observations, largely exceeding the image resolution quality of the Hubble Space Telescope. It will also have the ability to image huge areas of sky in parallel a feat which no survey telescope has ever achieved on this scale with this level of sensitivity.
- Whilst **10 member countries are the cornerstone of the SKA**, around 100 organisations across about 20 countries are participating in the design and development of the SKA.
- **Location:** Thousands of SKA antenna dishes will be built in South Africa (in the Karoo), with outstations in other parts of South Africa, as well as in eight African partner countries, namely Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia and Zambia. Another part of the telescope, the low-frequency array, will be built in Western Australia.

Sources: the Hindu.

13. ATHENA AND LISA MISSIONS

What to study?

- For prelims and mains: Athena and LISA- objectives, features and significance.

Context: Researchers have proposed to combine the observing power of two future **ESA missions, Athena and LISA**, to study the effects when two supermassive black holes collide. Currently in the study phase, both missions are scheduled for launch in the early 2030s.

Background:

- **Supermassive black holes**, with masses ranging from millions to billions of Suns, sit at the core of most massive galaxies across the Universe. We don't know exactly how these huge, enormously dense objects took shape, nor what triggers a fraction of them to start devouring the surrounding matter at extremely intense rates, radiating copiously across the electromagnetic spectrum and turning their host galaxies into 'active galactic nuclei'.

Athena, the Advanced Telescope for High-ENergy Astrophysics:

- Athena will be **the largest X-ray observatory ever built**, investigating some of the hottest and most energetic phenomena in the cosmos with unprecedented accuracy and depth.
- **It is designed to answer two fundamental questions:** how supermassive black holes at the centre of galaxies form and evolve, and how 'ordinary' matter assembles, along with the invisible dark matter, to form the wispy 'cosmic web' that pervades the Universe.
- **Objectives:** Athena is going to measure several hundreds of thousands of black holes, from relatively nearby to far away, observing the X-ray emission from the million-degree-hot matter in their surroundings.

LISA, the Laser Interferometer Space Antenna:

- LISA will be **the first space-borne observatory of gravitational waves**—fluctuations in the fabric of spacetime produced by the acceleration of cosmic objects with very strong gravity fields, like pairs of merging black holes.
- LISA will detect **low-frequency gravitational waves**, such as the ones released when two supermassive black holes collide during a merger of galaxies.
- LISA will detect the gravitational waves emitted by the spiralling black holes about a month before their final coalescence, when they are still separated by a distance equivalent to several times their radii.
- **Significance:** Scientists expect that a fraction of the mergers found by LISA, especially those within distances of a few billion light years from us, will give rise to an X-ray signal that can be eventually seen by Athena.

Sources: toi.

Topics: Awareness in the fields of IT, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.

1. CRISPR TECHNOLOGY

What to study?

- For prelims: All about CRISPR technology and how it works?
- For mains: Recent developments, significance of the technology, concerns associated and ethical concerns associated.

Why in news? CRISPR anti-venom: Antidote to world's most venomous sting made with gene editing.

- **Chironex fleckeri** is among the deadliest box jellyfish species, with an explosive sting that causes cardiac arrest in humans. Scientists are still unsure exactly how its venom works. But a team of researchers has managed to develop an antidote to block its venom using the powerful gene-editing tool CRISPR. The drug, **cyclodextrin**, is already tested safe for humans, cheap and readily available.

What is CRISPR-Cas9?

- The clustered, regularly interspaced, short palindromic repeats, or CRISPR/CRISPR-associated protein 9 (Cas9) (CRISPR-Cas9) system has revolutionised genetic manipulations and made gene editing simpler, faster and easily accessible to most laboratories.
- CRISPR technology is basically a gene-editing technology that can be used for the purpose of altering genetic expression or changing the genome of an organism.
- The technology can be used for targeting specific stretches of an entire genetic code or editing the DNA at particular locations.
- CRISPR technology is a simple yet powerful tool for editing genomes. It allows researchers to easily alter DNA sequences and modify gene function.
- Its many potential applications include correcting genetic defects, treating and preventing the spread of diseases and improving crops. However, its promise also raises ethical concerns.

What are Genes and what is gene- editing?

- Genes contain the bio-information that defines any individual. Physical attributes like height, skin or hair colour, more subtle features and even behavioural traits can be attributed to information encoded in the genetic material.
- An ability to alter this information gives scientists the power to control some of these features. **Gene “editing”** — sometimes expressed in related, but not always equivalent, terms like genetic modification, genetic manipulation or genetic engineering — is not new.

How it works?

- CRISPR-Cas9 technology behaves like a **cut-and-paste mechanism on DNA strands** that contain genetic information.
- The specific location of the genetic codes that need to be changed, or “edited”, is identified on the DNA strand, and then, using the Cas9 protein, which acts like a pair of scissors, that location is cut off from the strand. A DNA strand, when broken, has a natural tendency to repair itself.
- Scientists intervene during this auto-repair process, supplying the desired sequence of genetic codes that binds itself with the broken DNA strand.

Concerns:

- **Tampering with the genetic code** in human beings is more contentious. Leading scientists in the field have for long been calling for a “global pause” on clinical applications of the technology in human beings, until internationally accepted protocols are developed.

Way ahead:

- This CRISPR technology is indeed a path-breaking technology, to alter genes in order to tackle a number of conventional and unconventional problems, especially in the health sector. However, experiments and tests to validate its use must be subjected to appropriate scrutiny by the regulators, and their use must be controlled to prevent commercial misuse.

Source: the Hindu.

2. GENETIC STUDIES ON THE PEOPLE OF THE LAKSHADWEEP ARCHIPELAGO

What to study?

- For prelims: CCMB, need for and objectives of Genetic studies.
- For mains: significance and potential of the project, concerns associated.

Context: Genetic studies on the people of the Lakshadweep archipelago was done by a team of **CSIR-Centre for Cellular and Molecular Biology (CCMB)**, for the first time.

Key findings:

- A majority of human ancestry in Lakshadweep is largely derived from South Asia with minor influences from East and West Eurasia.
- There is a close genetic link of Lakshadweep islanders with people from Maldives, Sri Lanka and India.

Background:

- The islands were known to sailors since ancient times and historical documents say that the spread of Buddhism to these islands happened during 6th century B.C. and Islam was spread by in 661 A.D. by Arabians.
- Cholas ruled the islands in 11th century, Portuguese in 16th century, Ali Rajahs in 17th, Tipu Sultan in 18th before the British Raj of 19th century.

Sources: The Hindu.

About Centre for Cellular and Molecular Biology:

- The Centre for Cellular & Molecular Biology (CCMB) is a premier research organization which conducts high quality basic research and trainings in frontier areas of modern biology, and promote centralized national facilities for new and modern techniques in the interdisciplinary areas of biology.
- It was set up initially as a semi-autonomous Centre on April 1, 1977 with the Biochemistry Division of the then Regional Research Laboratory (presently, Indian Institute of Chemical Technology, IICT) Hyderabad.
- It is located in Hyderabad and operates under the aegis of the **Council of Scientific and Industrial Research (CSIR)**.
- It is designated as “**Center of Excellence**” by the Global Molecular and Cell Biology Network, UNESCO.

3. MANAV : HUMAN ATLAS INITIATIVE

What to study?

- For prelims and mains: About the initiative, key features, significance and concerns associated.

Context: Department of Biotechnology (DBT) has launched MANAV : Human Atlas Initiative, towards improving knowledge on human physiology.

Who can participate in this project?

- The project can be signed up by students who are in their final year graduation and above. Students from the fields of biochemistry, biotechnology, microbiology, botany, zoology, bioinformatics, health sciences, systems biologists, pharmacologists and data sciences can associate with this project.
- Even participants having a science background but not necessarily involved in active scientific research can be part of this network.

What is MANAV : Human Atlas Initiative?

- It is a project funded by DBT.
- aims at creating a database network of all tissues in the human body from the available scientific literature.
- It is a project that involves scientific skill development for annotation, science outreach along with handling big data.
- The programme will involve gaining better biological insights through physiological and molecular mapping, develop disease models through predictive computing and have a wholistic analysis and finally drug discovery.

Why is MANAV important?

- So far, researchers and students have had little or no expertise in reading scientific literature and develop or build further information on the same. This platform will impart key skills to the student community to read classified scientific literature, in this case, on individual tissue-basis, and perform annotation and curation.
- Since all the information generated will pass through multiple levels of reviews, it will be an Atlas or a reliable collection on human body tissues. This collated data can be useful for both future researchers and parallelly, to the clinicians and drug developers, who finally handle human bodies in disease conditions.

What are the applications of information generated through MANAV?

- The aim of the project remains to **understand and capture the human physiology in two stages – in a normal stage and while in a disease stage**. Such a database on individual tissues, once ready, can come handy in tracing the causes of a disease, understanding specific pathways and ultimately decode the body's disease stage linked to tissues and cells. The teams will also study any potent elements or molecules that have never been used in the form of drugs, to target the specific cells or tissues.

Sources: Indian express.

4. CCMB SCIENTISTS SEQUENCE ASIATIC LION GENOME

What to study?

- For prelims: What is genome sequencing? About asiatic lion and CCMB.
- For mains: Significance of the project.

Context: For the first time, the entire genome of Asiatic lion has been sequenced by scientists from **CSIR-Centre for Cellular and Molecular Biology, Hyderabad**.

- The objective is **to understand the species at DNA level and study if there are any specific problems with regard to adaptability to environment or behaviour vis-à-vis other big cats**.

About Asiatic Lion:

- IUCN Red List Status: **Endangered**
- Listed in Schedule I of Wildlife (Protection) Act 1972, in Appendix I of Convention on International Trade in Endangered Species (CITES).
- At present the **only home** of Asiatic lion is **Gir National Park** and Wildlife Sanctuary in Gujarat.
- The population of the endangered Asiatic lion is very low — only 523 animals are present in the Gir forests.

Need and significance:

- This firsthand information would help researchers to better **understand the evolution of Asiatic lions and also make possible comparative analysis with other big cats**.
- The genome sequencing would enable scientists **to develop specific markers to study population genetics (the differences at the gene level within a population)** and get newer insights into its population status and subsequent management.
- The study will **enable better disease and population management of the endangered big cat by identifying characteristics which are specific to Asiatic lions**.

Sources: The Hindu.

5. RADAR AND ITS OPERATION

Context: Recently, there was a controversy about a statement made by Prime Minister Narendra Modi, ostensibly making a connection between cloud cover and the efficiency of Radar.

What is a radar?

- In simplest terms, a radar comprises of a transmitter which sends **radio waves** along specific directions. The signals are reflected off the target which are used to construct an image of the target. If the target is moving at a specific velocity, there is a **shift in the frequency of the signal** which can be used to identify the target speed. As the received signal is just above the noise floor, a number of factors can influence the radar system and rainfall and clouds can certainly influence the measured signal.

Impact of weather conditions:

- Although radio waves are transparent to weather conditions like fog, clouds and rain, **change in weather conditions can influence scattering and overall propagation**. The presence of moisture in air can influence propagation of signal in space.
- Radar bands in general, operate over broad frequency ranges. Radars operating at high frequencies are not significantly affected by change in weather conditions. **However, when the weather conditions are extreme, they can find it hard to detect a fighter aircraft zooming at very high speeds**.
- According to a report by **Rand Corporation for US Air Force**, for a dense cloud, the attenuation of the signal could be 0.1 dB/km for X band radar. It implies signal attenuation by a factor of 10 if the target is 50 Km from the source. The attenuation could increase by a factor of 10 if there is rainfall at the rate of 25 cm/hr.

- According to **Meneghini et al. (1986)**, signal attenuation by cloud and precipitation is a serious problem associated with airborne or spaceborne millimetre wave operation. **Lhermitte (1990)** wrote in the Journal of Atmospheric And Oceanic Technology, that at 15 GHz the attenuation coefficient is 0.12 dB per mm per hour of rain intensity. It implies that if the rain intensity is 1 cm/hr, the attenuation of signal power can be in the range of 1.2 dB or approximately 31%. For a 30 GHz signal, the attenuation under heavy tropic rain could be in the range of 30 dB (a factor of 1,000). Besides rain, **lightning-based scattering can also attenuate radar signals over short periods which can open new opportunities for fighter aircraft.**
- In fact, attenuation of radio waves is widely used in measuring rain intensity and moisture content. Below 1 GHz, the attenuation is not that significant, but heavy rains, clouds and lightning effects can still make some impact on the measurement process.

Conclusion:

- To sum up, Modi's statement does hold strong scientific basis which can be corroborated by existing research on the subject. The X band radar is significantly attenuated by rains, clouds and fog and related climatic conditions. For lower bands, the attenuation is less significant, but in high-speed warfare, slight change in conditions can offer huge leverage.

Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.

1. NAMAMI GANGE

What to study?

- For Prelims: Key features of the project, About Namami Gange Programme.
- For Mains: Significance of the project and issues associated with the cleaning of river Ganga.

Context: 10 of the 100 sewage infrastructure projects commissioned after 2015 under the **Namami Gange mission**, according to records.

Background:

- Commissioning of sewage treatment plants (STP) and laying sewer lines are at the heart of the mission to clean the Ganga. Nearly Rs. 23,000 crore has been sanctioned of the Rs. 28,000 crore outlay for sewage management work. River-front development, cleaning ghats and removing trash from the river — the cosmetic side of the mission — make up about for Rs. 1,200 crore of the mission outlay.

Main Pillars of the Namami Gange Programme are:

- Sewerage Treatment Infrastructure
- River-Surface Cleaning
- Afforestation
- Industrial Effluent Monitoring
- River-Front Development
- Bio-Diversity
- Public Awareness
- Ganga Gram

About Namami Gange Programme:

- Namami Gange Programme – is an umbrella programme which **integrates previous and currently ongoing initiatives by enhancing efficiency, extracting synergies and supplementing them with more comprehensive & better coordinated interventions**. Government of India is supplementing the efforts of the state governments in addressing the pollution of river Ganga by providing financial assistance to the states.
- Need:** Each day, more than 500 million liters of wastewater from industrial sources are dumped directly into Ganga. In many places, this wastewater entering the rivers is completely raw, completely untreated.

Its implementation has been divided into:

- Entry-Level Activities (for immediate visible impact),
- Medium-Term Activities (to be implemented within 5 years of time frame) and
- Long-Term Activities (to be implemented within 10 years).

About NMCG: National Mission for Clean Ganga, endeavors to deploy best available knowledge and resources across the world for Ganga rejuvenation. Clean Ganga has been a perennial attraction for many international countries that have expertise in river rejuvenation.

Sources: the hindu.

2. UK PARLIAMENT DECLARES CLIMATE CHANGE EMERGENCY

What to study?

- For prelims and mains: what does this mean, rationale behind, significance and implications.

Context: A national climate emergency has been declared by the UK Parliament. The UK is the **first national government to declare such an emergency**.

- This proposal, which demonstrates the will of the Commons on the issue but does not legally compel the government to act, was approved without a vote.

What is a climate emergency?

- There is no single definition of what that means but many local areas say they want to be **carbon-neutral by 2030**. It's a much more ambitious target than the UK government's, which is to reduce carbon emissions by 80% (compared to 1990 levels) by 2050.

Why declare an emergency?

- The United Nations says we could have just 11 years left to limit a climate change catastrophe. It's not just about reducing carbon emissions on a local scale, but also raising awareness about climate change and trying to convince MPs so that changes can be made.
- The national government needs to declare an emergency and put resources in place to enable councils to help reduce carbon emissions. It's the first step to radical action.

Way ahead:

- With the planet to experience further warming from the heat held by the oceans, there is increasing international focus on meeting the United Nation's Paris Agreement which was signed by 197 countries in 2016. This ground-breaking agreement has the ambitious global aim of preventing global temperatures from reaching 2°C above pre-industrial levels (the late nineteenth century) by 2100, and ideally should be no more than 1.5°C.
- A report by the Intergovernmental Panel on Climate Change (the IPCC) has suggested that meeting this target means annual global carbon emissions must effectively halve between now and 2030, and then fall to zero by 2050. This is a target the UK opposition party Labour are now calling for.

Sources: The Hindu.

3. ARSENIC CONTAMINATION

What to study?

- For Prelims: Arsenic contamination- state- wise level of contamination.
- For Mains: Concerns associated and government efforts to prevent water pollution.

Why in News? Arsenic is toxic to almost all life forms, but now researchers at the University of Washington have discovered that some microbes in the Pacific Ocean not only tolerate the stuff, but actively breathe it. The discovery has implications for how life may adapt to a changing climate, as well as where we might find it on other planets.

Relevant topic:

Arsenic in groundwater:

- Arsenic in ground water is a **geogenic contaminant** i.e. caused by natural geologic processes.
- Concerns: **Incidence of high arsenic in groundwater reported from various parts of the country, particularly in the Ganga- plains** is a serious threat to the health of human being.
- Arsenic occurrences in ground water in these areas is highly sporadic in nature and all the sources in these areas are not necessarily contaminated.

Key facts:

- Arsenic is naturally present at high levels in the groundwater of a number of countries.
- Arsenic is highly toxic in its inorganic form.

- Contaminated water used for drinking, food preparation and irrigation of food crops poses the greatest threat to public health from arsenic.
- Long-term exposure to arsenic from drinking-water and food can cause cancer and skin lesions. It has also been associated with cardiovascular disease and diabetes. In utero and early childhood exposure has been linked to negative impacts on cognitive development and increased deaths in young adults.

Measures:

- Technological options to combat arsenic menace, in groundwater, to ensure supply of arsenic free water, in the affected areas can be in-situ remediation of arsenic from aquifer system, ex-situ remediation of arsenic from tapped groundwater by arsenic removal technologies, use of surface water source as an alternative to the contaminated groundwater source, tapping alternate safe aquifers for supply of arsenic free groundwater or combination of above techniques.

What's the difference between organic arsenic and inorganic arsenic?

- Atoms of arsenic bond with other elements to form molecules — if carbon is one of these elements, then the arsenic compound is an organic compound. If there is no carbon present, then the arsenic compound is in an inorganic compound.
- **Inorganic arsenic is a known human carcinogen** — it is this form of arsenic that is linked with increased risks of cancer and other health effects.

Sources: the hindu.

4. GLOBAL ECOSYSTEM ASSESSMENT

What to study?

- For Prelims: The report and its key findings.
- For Mains: Concerns, reasons for the decline in biodiversity and measures needed.

Context: The first-ever **Global Assessment Report on Biodiversity and Ecosystem Services by Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)** has been released.

- We are witnessing the loss of biodiversity at rates never before seen in human history. Nearly a million species face extinction if we do not fundamentally change our relationship with the natural world.

About the report:

- The Global Assessment Report on Biodiversity and Ecosystem Services is termed as the first-ever such comprehensive report. It took three years for a group of 145 expert authors from 50 countries to prepare this report based on more than 15,000 scientific and government documents. It primarily looked or analysed the impact of economic development on nature and ecosystems.

Key findings:

- **Nature is declining globally at rates unprecedented in human history** — and the rate of species extinctions is accelerating with grave impacts on people around the world now likely,
- **One million animal and plant species are under extinction.** More to it, thousands of these would extinct within decades.
- Since the beginning of the last century (1900), availability of native species in most of the land-based habitats has declined by 20 per cent. Similarly, 40 per cent of the amphibian species are threatened with extinction.
- If one tracks back extinction of species to the 16th century, 680 vertebrate species have been pushed into extinction since then, while 9 per cent of all domesticated breeds of mammals used for food and agriculture went extinct by 2016. Add to it, 1,000 more such breeds are under threat of extinction.
- Almost 33 per cent of reef-forming corals and more than a third of all marine mammals are threatened. Ecosystems, species, wild populations, local varieties and breeds of domesticated plants and animals are shrinking, deteriorating or vanishing. The essential, interconnected web of life on Earth is getting smaller and increasingly frayed.
- **Reasons:** This loss is a direct result of human activity and constitutes a direct threat to human well-being in all regions of the world.

- **Human-induced loss in ecosystems:** Three-quarters of the land-based environment and about two-thirds of the marine environment have been significantly altered by human actions, says the assessment. Nearly 75 per cent of all freshwater resources are now used for crop and livestock rearing activities.
- **Impacts:** productivity in 23 per cent of global land has reduced due to land degradation. Up to \$577 billion in annual global crops are at risk from pollinator loss and 100-300 million people are at increased risk of floods and hurricanes because of loss of coastal habitats and protection.
- Human activity severely threatens biodiversity and ecosystem functions worldwide. About 1 million species are facing extinction. If nothing changes many of these could be gone within just decades.
- But nature is vital to all aspects of human health. We rely on natural systems, not only for food, energy, medicine and genetic resources, but also for inspiration, learning and culture.
- The report also reveals the loss of biodiversity and ecosystem function is much less pronounced on lands managed by Indigenous peoples and local communities.
- It also recognises the significant role of Indigenous knowledge, governance systems and culturally-specific worldviews which adopt a stewardship approach to managing natural systems.
- The report identified agriculture, forestry and urbanisation as the number one reason for biodiversity loss in land-based ecosystems and rivers.
- In the sea, fishing has had the greatest impact on biodiversity and is exacerbated by changes in the use of the sea and coastal lands.
- These factors are aggravated by underlying social values, such as unsustainable consumption and production, concentrated human populations, trade, technological advances, and governance at multiple scales.

Need of the hour:

- The IPBES Global Assessment provides unequivocal evidence that we need biodiversity for human survival and well-being. To stem unprecedented species decline the assessment sets out the actions governments, the private sector and individuals can take.
- If we are to halt the continued loss of nature, then the world's legal, institutional and economic systems must be reformed entirely. And this change needs to happen immediately.

What must be done?

The Global Assessment puts forward these next, urgent steps:

- redefine human well-being beyond its narrow basis on economic growth
- engage multiple public and private actors
- link sustainability efforts across all governance scales
- elevate Indigenous and local knowledge and communities.
- Strengthen environmental laws.
- Take serious precautionary measures in public and private endeavours.
- Governments must recognise indivisibility of society and nature, and govern to strengthen rather than weaken the natural world.
- Indigenous and local communities need to be included and supported more than ever before.

What is IPBES?

- The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body, established by member States in 2012. The objective of IPBES is to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.

The work of IPBES can be broadly grouped into four complementary areas:

- **Assessments:** On specific themes (e.g. "Pollinators, Pollination and Food Production"); methodological issues (e.g. "Scenarios and Modelling); and at both the regional and global levels (e.g. "Global Assessment of Biodiversity and Ecosystem Services").
- **Policy Support:** Identifying policy-relevant tools and methodologies, facilitating their use, and catalyzing their further development.
- **Building Capacity & Knowledge:** Identifying and meeting the priority capacity, knowledge and data needs of our member States, experts and stakeholders.

- The world include biodiversity considerations across all sectors and jurisdictions to prevent further degradation of natural systems.

Sources: the hindu.

5. ENVIRONMENT IMPACT ASSESSMENT (EIA)

What to study?

- For Prelims: Kalasa- Banduri project.
- For Mains: All about EIA.

Context: Karnataka Neeravari Nigam Ltd., which is executing the **Kalasa-Banduri project** worth nearly Rs. 850 crore, has claimed that the drinking water project is out of the purview of **Environment Impact Assessment (EIA)**.

About Kalasa- Banduri project:

- The Kalasa-Banduri Nala is a project undertaken by the Government of **Karnataka** to **improve drinking water supply** to the Districts of Belagavi, Dharwad and Gadag.
- It involves building across Kalasa and Banduri, two tributaries of the **Mahadayi river** to divert 7.56 TMC of water to the Malaprabha river, which supplies the drinking water needs of the districts.

About EIA:

- Environment Impact Assessment (EIA) is a formal process used to predict the environmental consequences of any development project. Environment Impact Assessment in India is statutory backed by the **Environment Protection Act in 1986**, which contains various provisions on EIA methodology and process.
- Rationale behind EIA:** EIA looks into various problems, conflicts and natural resource constraints which may not only affect the viability of a project but also predict if a project might harm to the people, their land, livelihoods and environment. Once these potential harmful impacts are predicted, the EIA process identifies the measures to minimize those impacts.
- The objective of the EIA is to:** Identify the environmental, social and economic impacts of a project prior to taking a decision on its implementation. Mitigation of harmful impacts and maximizes the beneficial effects.
- Once the assessment is complete, the EIA findings are communicated to all stakeholders** viz. developers, investors, regulators, planners, politicians, affected communities etc. On the basis of the conclusion of EIA process, the government can decide if a project should be given environment clearance or not. The developers and investors can also shape the project in such a way that its harms can be mitigated and benefits can be maximized.

Sources: the Hindu.

6. EL NIÑO

What to study?

- For Prelims and Mains: ENSO- El Nino and La Nia- causes, effects and impacts, global climate change and ENSO cycle.

Context: El Niños have become stronger and their pattern too has been changing, the world's first 400-year-long seasonal record of El Niño created by Australian scientists has revealed. Traditional El Niño events have also become more intense in nature.

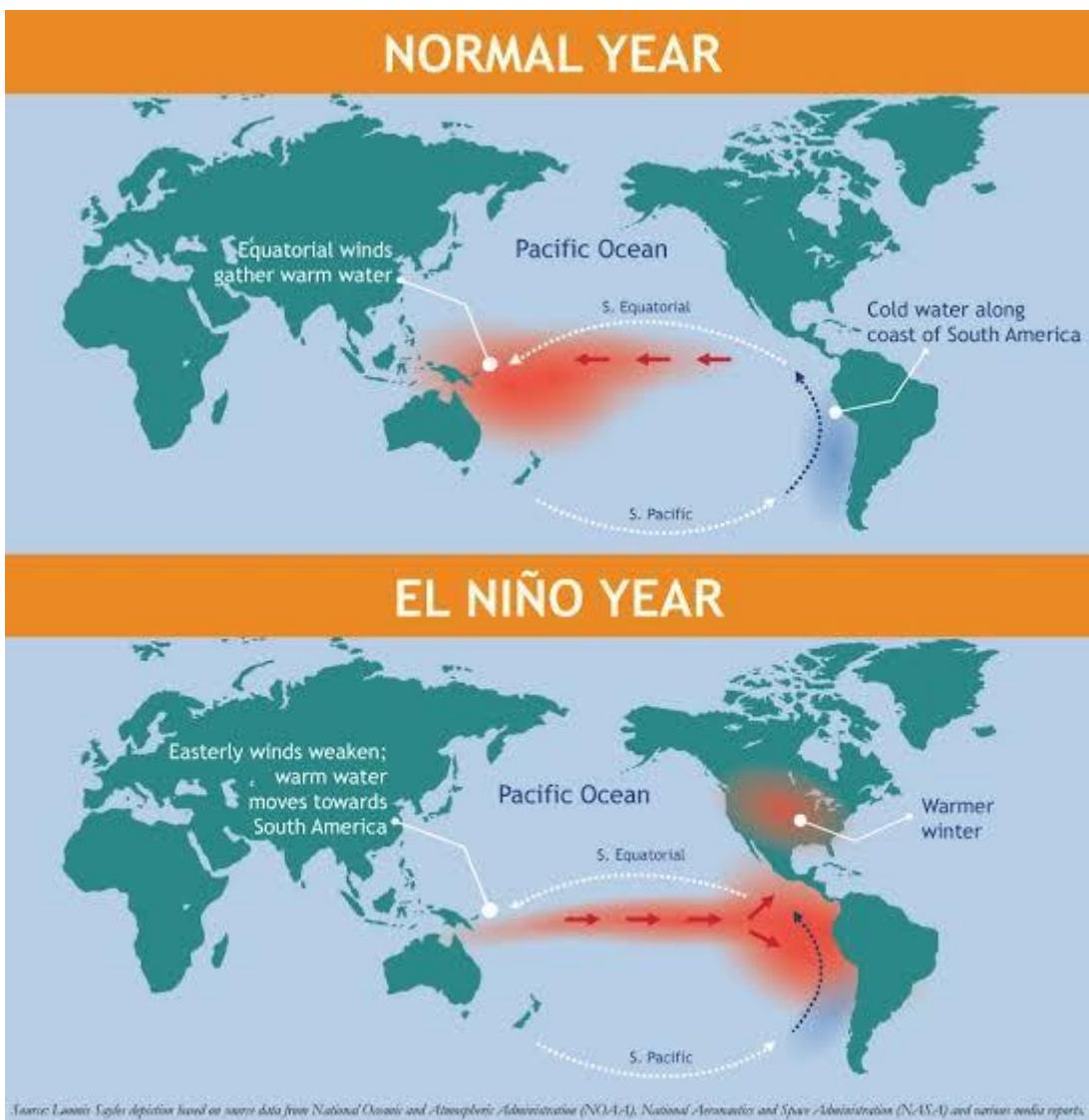
Key findings:

- The trend of El Niño in the last four centuries shows a variation in El Niño types. There has been a simultaneous increase in central Pacific events and a decrease in eastern Pacific ones since the late twentieth century.
- This leads to a ratio of central to eastern Pacific events that is unusual in a multi-century context. Compared to the past four centuries, the most recent 30-year period includes fewer, but more intense, eastern Pacific El Niño events.

What revealed this?

- The El Niño trends of the past have been studied on the basis of **coral cores** spanning the Pacific Ocean.
- It was made possible because **coral cores** — like tree rings — have centuries-long growth patterns and contain isotopes that can tell us a lot about the climate of the past. Hence, the key to unlocking the El Niño record was understanding that coral records contained enough information to identify seasonal changes in the tropical Pacific Ocean.

- There has been an unprecedented increase in the number of El Niños forming in the central Pacific over the past 30 years, compared to all 30-year periods in the past 400 years.
- At the same time, the stronger eastern Pacific El Niños were the most intense El Niño events ever recorded, according to both, the 100-year-long instrumental record and the 400-year-long coral record.



Significance:

- An understanding of El Niños in the past and present based on this four-century-old trend needs to be explored further by India for modelling, predicting and planning for future El Niños and their wide-ranging impacts.

What is ENSO?

- ENSO is nothing but El Niño Southern Oscillation. As the name suggests, it is an irregular periodic variation of wind and sea surface temperature that occurs over the tropical eastern Pacific Ocean. ENSO affects the tropics (the regions surrounding the equator) and the subtropics (the regions adjacent to or bordering the tropics). The warming phase of ENSO is called El Niño, while the cooling phase is known as La Niña.

What is El Niño?

- El Niño is a climatic cycle characterised by high air pressure in the Western Pacific and low air pressure in the eastern. In normal conditions, strong trade winds travel from east to west across the tropical Pacific, pushing the warm surface waters towards the western Pacific. The surface temperature could witness an increase of 8 degrees Celsius in Asian waters. At the same time, cooler waters rise up towards the surface in the eastern Pacific on the coasts of Ecuador, Peru, and Chile. This process called upwelling aids in the development of a rich ecosystem.

What causes El Nino?

- El Nino sets in when there is anomaly in the pattern. The westward-blowing trade winds weaken along the Equator and due to changes in air pressure, the surface water moves eastwards to the coast of northern South America. The central and eastern Pacific regions warm up for over six months and result in an El Nino condition. The temperature of the water could rise up to 10 degrees Fahrenheit above normal. Warmer surface waters increase precipitation and bring above-normal rainfall in South America, and droughts to Indonesia and Australia.

Sources: The Hindu.

7. BENGAL TIGERS MAY NOT SURVIVE CLIMATE CHANGE

What to study?

- For prelims and mains: Threats posed by climate change to Sundarbans and Bengal tigers, measures needed.

Context: The survival of around five lakh land species is in question because of threats to their natural habitat, finds a UN report.

Key findings of the report:

- Vulnerable:** The cats are among 500,000 land species whose survival is in question because of threats to their natural habitats.
- Main Causes:** Climate change and rising sea levels.
- Threats to Sundarbans: 70% of Sunderbans now is just a few feet above sea level, and grave changes are in store for the region.
- Subsequent impact on tigers:** Changes wrought by a warming planet will be “enough to decimate” the few hundred or so Bengal tigers remaining there. By 2070, there will be no suitable tiger habitats remaining in the Bangladesh Sundarbans.
- Threats to tiger population:** Since the early 1900s, **habitat loss, hunting and the illegal trade of animal parts** have decimated the global population of tigers from around 100,000 to fewer than 4,000.
- In the Bangladesh Sundarbans,** a spike in extreme weather events and changing vegetation will further reduce the population. And as the Sundarbans flood, confrontations may grow between humans and tigers as the animals stray outside their habitat in search of new land.

Background:

- The Sundarbans, 10,000 square kilometres of marshy land in Bangladesh and India, hosts the world’s largest mangrove forest and a rich ecosystem supporting several hundred animal species, including the Bengal tiger.

Concerns:

- The latest finding adds to existing studies that offered similarly grim predictions for wildlife in the Sundarbans.
- In 2010, **the World Wide Fund for Nature** projected that a sea level rise of 11 inches could reduce the number of tigers in the Sundarbans by 96% within a few decades.
- Beyond sea level rise account for 5.4% to 11.3% of the projected habitat loss in 2050 and 2070.
- In October, a landmark report from the UN found that **if greenhouse gas emissions continued at the current rate, the atmosphere would warm as much as 1.5C above preindustrial levels by 2040**. That increase would have significant consequences for food chains, coral reefs and flood-prone areas. It may also disproportionately affect poorer, densely packed countries like Bangladesh, which is home to 160 million people.
- In an analysis of decades of tidal records, scientists found that **high tides were rising much faster than the global average in Bangladesh**, which sits in the Ganges Delta, a complex network of rivers and streams.

About Sundarbans:

- The Sundarbans comprises hundreds of islands and a network of rivers, tributaries and creeks in the delta of the Ganga and the Brahmaputra at the mouth of the Bay of Bengal in India and Bangladesh.
- Located on the southwestern part of the delta, the **Indian Sundarban constitutes over 60% of the country’s total mangrove forest area**.

- It is the **27th Ramsar Site in India**, and with an area of 4,23,000 hectares is now the largest protected wetland in the country.
- The Indian Sundarban, also a **UNESCO world heritage site**, is home to the Royal Bengal Tiger. It is also home to a large number of “rare and globally threatened species, such as the critically endangered northern river terrapin (Batagur baska), the endangered Irrawaddy dolphin (Orcaella brevirostris), and the vulnerable fishing cat (Prionailurus viverrinus).”
- Two of the world’s four horseshoe crab species, and eight of India’s 12 species of kingfisher are also found here. Recent studies claim that the Indian Sundarban is home to 2,626 faunal species and 90% of the country’s mangrove varieties.

Source: The Hindu.

8. UNEP REPORT ON SAND AND SUSTAINABILITY

What to study?

- For prelims and mains: Uncontrolled sand mining and its effects, what needs to be done?

Context: The UNEP has released a report, “**Sand and Sustainability: Finding new solutions for environmental governance of global sand resources.**”

Problem is highlighted in the report:

- **Sand consumption globally has been increasing** and we are extracting it at rates exceeding natural replenishment rates.
- **Sand and gravel are the second largest natural resources extracted** and traded by volume after water, but among the least regulated.
- While **85% to 90% of global sand demand is met from quarries**, and sand and gravel pits, the 10% to 15% extracted from rivers and sea shores is a severe concern due to the environmental and social impacts.
- A 40-50 billion tonne of crushed rock, sand and gravel is extracted from quarries, pits, rivers, coastlines and the marine environment each year. The **construction industry consumes over half of this, and will consume even more in the future.**
- **China and India head the list of critical hotspots for sand extraction impacts** in rivers, lakes and on coastlines.

Cause for concern:

- Their extraction often results in river and coastal erosion and threats to freshwater and marine fisheries and aquatic ecosystems, instability of river banks leading to increased flooding, and lowering of ground water levels.
- Most large rivers of the world have lost between half and 95% of their natural sand and gravel delivery to ocean the report says.
- The damming of rivers for hydro-electricity production or irrigation is reducing the amount of sediment flowing downstream.
- This broken replenishment system exacerbates pressures on beaches already threatened by sea level rise and intensity of storm-waves induced by climate change, as well as coastal developments.
- There are also indirect consequences, like loss of local livelihoods — an ironic example is that construction in tourist destinations can lead to depletion of natural sand in the area, thereby making those very places unattractive — and safety risks for workers where the industry is not regulated.

What needs to be done?

- Better spatial planning and reducing unnecessary construction — including speculative projects or those being done mainly for prestige — thereby making more efficient use of aggregates.
- Investing in infrastructure maintenance and retrofitting rather than the demolish and rebuild cycle, embracing alternative design and construction methods, even avoiding use of cement and concrete where possible, and using green infrastructure.
- Need for large-scale multipronged actions from global to local levels, involving public, private and civil society organisations. This will mean building consensus, defining what success would look like, and reconciling

policies and standards with sand availability, development imperatives and standards and enforcement realities.

Sources: The Hindu.

9. WORLD MIGRATORY BIRD DAY (WMBD)

What to study?

- For prelims and mains: WMBD- theme and significance, features of CMS.

Context: The World Migratory Bird Day (WMBD) 2019 is being observed on 11 May 2019. It helps to raise global awareness about threats faced by migratory birds, their ecological importance, and need for international cooperation to conserve them.

- The first WMBD was celebrated in 2006.
- Organized By:** The Convention on Migratory Species (CMS), the African-Eurasian Waterbird Agreement (AEWA) together with Environment for the Americas (EFTA).
- Theme:** "Protect Birds: Be the Solution to Plastic Pollution!".

When is it celebrated?

- On 26 October 2017 in the margins of the CMS COP12 in Manila, Environment for the Americas (EFTA), the Convention on Migratory Species (CMS) and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), announced an innovative partnership to increase awareness of the plight of migratory birds around the world.
- The new partnership formally unites two of the world's largest bird education campaigns, International Migratory Bird Day (IMBD) and World Migratory Bird Day (WMBD) in a bid to strengthen global recognition and appreciation of migratory birds and highlight the urgent need for their conservation.
- Starting in 2018, the new joint campaign adopts the single name of "World Migratory Bird Day" and major events to celebrate the day will be organized twice a year, on the second Saturday in May and in October.

What are migratory species? Why protect them?

- Migratory species are those animals that move from one habitat to another during different times of the year, due to various factors such as food, sunlight, temperature, climate, etc.
- The movement between habitats, can sometimes exceed thousands of miles/kilometres for some migratory birds and mammals. A migratory route can involve nesting and also requires the availability of habitats before and after each migration.

Sources: The Hindu.

About CMS/Bonn Convention of UNEP

- In order to protect the migratory species throughout their range countries, a Convention on Conservation of Migratory Species (CMS), has been in force, under the aegis of United Nations Environment Programme.
- Also referred to as the Bonn Convention, it provides a global platform for the conservation and sustainable use of migratory animals and their habitats and brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range.
- Classification of species:** Under this convention, migratory species threatened with extinction are listed on Appendix I and Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention.
- CMS is the only global and UN-based intergovernmental organization established exclusively for conservation and management of terrestrial, aquatic and avian migratory species throughout their range.

10. HERBIVORE CENSUS IN GIR FOREST

What to study?

- For prelims and mains: the census, its significance and related key facts.

Context: Every summer, the Forest Department of Gujarat conducts a Herbivore Census in Gir forest. This year's exercise is of particular significance because it is the last Herbivore Census ahead of next year's Lion Census, which is a once-in-five-years exercise.

- **Coverage:** The **Herbivore Census covers** ungulates such as spotted deer, blue bulls (nilgais), sambar, Indian gazelles (chinkaras), four-horned antelopes (choshinga) and wild boars, as well as Indian langurs and peafowl.
- **Why it matters?** Wild ungulates and langurs are the main prey of Asiatic lions, the endangered species whose only wild population in the world is surviving in the 22,000 sq km Greater Gir area. A count provides a sense of the available of the prey base for lions as well as other predators like leopards, hyenas and wolves. A strong prey base can reduce depredation of livestock by lions and can reduce man-animal conflict.
- **In 2013-14, the last Herbivore Census** before the previous Lion Census, the total count of all herbivores was 1.32 lakh, higher than the about 1.25 lakh counted in 2012-13.
- **Why it's done in summer?** During summer, foliage is reduced to a minimum in dry and deciduous tropical forests, which affords the best visibility for conducting a census. Also, wild animals concentrate around water points, which in Gir include 450 artificial ones filled by the Forest Department.

What has been the herbivore population trend in recent years?

- Since 1974, the population of herbivorous in Gir forest has been on the rise. In 2013, the population of ungulates was estimated to be 1,26,893 or 76.49 animals per square kilometres. That translates to 8000 kg of biomass available to carnivorous, very close to the levels in Serengeti National Park in Tanzania. The population of ungulates was 1,07,172 in 2010. Incidentally, lion census is due in May next year.

Sources: Indian Express.

11. THE MENACE OF WASTEWATER

What to study?

- For prelims and mains: the menace of waste water, concerns and measures needed.

Context: The **National Green Tribunal** has directed 18 States and 2 Union Territories to submit their respective **action plans on utilisation of treated wastewater** to reduce pressure on the groundwater resources across the country.

- The states and UTs were ordered to submit their action plan within 3 months time to the **Central Pollution Control Board (CPCB)**.

Background:

- The **action plan** includes establishing a monitoring mechanism for coordination with the local bodies, which will be overseen by the chief secretaries of all the states and UTs.

Concerns and challenges:

- **Almost 80% of water supply flows back into the ecosystem as wastewater.** This can be a critical environmental and health hazard if not treated properly but its proper management could help the water managers in meeting the city's water demand.
- Currently, India has the capacity to treat approximately 37% of its wastewater, or 22,963 million litres per day (MLD), against a daily sewage generation of approximately 61,754 MLD according to the 2015 report of the Central Pollution Control Board.
- Moreover, most sewage treatment plants do not function at maximum capacity and do not conform to the standards prescribed.

Need of hour:

- A paradigm shift from “use and throw – linear” to a “use, treat, and reuse – circular” approach is needed to manage wastewater. That said, investment in wastewater treatment has associated risks as well. It is therefore important to understand the underlying social, political, technical, and financial factors that will drive, facilitate, and sustain wastewater management interventions in India.

Critical factors for making an informed decision:

- Drivers for initiating wastewater management,
- Policies and regulations,
- Access to technology and finance,
- Scale of intervention,

- Management strategy and institutional framework,
- Public perception,
- Phases of deployment, and
- A framework for participatory approach.

Way ahead:

- The 2017 United Nations' Water Development Programme's World Water Development Report (WWDR) – Wastewater: The Untapped Resource makes clear that we can no longer afford this disconnect.
- As we pursue the **2030 Agenda for Sustainable Development**, the 663 million people around the world who still lack improved sources of drinking water put into perspective the urgency of our mission.
- **Sustainable Development Goal (SDG) 6** specifically focusses on water and sanitation, with Target 3 addressing water quality, but the availability of water is a cross-cutting issue upon which every aspect of development hinges.
- Put simply, water is life, and without a sustained commitment to improving and benefiting from effective wastewater management, that precious resource, and the billions of lives it nourishes, are in peril.

Sources: Indian Express.

12. EVOLUTION OF CRZ NORMS

- **Why in News?** The Supreme Court has recently ordered the demolition of some constructions in Kerala's Ernakulum, for violating Coastal Regulation Zone (CRZ) norms.

What are CRZ rules and why do we need them?

- CRZ Rules govern human and industrial activity close to the coastline, in order to protect the fragile ecosystems near the sea. The Rules, **mandated under the Environment Protection Act, 1986**, were first framed in 1991.
- They sought to restrict certain kinds of activities, like large constructions, setting up of new industries, storage or disposal of hazardous material, mining, or reclamation and bunding, within a certain distance from the coastline.
- **Regulation zone:** In all CRZ Rules, the regulation zone has been defined as the area up to 500 m from the high-tide line.
- **Restrictions:** Several kinds of restrictions apply, depending on criteria such as the population of the area, the ecological sensitivity, the distance from the shore, and whether the area had been designated as a natural park or wildlife zone.
- **Need:** Areas immediately next to the sea are extremely delicate, home to many marine and aquatic life forms, both animals and plants, and are also threatened by climate change, they need to be protected against unregulated development.

New CRZ Rules 2018:

- Removed certain restrictions on building, streamlined the clearance process, and aimed to encourage tourism in coastal areas.
- For the so-called **CRZ-III (Rural) areas**, two separate categories have been stipulated.
- In the densely populated rural areas (CRZ-IIIA) with a population density of 2,161 per sq km as per the 2011 Census, the no-development zone is now 50 m from the high-tide level, as against the 200 m stipulated earlier.
- In the CRZ-IIIB category (rural areas with population density below 2,161 per sq km) continue to have a no-development zone extending up to 200 m from the high-tide line.
- The new Rules have a **no-development zone of 20 m** for all islands close to the mainland coast, and for all backwater islands in the mainland.

Key facts:

- While the **CRZ Rules are made by the Union Environment Ministry, implementation is supposed to be done by state governments through their Coastal Zone Management Authorities.**
- The states are also supposed to frame their own coastal zone management plans in accordance with the central Rules.

Why are states reluctant to implement?

- Despite several amendments, states found the 1991 Rules to be extremely restrictive. They complained that if applied strictly, the Rules would not allow simple things like building decent homes for people living close to the coast, and carrying out basic developmental works.
- The 1991 Rules also created hurdles for showpiece industrial and infrastructure projects such as the POSCO steel plant in Odisha and the proposed Navi Mumbai airport in the first decade of the new century.

13. CLIMATE WARMING AND CONCERNS ASSOCIATED

Context: A recent paper in the Proceedings of the National Academy of Sciences of the U.S.A. shows that global warming during the past half century has contributed to a differential change in income across countries.

Concerns and challenges:

- **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services** has reported that, worldwide, the abundance of species has reduced by at least one-fifth, about a million species are under threat of extinction in the next few decades and 85% of wetlands have been lost.
- There are numerous instances of **elite networks that are taking advantage of the situation to consolidate their control**. These networks often involve governments actively or quiescently colluding with fossil fuel companies, agro-industrial elites, financial elites and other big businesses that are ignoring climate change and making a fast buck often even from the growing disasters.
- The **Arctic is melting rapidly** and the tenor of the recent discussions among Arctic countries suggests that even as increasing glacier melt is responsible for opening up shipping in the area, **superpowers are angling to access wealth from the oil, gas, uranium and precious metals in the region**.
- **Policies and commitments make it clear that most governments and businesses are not interested in dealing with the climate and ecological crises**. They will certainly not give these the central attention they deserve in these times of an emergency; they barely even acknowledge them.
- The atmosphere now has concentrations of over 415 parts per million (ppm) of carbon dioxide, compared to 280 ppm in pre-industrial times.

Need of the hour:

- We are now at a stage where we need major overhaul of our lifestyles and patterns of consumption. The U.K. Parliament became the first recently to declare a climate emergency. It remains to be seen if appropriate actions will follow this declaration.

14. INDIA COOLING ACTION PLAN (ICAP)

Context: The government's launch of the India Cooling Action Plan (ICAP) on March 8 is a bold response to addressing India's future cooling needs while neutralising its impacts.

Significance:

- India is the first country in world to develop such a document (ICAP), which addresses cooling requirement across sectors and lists out actions which can help reduce the cooling demand.
- The overarching goal is to provide sustainable cooling and thermal comfort for all while securing environmental and socio-economic benefits for the society.

The goals emerging from the suggested interventions stated in ICAP are:

- Reduction of cooling demand across sectors by 20% to 25 % by year 2037-38.
- Reduction of refrigerant demand by 25% to 30% by year 2037-38.
- Reduction of cooling energy requirements by 25% to 40% by year 2037-38.
- Training and certification of 100,000 servicing sector technicians by the year 2022-23, in synergy with Skill India Mission.
- Recognize "cooling and related areas" as a thrust area of research under the national S&T Programme.

The broad objectives of the India Cooling Action Plan include:

- Assessment of cooling requirements across sectors in next 20 years and the associated refrigerant demand and energy use.
- Map the technologies available to cater the cooling requirement including passive interventions, refrigerant-based technologies and alternative technologies such as not-in-kind technologies.
- Suggest interventions in each sector to provide for sustainable cooling and thermal comfort for all.
- Focus on skilling of RAC service technicians.
- Develop an R&D innovation ecosystem for indigenous development of alternative technologies.

The following benefits would accrue to society over and above the environmental benefits:

- Thermal comfort for all – provision for cooling for EWS and LIG housing.
- Sustainable cooling – low GHG emissions related to cooling.
- Doubling Farmers Income – better cold chain infrastructure – better value of products to farmers, less wastage of produce.
- Skilled workforce for better livelihoods and environmental protection.
- Make in India – domestic manufacturing of air-conditioning and related cooling equipment's.
- Robust R&D on alternative cooling technologies – to provide the push to innovation in a cooling sector.

15. BRS CONVENTIONS

What to study?

- For prelims and mains: key features and significance of BRO conventions, outcomes of recent meeting.

Context: The 14th meeting of the Conference of the Parties (COP) to Basel Convention (COP 14) was held along with the 9th meeting of the COP to Rotterdam Convention and the 9th meeting of the COP to Stockholm Convention in Geneva, Switzerland.

- **Theme:** “Clean Planet, Healthy People: Sound Management of Chemicals and Waste”.

Overview:

Outcomes of the recent meeting:

- In **Basel Convention on Control of Transboundary Movement of Hazardous Wastes and their Disposal**, two important issues were mainly discussed and decided i.e. technical guidelines on e-waste and inclusion of plastic waste in Prior Informed Consent (PIC) procedure.
- In **Stockholm Convention on Persistent Organic Pollutants (POP)**, COP decided to list “Dicofol” in Annex A (Elimination) without any exemption. The “PFOA”, (Perfluorooctanoic acid) was also listed with some exemptions in Annex A of Stockholm Convention.
- In **Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade**, two new chemicals named Phorate and HBCD (hexabromocyclododecane) were added in list for mandatory Prior Informed Consent (PIC) procedure in international trade.

BRS Conventions – Brief Background:

- The Basel, Rotterdam and Stockholm (BRS) Conventions are multilateral environmental agreements, which share the **common objective of protecting human health and the environment from hazardous chemicals and wastes**.
- **Aim:** This “**synergies process**” aims to strengthen the implementation of the three conventions at the national, regional and global levels by providing coherent policy guidance, enhancing efficiency in the provision of support to Parties to the Conventions, reducing their administrative burden and maximising the effective and efficient use of resources at all levels, while maintaining the legal autonomy of these three multilateral environmental agreements.

Sources: TOI.

(B) Basel Convention:

- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was created to protect people and the environment from the negative effects of the inappropriate management of hazardous wastes worldwide. It is the most comprehensive global treaty dealing with hazardous waste materials throughout their lifecycles, from production and transport to final use and disposal.

(R) Rotterdam Convention:

- The Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous Chemicals and Pesticides in international trade provides Parties with a first line of defence against hazardous chemicals. It promotes international efforts to protect human health and the environment as well as enabling countries to decide if they want to import hazardous chemicals and pesticides listed in the Convention.

(S) Stockholm Convention:

- The Stockholm Convention on Persistent Organic Pollutants is a global treaty to protect human health and the environment from highly dangerous, long-lasting chemicals by restricting and ultimately eliminating their production, use, trade, release and storage.

16. NOT ALL ANIMALS MIGRATE BY CHOICE CAMPAIGN LAUNCHED

Context: UN Environment India and Wildlife Crime Control Bureau (WCCB) of India have launched an awareness campaign ‘Not all animals migrate by choice’.

About the campaign:

- The campaign aims at creating awareness and garnering public support for the protection and conservation of wildlife, prevention of smuggling and reduction in demand for wildlife products.
- The campaign also complements worldwide action on illegal trade in wildlife through UN Environment’s global campaign, Wild for Life.
- In the first phase of the campaign, Tiger, Pangolin, Star Tortoise and Tokay Gecko have been chosen as they are highly endangered due to illegal trading in International markets.

Need:

- Illegal wildlife trade is driving species to the brink of extinction. A thriving industry with organized wildlife crime chains spreading across the world, in India, illegal trade in wildlife has seen a sharp rise. Therefore, there is an urgent need for awareness, action and stringent enforcement of laws to put an end to all illegal wildlife trade threatening biodiversity and conservation in the wild.

About WCCB:

- Wildlife Crime Control Bureau is a **statutory multi-disciplinary body** established by the Government of India under the Ministry of Environment and Forests, to combat organized wildlife crime in the country.

Under Section 38 (Z) of the Wild Life (Protection) Act, 1972, it is mandated:

- to collect and collate intelligence related to organized wildlife crime activities and to disseminate the same to State and other enforcement agencies for immediate action so as to apprehend the criminals.
- to establish a centralized wildlife crime data bank.
- co-ordinate actions by various agencies in connection with the enforcement of the provisions of the Act.
- assist foreign authorities and international organization concerned to facilitate co-ordination and universal action for wildlife crime control.
- capacity building of the wildlife crime enforcement agencies for scientific and professional investigation into wildlife crimes and assist State Governments to ensure success in prosecutions related to wildlife crimes.
- advise the Government of India on issues relating to wildlife crimes having national and international ramifications, relevant policy and laws.
- Assist and advise the Customs authorities in inspection of the consignments of flora & fauna as per the provisions of Wild Life Protection Act, CITES and EXIM Policy governing such an item.

17. ISSUES RELATED TO STUBBLE BURNING

What to study?

- For Prelims and Mains: What is stubble burning, concerns associated, why is it practised and what needs to be done to contain its practice?

Context: The Punjab Pollution Control Board (PPCB) data shows that the State had from April 15 to May 16 witnessed 5,981 incidents of stubble burning as against 9,900 cases reported during the corresponding period in 2018. The incidents of burning dipped compared to last year.

What is stubble burning?

- Stubble burning is a common practice followed by farmers in the neighboring states Haryana and Punjab to prepare fields for sowing of wheat in November as there is little time left between the harvesting of paddy and sowing of wheat.
- **Concerns:** Stubble burning results in emission of harmful gases such **carbon dioxide, sulphur dioxide, nitrogen dioxide** along with **particulate matter**.

Advantages of stubble burning:

- It quickly clears the field and is the cheapest alternative.
- Kills weeds, including those resistant to herbicide.
- Kills slugs and other pests.
- Can reduce nitrogen tie-up.

What's the issue?

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

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

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

Sources: The Hindu.

18. 'ROOM FOR THE RIVER' PROJECT

What to study?

- For prelims and mains: key features and significance of the project.

Context: At his recent European tour, Kerala Chief Minister Pinarayi Vijayan had made a stop at Noordward in the Netherlands, the site of the '**Room for the River**' project.

About the project:

- The flagship project of the **Dutch government** is centered around **protecting areas adjoining rivers from routine flooding and improving water management systems in delta regions**.
- The basic premise of the 'Room for the River' project is essentially **to provide more space for the water body so that it can manage extraordinary high water levels during floods**. The project, implemented at over 30 locations across the Netherlands and funded at a cost of 2.3 billion euros, **involves tailor-made solutions for each river**.
- **Among the nine measures** which define the project are lowering the flood plain, deepening the summer bed, strengthening of dykes, relocation of dykes, reducing the height of the groynes, increasing the depth of the side channels and removing obstacles.
- A key aspect of the project is also **to improve the surroundings of the river banks through fountains and panoramic decks**. The landscapes are altered in a way that they turn into natural sponges which can accommodate excess water during floods.

Need:

- The Netherlands has historically been prone to flooding of rivers due to its low elevation. Much of the country lies below the sea level. The country is located in the delta region of several major rivers like the Rhine, the Meuse and the Scheldt.
- In fact, the rise of water levels in the sea and rivers due to the effects of climate change is one of the major challenges facing the Dutch. But over the years, the country's expert water management techniques and creation of independent local government bodies for flood control have borne praise across the world.

Relevance for Kerala:

- The LDF government in Kerala believes the project and its foundational ideals can be replicated in Kuttanad, the state's rice bowl located below the sea-level. In the floods last year, Kuttanad and adjoining regions in Kottayam and Alappuzha districts remained submerged for weeks. Since the major rivers in the state empty out into Kuttanad, there's a need for long-term comprehensive solutions on the lines of the Dutch project to prevent flooding in the region.

Sources: Indian express.

19. EFFECTS OF PLASTICS ON ENVIRONMENT

What to study?

- For prelims and mains: effects of plastics on the environment and the need for global consensus on limiting its use.

Context: Newly published research calculates that **across their lifecycle, plastics account for 3.8 per cent of global greenhouse gas emissions**. That's almost double the emissions of the aviation sector. If it were a country, the "Plastic Kingdom" would be the **fifth-highest emitter in the world**.

Why worry about this?

- Demand is set to rise, too. At 380m tonnes a year, we produce 190 times more plastic than we did in 1950. If the demand for plastic continues to grow at its current rate of four per cent a year, emissions from plastic production will reach 15 per cent of global emissions by 2050.

Plastic across the lifecycle:

- More than 99 per cent of plastics are manufactured from petrochemicals, most commonly **from petroleum and natural gas**. These raw materials are refined to form ethylene, propylene, butene, and other basic plastic building blocks, before being transported to manufacturers.
- The production and transport of these resins requires an awful lot of energy — and therefore fuel. **Greenhouse gas emissions also occur during the refining process itself** — the "cracking" of larger hydrocarbons from petrochemicals into smaller ones suitable for making plastic releases carbon dioxide and methane.

Contribution to greenhouse emissions:

- According to the study, **about 61% of total plastic greenhouse gas emissions comes from the resin production and transport stage**. A further 30 per cent is emitted at the product manufacturing stage. The vast majority of these emissions come from the **energy required to power the plants that turn raw plastic materials into the bottles, bin bags and bicycle helmets we use today**. The remainder occurs as a result of chemical and manufacturing processes – for example, the production of plastic foams uses HFCs, particularly potent greenhouse gases.
- The remaining **carbon footprint occurs when plastics are thrown away**. Incineration releases all of the stored carbon in the plastic into the atmosphere, as well as air pollutants such as dioxins, furans, mercury and polychlorinated biphenyls, which are toxic and damaging to human health.
- As plastics take centuries to degrade, disposal in landfill makes only a small contribution to emissions in theory. However, **as much as 40 per cent of landfill waste is burnt in open skies, dramatically speeding up the release of otherwise locked-up carbon**.

Need of the hour:

- If we are to combat climate breakdown, reductions in plastic emissions are clearly needed. In showing that transitioning to **a zero carbon energy system has the potential to reduce emissions from plastic by 51 per cent**, the study provides yet another reason to rapidly phase out fossil fuels.
- However, beyond urgently required global decarbonisation, we need to reduce our seemingly insatiable demand for carbon-based plastic. **Increasing recycling rates is one simple way of doing this**.
- A more fundamental solution is **to switch to making plastics from biodegradable sources** such as wood, corn starch, and sugar cane. The materials themselves are carbon neutral, although renewable power is essential to eliminate the climate impact of energy costs during production, transport and waste processing.

- Governments, corporations, and individuals must make research into alternatives a priority, and support alternatives to needless plastic waste.

Conclusion:

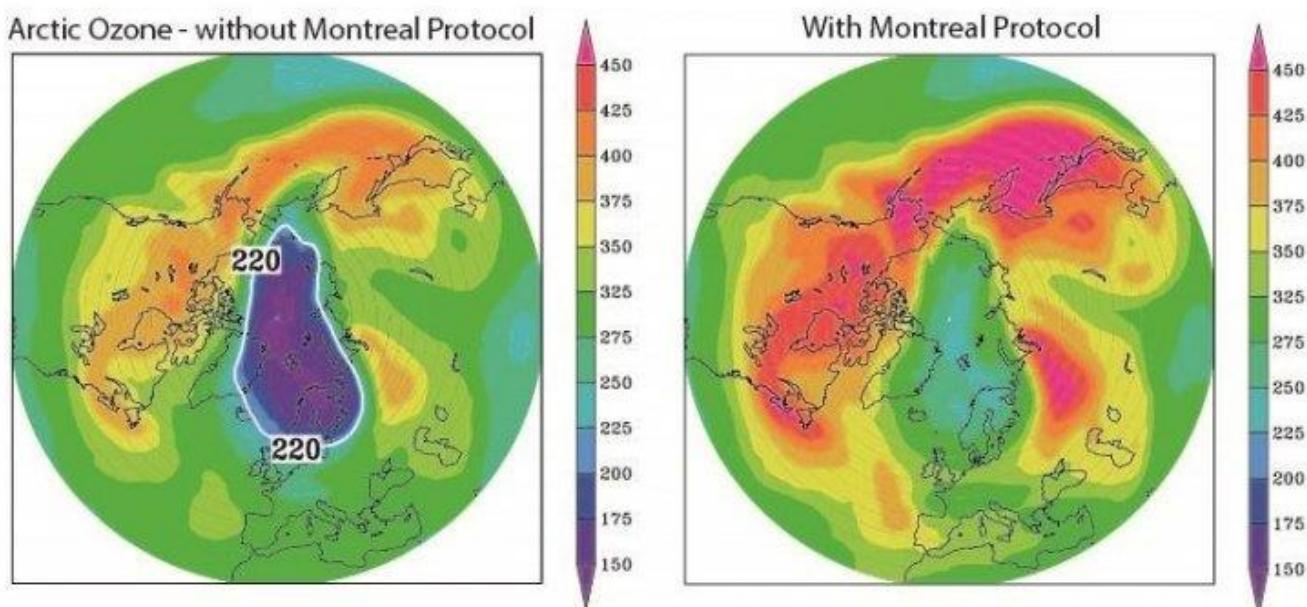
- Plastics need not be completely demonised as environmental scourges. Affordable, durable, and versatile, they bring a raft of societal benefits, and will undoubtedly serve an important role where replacements are unable to be found. But decades of unbridled use and a throw-away culture are having grave consequences that go far beyond the visible pollution of our land and water. It is essential that we drastically reduce our use of avoidable plastics, and eliminate the carbon footprint of the ones we need to use. Our relationship with plastic may be toxic, but it doesn't need to be forever.

20. CHINA CONTINUES TO USE OZONE DEPLETING CFC-11 IN VIOLATION OF MONTREAL PROTOCOL

What to study?

- For Prelims: Key facts on Montreal protocol.
- For Mains: Significance of the Ozone layer and the need for protection.

Context: China has been illegally emitting **Trichlorofluoromethane or CFC-11** — the banned ozone-depleting chemical — according to the research published in the journal Nature recently.



Key findings:

- CFC-11 was phased out under the 1987 **Montreal Protocol**. Despite being the signatory to the Montreal Protocol, and agreeing to phase out production of CFC-11 in 2010, China continued to emit the polluting gas.
- Emissions of CFC-11 were on the rise since 2013. In fact, the emissions increased by 25 per cent since 2012. Between 2008 and 2012, eastern China emitted an average of about 6,400 metric tonnes of CFC-11 per year. That number increased to about 13,400 metric tonnes per year from 2014 to 2017.

Reasons behind:

- China has the world's largest polyurethane foam market, accounting for about 40 per cent of the world's consumption.
- Chinese foam manufacturers have been using CFC-11 illegally to save on the higher cost of alternatives, such as hydrochloro-fluorocarbons like HCFC-141b, which is to be phased out in China by 2026.

Why limit the use of CFC- 11?

- The hole in the ozone is on the path to recovery according to the World Meteorological Organization's (WMO's) assessment; and reduction in the atmospheric concentration of CFC-11 has made the second-largest contribution to the decline in the total atmospheric concentration of ozone-depleting chlorine since the 1990s. But this gas still contributes one-quarter of all chlorine reaching the stratosphere, and a timely recovery of the stratospheric ozone layer depends on a sustained decline in CFC-11 concentrations.
- Continued success of the Montreal Protocol in protecting stratospheric ozone depends on continued compliance and China must adhere to it.

What you need to know about the Ozone layer?

- The ozone layer absorbs most of the Sun's ultraviolet light which is harmful to human life and other life forms. The layer absorbs about 97 to 99% of ultraviolet rays and maintain the ozone-oxygen cycle. Dobson unit is a unit which is used to measure the ozone in the atmosphere at a standard temperature and pressure.

Montreal protocol:

- The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone Layer. The original Montreal Protocol was agreed on 16 September 1987 and entered into force on 1 January 1989.
- The Montreal Protocol includes a unique adjustment provision that enables the Parties to the Protocol to respond quickly to new scientific information and agree to accelerate the reductions required on chemicals already covered by the Protocol. These adjustments are then automatically applicable to all countries that ratified the Protocol.
- Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the **stratosphere-chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform-are to be phased out by 2000 (2005 for methyl chloroform)**. These compounds significantly deplete the stratospheric ozone layer that shields the planet from damaging UV-B radiation.

Outcomes:

- The phaseout of controlled uses of ozone depleting substances and the related reductions have not only helped protect the ozone layer for this and future generations, but have also contributed significantly to global efforts to address climate change; furthermore, it has protected human health and ecosystems by limiting the harmful ultraviolet radiation from reaching the earth.

Sources: the Hindu.

21. CORAL BLEACHING

What to study?

- For prelims and mains: coral bleaching- causes, effects, concerns and measures to prevent.

Context: Researchers have found an alarming pattern of bleaching in the reefs in Mandapam, Keezhakkai and Palk Bay in Gulf of Mannar regions.

Key findings:

- Sea surface temperature ranged from 28.7°C to 31°C in the August 2018-February 2019 period and there was no bleaching seen then.
- However, when the temperatures rose to between 32°C and 36°C between March 2019 and May 2019, researchers observed a pattern of bleaching in corals, which was different at different layers within the sea.

What are Coral reefs?

- Coral reefs are important hotspots of biodiversity in the ocean. **Corals are animals in the same class (Cnidaria) as jellyfish and anemones.** They consist of individual polyps that get together and build reefs.

Significance:

- Coral reefs support a wide range of species and maintain the quality of the coastal biosphere.

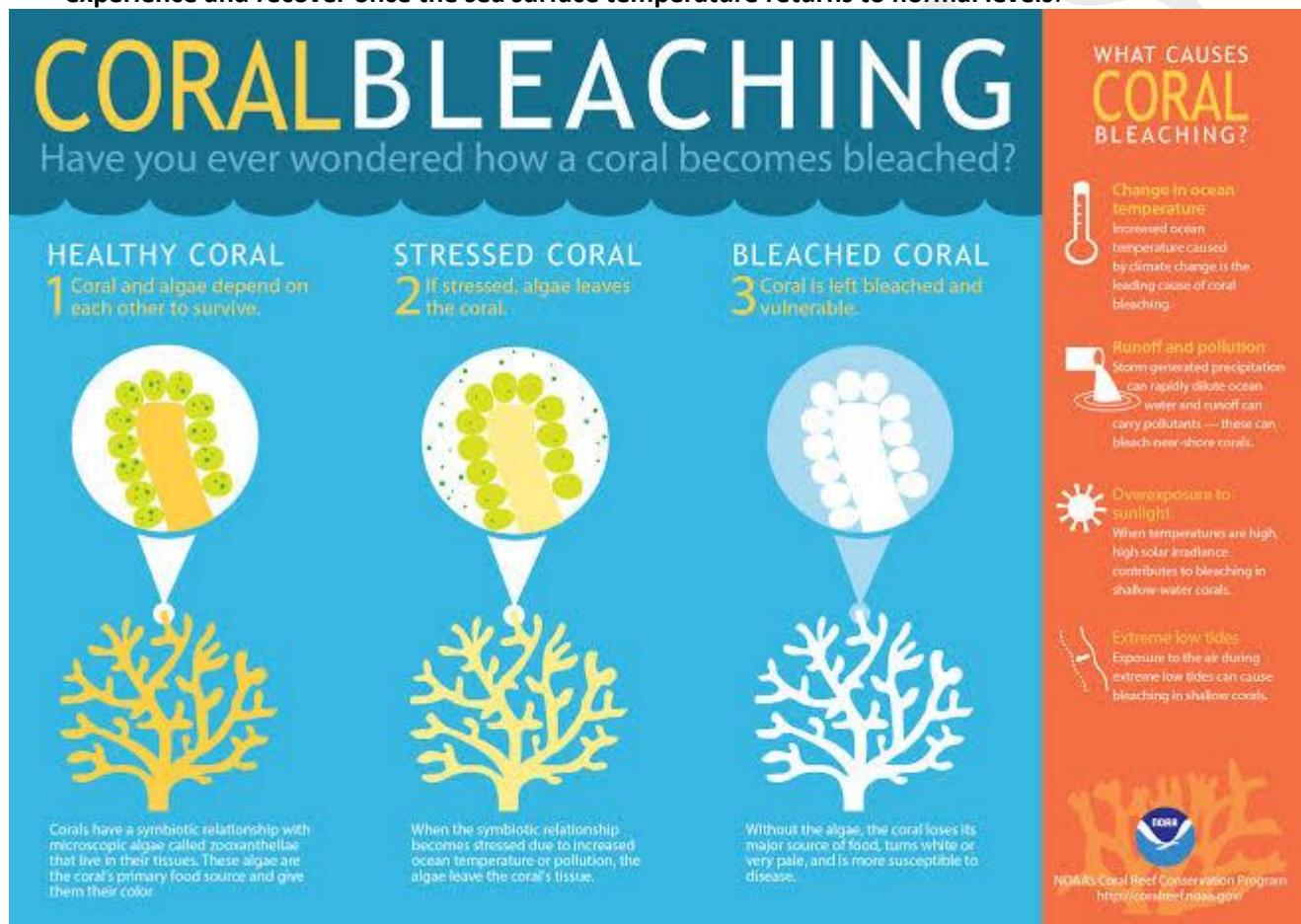
- Corals control the level of carbon dioxide in the water by converting it into a limestone shell. If this process does not take place, the amount of carbon dioxide in the ocean water would increase significantly and affect ecological niches.

Threats:

- Coral reefs are threatened by **climate change**.
- When the sea surface temperature increases beyond a tolerable limit, they undergo a process of bleaching.

What is bleaching?

- Basically bleaching is when the corals expel a certain algae known as **zooxanthellae**, which lives in the tissues of the coral in a **symbiotic relationship**. About 90% of the energy of the coral is provided by the zooxanthellae which are endowed with chlorophyll and other pigments. **They are responsible for the yellow or reddish brown colours of the host coral.** In addition the zooxanthellae can live as endosymbionts with jellyfish also.
- When a coral bleaches, it does not die but comes pretty close to it. Some of the corals may survive the experience and recover once the sea surface temperature returns to normal levels.



Sources: Down to Earth.

22. WORLD WILDLIFE FUND (WWF)

What to study?

- For prelims and mains: about WWF, composition, objectives and reports.

Context: Six mammal, bird and fish species are facing the spectre of extinction in Russia according to **World Wildlife Fund (WWF)**.

- **These include** the Saiga antelope, the gyrfalcon, the Persian leopard, the spoon-billed sandpiper, the Sakhalin sturgeon and the kaluga, also a type of sturgeon.

About WWF:

- It is an international **non-governmental organization**
- **Founded** in 1961
- **Headquarter** — Gland (Switzerland).
- **Aim** : wilderness preservation & the reduction of human impact on the environment
- It is the world's largest conservation organization

Objectives:

- Conserving the world's biological diversity
- Ensuring that the use of renewable natural resources is sustainable
- Promoting the reduction of pollution and wasteful consumption

Sources: the Hindu.

Reports & programmes:

- **Living Planet Report**— published every two years by WWF since 1998; it is based on a Living Planet Index and ecological footprint calculation
- **Earth hour**
- **Debt-for-nature swaps**—financial transactions in which a portion of a developing nation's foreign debt is forgiven in exchange for local investments in environmental conservation measures.
- **Marine Stewardship Council (MSC)** — independent non-profit organization which sets a standard for sustainable fishing
- **Healthy GrownPotato** — eco-brand that provides high-quality, sustainably grown, packaged, and shipped potatoes to consumers by leveraging integrated pest management (IPM) farming practices on large scale farms

Topics: Disaster and management.

1. STATE DISASTER RESPONSE FUND (SDRF)

What to study?

- For Prelims and Mains: SDRF related key facts.

Why in News? Advance release of funds from SDRF to State Governments of Andhra Pradesh, Odisha, Tamil Nadu and West Bengal.

About State Disaster Response Fund (SDRF):

- SDRF has been **constituted by each state under the provisions of Disaster Management act 2005**.
- It was constituted based on the **recommendations of the 13th Finance Commission**.
- **Funding:** The government of India contributes 75% and 90% of the total yearly allocation of SDRF to general states and special category states respectively.
- **Heads:** The state executive committee headed by the Chief Secretary is authorized to decide on all matters relating to the financing of the relief expenditure from the SDRF.

Disaster (s) covered under SDRF:

- Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.

Local Disaster:

- A State Government may use up to 10 percent of the funds available under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs subject to the condition that the State Government has listed the State specific natural disasters and notified clear and transparent norms and guidelines for such disasters with the approval of the State Authority, i.e., the State Executive Authority (SEC).

Features of SDRF:

- SDRF is located in the '**Public Account**' under '**Reserve Fund**'. (But direct expenditures are not made from Public Account.)
- **State Government has to pay interest on a half yearly basis** to the funds in SDRF, at the rate applicable to overdrafts.
- **The aggregate size of the SDRF for each state**, for each year, is as per the recommendations of the Finance Commission.

- The share of GoI to the SDRF is treated as a ‘grant in aid’.
- **Ministry of Home Affairs (MHA)** can recommend an earlier release of 25% of the central share due to a state in the following year, if the exigencies of the particular calamity so warrants. This advance release is adjusted against future instalments due from the center.
- **The accretions to the SDRF together with the income earned on investment are to be invested in central government securities or in interest earning deposits with banks**, which when needed are liquidated.
- **The financing of relief measures out of SDRF are decided by the State Executive Committee (SEC) constituted under Section 20 of the DM Act.** SEC is responsible for the overall administration of the SDRF. However, the administrative expenses of SEC are borne by the State Government from its normal budgetary provisions and not from the SDRF or NDRF.
- **The norms regarding the amount to be incurred on each approved item of expenditure (type of disaster) are fixed by the Ministry of Home Affairs** with the concurrence of Ministry of Finance. Any excess expenditure has to be borne out of the budget of the state government.
- **In the wake of natural calamities, a state Government is empowered to undertake necessary relief measures from SDRF**, which is readily available with them. If additional financial assistance is required from National Disaster Response Fund ((NDRF) they have to submit a memorandum for the same and in the mean time utilize contingency fund of the State, if SDRF is exhausted.
- **Ministry of Home Affairs is the nodal ministry for overseeing the operation of the SDRF** and monitors compliance with prescribed processes.
- **Comptroller and Auditor General of India (CAG)** audit the SDRF every year.

2. NATIONAL CRISIS MANAGEMENT COMMITTEE (NCMC)

- For effective implementation of relief measures in the wake of natural calamities, the Government of India has set up a Standing National Crisis Management Committee with **Cabinet Secretary as Chairman**.

3. SEISMIC ACTIVITY TRIGGERED BY HUMAN ACTIONS

What to study?

- For prelims and mains: human induced seismic activities and their effects.

Context: Seismic activity triggered by human actions like construction of large reservoirs or injection of wastewater into the ground for oil and gas production can have far greater implications than previously thought, a new study has revealed.

Findings of the latest study:

- While it is well known that injection of fluid into subsurface of the earth (one kilometer deep) can cause events like earthquakes, it was until now believed that such disturbances are limited to an area near the site of injection.
- The new study has, however, found that **subsurface disturbances due to fluid injection can result in earthquakes spread over larger regions, going far beyond the area invaded by the injected fluids**. This means, earthquake-triggering stresses can travel far.
- Oil and gas extraction using fluid injection, as well as wastewater disposal, is known to increase seismicity rate in surrounding regions. **Tremblors attributed to these activities have been thought to occur as higher fluid pressures in surrounding rocks trigger instabilities in pre-existing networks of faults.** However, **injection may also cause aseismic slip — deformation caused along a fault line without any accompanying seismic waves — that may in turn trigger earthquakes.**

Significance:

- Understanding this science behind fluid-induced earthquakes could help in unraveling reservoir-induced earthquakes in Koyna. The ‘Deep Drilling at Koyna’ initiative led by Noida-based National Centre for Seismology and CSIR-National Geophysical Research Institute in Hyderabad is studying detailed behaviour of fluid-induced earthquakes in the region.
- These efforts are expected to yield data about fault behaviour at greater depths in the earth’s crust. Our study is a proof-of-concept of how such data can be used in practice to produce more reliable models of earthquake hazard.

Sources: down to earth.

4. GLOBAL FACILITY FOR DISASTER REDUCTION AND RECOVERY (GFDRR)

What to study?

- For Prelims: About UNISDR, Sendai framework and the targets, GFDRR.
- For Mains: Disaster risk reduction- need, challenges and global efforts.

Why in News?

- India has been unanimously chosen as co-chair of the Consultative Group (CG) of Global Facility for Disaster Reduction and Recovery (GFDRR) for the fiscal year 2020.
- The decision was taken during the recently held meeting of GFDRR in Geneva, Switzerland on the margins of the 6th Session of the Global Platform for Disaster Risk Reduction.

What is GFDRR?

- It is a global partnership that helps developing countries better understand and reduce their vulnerability to natural hazards and climate change.
- It is a grant-funding mechanism, managed by the World Bank, that supports disaster risk management projects worldwide.
- GFDRR contributes to the implementation of the Sendai Framework for Disaster Risk Reduction by helping countries to integrate disaster risk management and climate change adaptation into development strategies and investment programs and recover from disasters quickly and effectively.
- Roles: It provides technical assistance, capacity building, and analytical work to help vulnerable nations improve resilience and reduce risk.
- India became a member of CG of GFDRR in 2015.

About Sendai Framework:

- The “Sendai Framework for Disaster Risk Reduction 2015-2030” was adopted during the Third UN World Conference on Disaster Risk Reduction held in Sendai, Japan in March, 2015.

Key features of the Sendai framework:

- It is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action.
- It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).
- The Framework is for 15-year. It is a voluntary and non-binding agreement which recognizes that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders.
- The new Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters.

5. WORLD RECONSTRUCTION CONFERENCE (WRC4)

What to study?

- For prelims: about WRC.
- For mains: significance and the need for inclusion.

Context: The Fourth edition of the World Reconstruction Conference (WRC4) was held in Geneva. This conference was organized in conjunction with the 6th Global Platform for Disaster Risk Reduction (GPDRR).

- **Theme:** “Inclusion for Resilient Recovery”.
- **Participants:** Experts, practitioners and stakeholders from governments, civil society, private sector, academia, international organizations and community-based organizations.

What is WRC?

- The World Reconstruction Conference is a global forum that provides a platform to collect, assess, and share disaster reconstruction and recovery experiences and take forward the policy dialogue for an effective international disaster recovery and reconstruction framework.

Significance of the theme- Inclusion for Resilient Recovery:

- **Social inclusion** is defined throughout Inclusion Matters as both “the process of improving the terms for individuals and groups to take part in society” and, more specifically, as “the process of improving the ability, opportunity, and dignity of people, disadvantaged on the basis of their identity, to take part in society.”
- **Inclusion in disaster recovery and reconstruction** is a key condition for the people’s resilience.
- **Significance:** A more inclusive recovery fosters equal rights and opportunities, dignity and diversity, guaranteeing that nobody from a community is left out because of their age, gender, disability or other factors linked to ethnicity, religion, geography, economic status, political affiliation, health issues, or other life circumstances.
- **Need:** The international frameworks set up by the Agenda 2030 for Sustainable Development Goals, the Sendai Framework for Disaster Risk Reduction, the Paris Agreement on climate change all advocate for an increasing focus on resilience and inclusion.

Topics: Various Security Forces, their mandate

1. INDIAN AND FRENCH NAVIES CONDUCT VARUNA

What to study?

- For prelims and mains: Varuna and other such bilateral exercises and their significance.

Context: The first part of the Indo-French joint naval exercise, Varuna 19.1 will be conducted off the Goa coast.

About the exercise:

- The bilateral naval exercise initiated in 1983 form a vital part of the Indo-French strategic partnership.
- Having grown in scope and complexity over the years, this exercise exemplifies the strong relations between the two nations, in line with the Joint Strategic Vision of India-French Cooperation in the Indian Ocean Region.
- The exercise aims at developing interoperability between the two navies and fostering mutual cooperation by learning from each other’s best practices to conduct joint operations.
- The exercise underscores the shared interests and commitment of both nations in promoting maritime security.

2. BORDER ROADS ORGANISATION (BRO)

What's important?

- For Prelims: BRO and projects implemented by it.
- For Mains: Significance of border roads and the need for reforms in BRO.

Context: Border Roads Organisation (BRO) celebrated its Raising Day on 07 May 2019.

About BRO:

- Functioning under the control of the **Ministry of Defence since 2015**, the BRO is engaged in road construction to provide connectivity to difficult and inaccessible regions in the border areas of the country.
- It is staffed by **officers and troops drawn from the Indian Army's Corps of Engineers, Electrical and Mechanical Engineers, Army Service Corps, Military Police and army personnel on extra regimental employment**.
- Engineering Service and personnel from the General Reserve Engineer Force (GREF) form the **parent cadre of the Border Roads Organisation**.
- Currently, the organisation maintains operations in twenty-one states, one UT (Andaman and Nicobar Islands), and neighbouring countries such as Afghanistan, Bhutan, Myanmar, and Sri Lanka.

- The BRO operates and maintains over 32,885 kilometres of roads and about 12,200 meters of permanent bridges in the country.

Significance of BRO:

- The Border Roads Organization has played a very important role in both maintenance of security and in the development of border areas. Most of the development in the North Eastern states of India can be attributed to the relentless work done by the BRO. Socio economic development in the most inaccessible nooks and corners of our country are a result of the infrastructural work undertaken by the BRO.
- Apart from its work in India, the BRO has undertaken work in numerous countries thus having contributed immensely towards maintaining friendly and diplomatic relations. The highly-skilled BRO personnel undertook and successfully completed construction of the **Delaram-Zaranj Highway in Afghanistan in 2008**. **The Farkhor and Ayni air bases of Tajikistan were also restored and repaired by the BRO.**
- The BRO works in close association with the Indian Army in cases of natural disasters. It is the brave men of the BRO who were responsible for much of the reconstruction work undertaken as a result of the 2004 Tsunami in Tamil Nadu, the 2010 Ladakh flash floods and even during the 2014 Jammu and Kashmir Floods.

Need for reforms:

- Despite attempts at reform, the BRO remains a divided organisation, with friction between BRO cadre officers, and army officers posted on deputation. The BRO cadre resents a large number of top executive and command positions going to the army.

Topics: Role of external state and non-state actors in creating challenges to internal security. Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges.

1. MASOOD AZHAR IS NOW A UN GLOBAL TERRORIST

What to study?

- For prelims and mains: implications and significance of the move.

Context: The United Nations Security Council has designated **JeM Chief, Masood Azhar as a global terrorist** after **China lifted its technical hold on his listing under the UNSC 1267 sanctions committee**. The JeM itself was sanctioned by the 1267 Committee in 2001.

- The proposal to designate Azhar **under the 1267 Al Qaeda Sanctions Committee of the UN Security Council was moved by France, UK and the US on February 27**.

Reasons for listing:

- His support for the JeM since its founding
- Being associated with the al-Qaeda by recruiting for them.
- Participating in the financing, planning, facilitating, preparing, or perpetrating of acts or activities or supplying, selling or transferring arms and related material.
- His role in recruiting fighters in Afghanistan.

Sanctions committee:

- The Sanctions Committee of the UN Nations Security Council was established under Resolution 1267 in 1999, which imposed limited sanctions on the Taliban. Over time, the sanctions regime has evolved to include a lot of measures against designated individuals and entities.
- The sanctions committee also **oversees the implementation of the sanctions measures and reports annually to the Security Council on the implementation of these measures**.

What happens when the committee designates someone as a global terrorist?

- Asset freeze:** All member states of the United Nations are required to freeze without delay the funds and other financial assets or economic resources of designated individuals and entities.
- Travel ban:** All member states are required to prevent the entry into or transit through their territories by designated individuals.

Arms embargo: All member states are required to prevent the direct or indirect supply, sale and transfer from their territories or by their nationals outside their territories, or using their flag vessels or aircraft, of arms and related materiel of all types, spare parts, and technical advice, assistance, or training related to military activities, to designated individuals and entities.

Implications for Pakistan:

- Azhar's designation as a global terrorist will force Pakistan to act against him and individuals and entities associated with him. This will effectively mean total immobilisation of Azhar and shutdown of his organisation and its institutions such as terror camps and madrasas.

Sources: the Hindu.

2. UNLAWFUL ACTIVITIES (PREVENTION) ACT

What to study?

- For prelims and mains: UAPA- features, significance, concerns over its misuse and need.

Context: The Central Government has extended the ban on the **Liberation Tigers of Tamil Eelam (LTTE)** for another five years under sub-sections (1) and (3) of section 3 of the **Unlawful Activities (Prevention) Act, 1967 (37 of 1967)** with immediate effect.

What necessitated this?

- The notification states that the LTTE's continued violent and disruptive activities are prejudicial to the integrity and sovereignty of India; and it continues to adopt a strong anti-India posture as also continues to pose a grave threat to the security of Indian nationals.

About the Unlawful Activities (Prevention) Act (UAPA):

- This law is aimed at effective prevention of unlawful activities associations in India.
- Its main objective is to make powers available for dealing with activities directed against the integrity and sovereignty of India.
- The Act makes it a crime to support any secessionist movement or to support claims by a foreign power to what India claims as its territory.
- The UAPA, framed in 1967, has been amended twice since: first in 2008 and then in 2012.

The law is contested for few draconian provisions:

- The Act introduces a **vague definition of terrorism** to encompass a wide range of non-violent political activity, including political protest.
- It empowers **the government to declare an organisation as 'terrorist' and ban it**. Mere membership of such a proscribed organisation itself becomes a criminal offence.
- It allows **detention without a chargesheet for up to 180 days** and police custody can be up to 30 days.
- It creates a **strong presumption against bail** and anticipatory bail is out of the question. It creates a presumption of guilt for terrorism offences merely based on the evidence allegedly seized.
- It authorises the creation of **special courts**, with wide discretion to hold in-camera proceedings (closed-door hearings) and use secret witnesses but contains no sunset clause and provisions for mandatory periodic review.

Sources: The Hindu.

3. NATIONAL SECURITY STRATEGY FOR INDIA

Context: There have been several attempts at formulating a national security strategy for India. According to some accounts, the **National Security Advisory Board (NSAB)** had formulated draft national security strategy documents on four different occasions and presented them to successive governments, but the political class wouldn't bite. There has been a lingering worry in the minds of the politicians about a potential commitment trap if a national security strategy were to be put on paper.

Why do we need a National Security Strategy?

- The **National Security Council (NSC)** set up in 1998 **almost never meets**, primarily because it is an advisory body, with the Cabinet Committee on Security being the executive body.

- Over the years, the NSA's powers have increased, even though he is not accountable to Parliament. Even though the NSA plays a vital role in national security, he has no legal powers as per the government's allocation of business rules.

Immediate reforms:

- NSC should be made more useful.** For this, the government's allocation of business rules should be amended to give more powers to the NSC and its subordinate organisations, such as the Strategic Policy Group.
- The job of the **National Security Adviser needs to be reimagined.** The K.C. Pant Task Force in the late 1990s had recommended the creation of an **NSA with the rank of a Cabinet Minister.**

The Hooda document:

- It is a comprehensive national security strategy document prepared after internal consultations. The document was prepared in less than two months and in consultation with six key core group members and many domain experts. The guiding philosophy of the document is enshrined in the following sentence: "This strategy recognises the centrality of our people. We cannot achieve true security if large sections of our population are faced with discrimination, inequality, lack of opportunities, and buffeted by the risks of climate change, technology disruption, and water and energy scarcity."

Key recommendations:

- On the issue of **military jointmanship**, it recommends that "the three services should undertake a comprehensive review of their current and future force structures to transform the army, navy and air force into an integrated warfighting force."
- It argues that it would take "**a cultural change in the way the DRDO is currently operating**" to improve domestic defence production.
- It seeks to set up a **Defence Cyber Agency**.
- It highlights the need to initiate structured programmes that bring together civil society members, family groups, educationists, religious teachers and even surrendered terrorists in an effort to roll back radicalisation.

Topics: *Cybersecurity related issues.*

1. RUSSIA “SOVEREIGN INTERNET” BILL

What to study?

- For prelims and mains: key features, significance and concerns over the Bill.

Context: Russian President Vladimir Putin has signed into law a “**sovereign internet**” bill.

Key features:

- The measures include** creating technology to monitor internet routing and to steer Russian internet traffic away from foreign servers, ostensibly to prevent a foreign country from shutting it down.
- The bill created a system that gives the authorities **the capacity to block access to parts of the Internet in Russia.**
- Under the new law Russian **Internet access providers will also need to ensure that their networks have the technical means for “centralised traffic control”** to counter potential threats.

Rationale behind:

- The government defended the legislation as a defensive move in case the United States would cut Russia off from the global Internet. Also, Russia must ensure its networks security after US President Donald Trump unveiled a new American cybersecurity strategy in 2018 which accused Russia of carrying out cyber-attacks with impunity.

The bill is being publicly denounced by all rights groups in country. Why?

- Because the move includes measures such as **to create technology to monitor internet routing, to steer Russian internet traffic away from foreign servers, allegedly to prevent a foreign country from shutting it down.** It is being alleged that these laws clampdown on **media and internet freedoms.**

- It is also being criticized as a vaguely worded bill which **gives new censorship powers to government and is aimed at restricting information and communication online**.
- It will allow greater surveillance by Russian intelligence agencies, and increase ability of state authorities to control information.

Concerns:

- In recent years Russian authorities have blocked online sites and content linked to the opposition, as well as internet services which fail to cooperate with them, including the Dailymotion video platform, the LinkedIn online social networking site and the encrypted messaging app Telegram.

Sources: The Hindu.

2. INDIA JOINS GLOBAL INITIATIVE TO COMBAT ONLINE EXTREMISM

What to study?

- For prelims and Mains: key features, need for and significance of the initiative.

Context: India has joined a major global initiative '**Christchurch call to action**' to combat terrorism and extremism online; and make internet a safe and secure place to be.

About Christchurch call to action:

- The initiative was launched during the "**Online Extremism Summit**" in Paris.
- It was **launched jointly by India, France, New Zealand, Canada and several other countries**. A total of 18 countries including the European Union supported the initiative along with social media giants like Twitter, Facebook, Google and Microsoft.
- **Aim** to prevent the abuse of the internet.
- The initiative outlines collective and voluntary commitments from governments and online service providers to address the issue of terrorist and violent extremist content online.
- It calls for a free, open and secure internet to promote connectivity, enhance social inclusiveness and foster economic growth.

Background:

- The 'Christchurch call to action' initiative has been named after the New Zealand city Christchurch, where over 50 people were killed and over 20 got injured in shootings at two mosques.

Need:

- As internet is not resistant towards the abuse by terrorists and violent extremists, there is an urgent need of collective efforts to secure the internet from such terror groups. Recent Christchurch terror attacks were broadcasted online by terrorists. The broadcasting of such content online has severe impact on victims of such incident, on collective security and on people across the world.
- The Christchurch attack stressed on the urgent call of action by the governments, civil society, online service providers, and social media companies to eliminate terrorist and extremist content online.

Sources: the Hindu.



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FACTS for PRELIMS

1. HANGUL

- **Context:** A massive decline in the population of Kashmir's iconic wildlife species, the Hangul (*Cervus hanglu hanglu*), also known as the Kashmir stag, continues to be a big concern.

Key facts:

- It is the state animal of **Jammu & Kashmir**.
- It is restricted to the **Dachigam National Park** some 15 km north-west of Jammu & Kashmir's summer capital Srinagar.
- It is placed under **Schedule I** of the Indian Wildlife (Protection) Act, 1972 and the J&K Wildlife Protection Act, 1978.
- The Hangul was once widely distributed in the mountains of Kashmir and parts of Chamba district in neighbouring Himachal Pradesh.
- The IUCN's Red List has classified it as **Critically Endangered** and is similarly listed under the **Species Recovery Programme of the Wildlife Institute of India (WII)** and the **Environmental Information System (ENVIS) of the MoEFCC**.

2. LAST CAPTIVE WHITE TIGER

- **Why in News?** The last captive white tiger named Bajirao died recently at Sanjay Gandhi National Park, Mumbai.
- The tiger was born at National Park in 2001.
- White tigers are **not a separate sub species of Tiger**. The White colour is basically due to a pigmentation. The White colour is due to lack of red or yellow **pheomelanin pigment** and the presence of unique recessive genes.
- White tigers were once found in Madhya Pradesh, Assam, West Bengal, Bihar. Now there are no white tigers in the wild.
- **The last white tiger reported in wild was captured in Rewa forest Madhya Pradesh.**
- **Sanjay Gandhi National Park is in Maharashtra.** It is located in Mumbai. It has a protected archaeological site called Kanheri caves.

3. PURPLE FROG

- **Context:** Purple frog could be soon designated as Kerala's state amphibian. There is a proposal on this.

About Purple Frog:

- also known as **Maveli frog or Pignose Frog**.
- It is relatively round in shape as compared to other flattened frogs. Compared to other frogs it has a small head and an unusual pointed snout (muzzle).
- In most cases adults are dark purplish-grey in color.

- For almost its entire life it lives in underground tunnels and comes out to surface for only a single day in a year to breed.
- **Distribution:** They were thought to be limited to south of the Palghat Gap (a pass which is located between Nilgiri Hills to north and Anaimalai Hills to south) in Western Ghats, but are now known to be quite widely distributed in Western Ghats.
- The frog should rightly be called '**living fossil**' as it is believed that they have co-existed with dinosaurs almost 70 million years ago.
- IUCN Red List: Their conservation status is **endangered** as per International Union for Conservation of Nature (IUCN).



4. GRIZZLED GIANT SQUIRREL

- **Why in News?** For the first time, researchers have sighted nests of the grizzled giant squirrel at **Pakkamalai Reserve Forests** near Gingee in the Eastern Ghats.
- The grizzled giant squirrel is usually known to nest in the Western Ghats in Southern India ranging from Chinnar Wildlife sanctuary in Kerala to Anamalai Tiger Reserve and Palani hills in Tamil Nadu.
- It has been categorised as **near threatened** by the Red List and listed under Schedule II of **CITES**.
- It is listed under **Schedule I** of the **Wildlife Protection Act, 1972**.

5. NEW SPECIES OF REDDISH-BROWN PIT VIPER FROM ARUNACHAL PRADESH

- This discovery of new species makes Arunachal Pradesh **only Indian state to have a pit viper named after it**.
- Scientific Name: *Trimeresurus arunachalensis*.
- With this, **India is now home to fifth brown pit viper**. The other four brown pit vipers are Hump-Nosed, Horseshoe, Malabar, and Himalayan.
- This new discovery makes Arunachal pit viper the **second serpent to have been discovered in state after Crying Keelback**, a non-venomous snake was found in Arunacal's Lepa-Rada district in 2018.

6. BARN OWLS

- **Why in News?** With a thriving rat population playing havoc with its coconut yield, the UT of Lakshadweep hires **barn owls** for help.

Why barn owls?

- The reason is that the rats in the Lakshadweep Islands practically live on treetops. The coconut palms here grow so close together that they resemble a jungle. The fronds overlap, allowing the rodents to move easily from one tree to another.
- Besides, the nocturnal barn owls are natural rat hunters, armed with a powerful auditory mechanism. There is also an important environmental angle to Lakshadweep's decision to choose biocontrol.
- The islands being a designated organic zone, use of chemicals for pest control is a strict no-no.

7. WHITE-THROATED RAIL



- **Context:** New research has found that the **white-throated rail** had once gone extinct, but rose from the dead thanks to a rare process called "**iterative evolution**".
- **Iterative evolution** means the repeated evolution of similar or parallel structures from the same ancestor but at different times.
- The white-throated rail is the **only flightless bird known in the Indian Ocean area**. It is a chicken-sized bird, **indigenous to Madagascar**. Migrating to Aldabra, the rails evolved so that they lost the ability to fly.

8. KUDAKRUMIA



- A new species of wasp from the genus Kudakrumia has been recently identified by scientists in **Goa**.

- The wasp, **Kudakrumia rangnekari**, has been named after Goa-based researcher Parag Rangnekar.

9. ORANGUTAN

- The Nandankanan Zoological Park (NZP) has lost one of its beloved members — 41-year-old orangutan named "**Bini**", an **extant species of great apes**.

10. LECANORCHIS TAIWANIANA

- It is a type of orchid that was recently discovered in Assam. This is the **first time it is discovered in India**.
- The orchid species is already known in Japan, Taiwan, and Laos.
- It is one of two known types of parasitic plants which have **abandoned photosynthesis**.
- It **derives nutrients and its energy from fungus**.
- It is India's one of **smallest botanically recorded orchids** in terms of size and duration of bloom.
- **Background:** India has about 1,300 species of orchids.

11. MOU SIGNED FOR PLANTATION OF 10,000 RUDRAKSH TREES IN UTTARAKHAND

- **Context:** To create a greener ecosystem in Ganga Basin **National Mission for Clean Ganga** has signed a Memorandum of Understanding (MoU) with **HCL Foundation and INTACH**. Its objective is to undertake project of Plantation of **Rudraksh Trees in Uttrakhand**. It is a **CSR initiative under Namami Gange Programme**.
- It aims at planting 10,000 Rudraksh trees in the Ganga Basin area in Uttarakhand in association with the local community.
- **Elaeocarpus ganitrus or Rudraksh Tree is a large evergreen tree**. It has **broad-leaves** whose seed is traditionally used for prayer beads in Hinduism and Buddhism. Seeds of this tree are known as Rudraksh.

12. KAPPAPHYCUS ALVAREZII

- **What is it?** It is an invasive, which smothers and kills coral reefs.
- **Concerns:** It has spread its wings to coral reef areas in Valai island in the Gulf of Mannar (GoM) and set to invade new coral colonies in the marine national park. It has already invaded Shingle, Kurusadai and Mulli islands in Mandapam cluster of the GoM, the red algae invaded Valai island along Kilakarai coast following its cultivation in south Palk Bay.
- **Regulation:** A 2005 Government Order had restricted cultivation of the exotic seaweed only to the seawaters north of the Palk Bay and South of Thoothukdi coast.

13. GOLDMAN ENVIRONMENTAL PRIZE

- **Why in News?** Six grassroots environmental activists will receive the prestigious Goldman Environmental Prize.

About the Prize:

- The Goldman Environmental Prize honors **grassroots environmental heroes** from the world's six inhabited continental regions: Africa, Asia, Europe, Islands & Island Nations, North America, and South & Central America.
- The Prize recognizes individuals for sustained and significant efforts to protect and enhance the **natural environment**, often at **great personal risk**.
- The Goldman Prize views "grassroots" leaders as those involved in **local efforts**, where positive change is created through community or citizen participation in the issues that affect them. Through recognizing these individual leaders, the Prize seeks to inspire other ordinary people to take extraordinary actions to protect the natural world.

What the Goldman Prize Provides?

- The Goldman Prize amplifies the voices of these grassroots leaders and provides them with:
- International recognition that enhances their credibility.
- Worldwide visibility for the issues they champion.
- Financial support to pursue their vision of a renewed and protected environment.
- **This year marks the 30th anniversary of the Prize founded in 1989 by U.S. philanthropists Rhoda and Richard Goldman.** To date, 194 winners from 89 different nations have received this award.

14. WORLD PRESS FREEDOM PRIZE

- **Context:** The World Press Freedom Prize also known as UNESCO/Guillermo Cano World Press Freedom Prize is formally conferred every year by Director-General of UNESCO, on occasion of World Press Freedom Day observed on 3 May.

UNESCO/Guillermo Cano World Press Freedom Prize:

- Created in 1997, the annual UNESCO/Guillermo Cano World Press Freedom Prize honours a person, organization or institution that has made an outstanding contribution to the defence and, or promotion of press freedom anywhere in the world, and especially when this has been achieved in the face of danger.
- The Prize was established on the initiative of UNESCO's Executive Board and is formally conferred by the Director-General of the Organization, on the occasion of World Press Freedom Day, on 3 May.
- It is named in honour of Guillermo Cano Isaza, a Colombian journalist who was assassinated in front of the offices of his newspaper El Espectador in Bogotá, Colombia on 17 December 1986.

15. SASAKAWA AWARD

- **Context:** The United Nations Office for Disaster Risk Reduction (**UNDRR**) has honoured Dr Pramod Kumar Mishra, Additional Principal Secretary to Prime Minister Narendra Modi, with the 'Sasakawa Award 2019 for Disaster Risk Reduction'.

Key facts:

- The Sasakawa Award is the most prestigious award of the United Nations in the area of Disaster Risk Management.
- Instituted 30 years back, the award is jointly organised by the United Nations Office for Disaster Risk Reduction (UNDRR) and the Nippon Foundation.
- The winners of the award can be either organisations or individuals who are bestowed with a grant of USD 50000 as the award prize.

16. VAYOSHRESHTHA SAMMAN

- **Why in News?** Nominations for Vayoshreshtha Samman- National Awards for Senior Citizens 2019 for individuals/institutions have been invited.

About Vayoshreshtha Samman:

- Vayoshreshtha Samman is a **Scheme of National Awards instituted by the Ministry of Social Justice & Empowerment (D/o Social Justice & Empowerment)** initially in 2005 and was upgraded to the status of National Awards in 2013, for institutions involved in rendering distinguished service for the cause of elderly persons especially indigent senior citizens and to eminent citizens in recognition of their service/achievements.
- The awards are presented on 1st of October every year pursuant to the adoption of a resolution by the **UN General Assembly to observe the year 1999 as the International Year of Older Persons**.

17. MAN BOOKER INTERNATIONAL PRIZE

- **Context:** **Jokha Alharthi**, an author from Oman won the prestigious Man Booker International Prize for her **Arabic novel "Celestial Bodies"**. She became the first Arabic language writer to win this award.
- Alharthi will share her prize money with her **UK-based translator named Marilyn Booth**.

About Man Booker International Prize

- It is an international literary award sponsored by the 'Man Group', which is the same organisation that gives Man Booker Prize for fiction. It is counterpart to Man Booker Prize for English-language novels.
- It is an annual award, given for a single work of fiction in any language. It is open to books in any language that have been translated into English and published in the United Kingdom in the last year.

- It carries a cash prize of 50,000 pounds (or US \$64,000) for winning title, which is shared equally between author and translator.

18. THE ORDER OF THE RISING SUN, GOLD AND SILVER STAR

- Context:** Former Indian Foreign Secretary Shyam Saran is selected for Japan's Second Highest National Award called 'The Order of the Rising Sun, Gold and Silver Star'. He will be conferred for his contributions in strengthening strategic ties and enhancing mutual understanding between India and Japan.

The Order of the Rising Sun:

- It is the Japanese government's Second Highest National Honour. It was established by Japanese Emperor Meiji in 1875.
- It is awarded for an exceptional civil or military merit.

19. INDIAN COAST GUARD SHIP (ICGS) VIGRAHA

- Why in News?** It has been decommissioned recently at Visakhapatnam, Andhra Pradesh.

Key facts:

- It is a frontline offshore patrol vessel (OPV). It was commissioned into service on April 12, 1990.
- It was the seventh OPV built by Mazagaon Dock Ltd, Mumbai. It was first of its class among other OPVs of third series.
- It was also leased to Sri Lankan Navy on a dry lease from August 2008 to January 2011. Later, it was re-inducted into Indian Coast Guard (IGC) in January 2019 after which it was continuously based at Visakhapatnam.

20. INS RANJIT

- What is it?** It is Indian Navy's missile destroyer.
- It was third of five Kashin- class destroyers built by former USSR.
- It is first of five Rajput class destroyer to go out of service.
- Why in news?** It will be decommissioned.

21. INS VELA

- What is it?** It is Indian Navy's fourth Stealth Scorpene-Class submarine.
- launched by MDL after it entered into contract with French collaborator Ms Naval Group (earlier known as DCNS) for construction and transfer of technology for six Scorpene class submarines under Project 75.
- It is a diesel-electric attack submarine of Kalvari-class.
- INS Vela was first commissioned on August 31, 1973 in the Indian Naval Service and continued to serve

for 37 years. It was the country's oldest submarine when it was decommissioned on June 25, 2010.

22. SIMBEX

- Why in News?** The annual Singapore India Maritime Bilateral Exercise SIMBEX-2019 held recently.

What is it?

- Singapore India Maritime Bilateral Exercise is a naval exercise between two navies in the Andaman Sea and Bay of Bengal.
- It is an unprecedented level of interoperability, where ships, submarines and aircraft of India and Singapore will participate in multi-dimensional exercises at sea with perhaps very high degree of complexity.
- Since its inception in 1993, SIMBEX has grown in tactical and operational complexity.

23. ADMM-PLUS MARITIME EXERCISE

- Context:** ASEAN Defense Ministers' Meeting (ADMM)-Plus Maritime Security Field Training Exercise (MS FTX) was held recently. This is the fourth Maritime Security Field Training Exercise (MS FTX) conducted under the ambit of the ADMM-Plus.
- It was co-organized by Singapore and South Korea as both nations currently holds co-chairmanship of ADMM-Plus Experts' Working Group on Maritime Security.
- Participants:** The ADMM-Plus comprises total 18 nation participants which include ten Association of Southeast Asian Nations (ASEAN) countries and other 8 includes the United States, Australia, New Zealand, South Korea, Japan, Russia, China, and India.

24. INDO-MYANMAR COORDINATED PATROL (IMCOR)

- Context:** The 2019 Indo-Myanmar coordinated patrol (IMCOR) is taking place. This is the 8th edition of coordinated patrol (CORPAT) between India and Myanmar.
- The initiative between the Indian Navy and Myanmar Navy seeks to address issues of terrorism, human trafficking, poaching, illegal fishing, drug trafficking and other illegal activities harmful to interest of both nations.
- The CORPAT series was first started in Mar 2013. Since then it has fostered improved professional interaction and enhanced mutual understanding between the two navies for maritime interoperability.

25. GROUP SAIL

- Context:** IN Ships Kolkata and Shakti recently carried out Group Sail with naval ships of Japan, Philippines

and the United States of America in the South China Sea.

- **What is It?** The Group Sail exercise aims to deepen the existing partnership and foster mutual understanding among participating navies.
- The latest exercise with naval ships of Japan, Philippines and United States showcased India's commitment to operating with like-minded nations to ensure safe maritime environment through enhanced interoperability.

26. AKASH MISSILE

- **Context:** Defence Research and Development Organisation (DRDO) has successfully test fired AKASH-MK-1S missile.

Key facts:

- This is **surface to air anti-aircraft missile** with a strike range of 25 km and capability to carry warhead of 60 kilogram.
- It can reach an altitude of 18 km and can be fired from both tracked and wheeled platforms.
- The missile is guided by a phased array fire control radar called 'Rajendra' which is termed as Battery Level Radar (BLR) with a tracking range of about 60 km.
- The Akash-MK-1S is capable of striking down enemy fighter jets and drones very effectively and accurately.
- The Akash surface-to-air missile was designed to intercept enemy aircraft and missiles from a distance of 18 to 30 km.

27. BRAHMOS MISSILE

- **Context:** Eastern Command Unit Test- Fired BrahMos Missile from Car Nicobar Islands.

About BrahMos:

- The BrahMos is the fastest cruise missile of its class in the world.
- BrahMos missile flies almost three times the speed of sound at Mach 2.8 and has a range of 290 km.
- The missile has been jointly developed with Russia and is named after the rivers Brahmaputra and Moskva in Russia.
- The BrahMos is extremely difficult to be intercepted by surface to air missiles deployed on leading warships around the world.
- The range of the BrahMos missile can be extended up to 400 km as certain technical restrictions were lifted after India became a full member of the Missile Technology Control Regime or MTCR in 2016.

28. APACHE GUARDIAN ATTACK HELICOPTERS

- **Context:** US aerospace major Boeing has handed over first of the 22 Apache Guardian attack helicopters to the Indian Air Force today.

AH-64E Apache:

- It is a leading multi-role attack helicopter and is flown by the US Army.
- The helicopter has been customised to suit the IAF's future requirements and would have significant capability in mountainous terrain.
- It has the capability to carry out precision attacks at standoff ranges and operate in hostile airspace with threats from ground.
- Its ability to transmit and receive the battlefield picture, to and from the weapon systems through data networking makes it a lethal acquisition.

29. OPERATION SAFED SAGAR

- **What is it?** Operation Safed Sagar was undertaken by the Air Force jointly to flush out infiltrators in the Kargil sector along the Line of Control.

30. ARMY SCOUTS MASTERS COMPETITION

- **Context:** India for the first time will host the '**Army scouts masters competition**'. The event is scheduled to be held between end of July to mid-August 2019, in **Jaisalmer City, Rajasthan**.
- India will be a **co-host of Army International Scout Masters Competition 2019**, which marks first such edition in international competition in which a country is a host as well as a participant.
- The Army Scouts Masters Competition is a **part of International Army Games** steered by Russia.
- It is designed to forge strong ties with friendly foreign countries and to promote peaceful co-existence, collaboration, cooperation, team spirit, tranquility and development between contestants and at the same time facilitating sharing of best practices, hardware and technology.

31. SKIMMER

- A skimmer is a device designed to look like and replace the card insertion slot at an ATM. The skimmers, which cannot be usually spotted by an untrained eye, have circuitry that read and store the data on the magnetic strip of an ATM card even as the ATM processes the same data.

32. 3D-PRINTED ARTIFICIAL CORNEAS MIMIC HUMAN EYE

- Using **bioink made from stem cells**, scientists have **3D-printed artificial corneas** that mimic the human eye. The researchers produced the artificial cornea with the lattice pattern of the human cornea by regulating the shear stress to control the pattern of protein fibrils.

33. MICROBIOMES

- **Microbiome** is the community of bacteria, viruses and fungi that live on the skin or in the gut, nose or reproductive tract.
- Microbiomes start forming at birth and are different depending on whether babies were born vaginally or via C-section. And they change with age and different exposures, such as a course of antibiotics that can wipe out friendly bacteria along with infection-causing ones.

Microbes in body could help predict future health

- A study found microbial zoo changing in ways that eventually may help doctors determine who's at risk of preterm birth, inflammatory bowel disease, even diabetes.

34. BISPHENOL-A (BPA)

- **Context:** Despite the use of bisphenol-A (BPA) being prohibited in feeding bottles for babies, the toxic chemical continues to be found in some bottles and cups for babies sold in the Indian market, and is leaching into baby foods, found a recent study conducted by Toxics Link.
- **What is it?** BPA is an endocrine-disrupting chemical that has been accepted as the “chemical of concern” globally, and countries have taken action to phase it out from products. The toxic chemical is known to mimic a hormone in the body which activates the progression of cancer and interferes with the development of the reproductive system.
- **Effects:** Epidemiological studies of children indicate correlations between BPA exposure and heart diseases, liver toxicity, and metabolic syndrome (diabetes obesity).

35. SULFURI BACTERIUM

- *Sulfurihydrogenibium yellowstonense* or Sulfuri is a bacterium that controls the formation of pasta like rocks on the earth is **ancient and thrives in harsh environments** that are similar to conditions on Mars
- The bacterium belongs to a lineage that evolved prior to the oxygenation of Earth roughly 2.35 billion years ago
- It can survive in extremely hot, fast-flowing water bubbling up from underground hot springs.
- It can withstand exposure to ultraviolet light and survives only in environments with extremely low oxygen levels, using sulphur and carbon dioxide as energy sources.

36. SANAULI

- **Why in News?** 4,000-year-old rice, dal, sacred chambers and coffins found by ASI in Sanauli.
- **Significance:** Three chariots, some coffins, shields, swords and helmets had been unearthed, pointing

towards the existence of a “**warrior class in the area around 2,000 BCE**”. It is contemporary to the last phase of the mature Harappan culture. These findings are important to understand the culture pattern of the Upper Ganga-Yamuna doab.

- **Where is it?** Sanauli is located on the left bank of the River Yamuna, 68 km north-east of Delhi which brought to light the largest necropolis of the late Harappan period datable to around early part of second millennium BCE”.

37. MICROPLASTICS

- **Microplastics** are pieces of plastic debris that measure less than five mm long
- Airborne plastic particles pollute the air and dry land as well
- These are invisible atmospheric pollutants
- Microplastics can come from a variety of sources, including items such as plastic bottles or disposable contact lenses that break down into smaller pieces.
- **Microbeads**, which are found in some hygiene products such as toothpaste, are another source of microplastic pollution. Concern over their environmental impact has led some governments, including Britain's, to **ban the manufacture of products that contain them**.
- They may be everywhere. Or, at least, wherever the water and wind can take them.
- In the ocean, microplastics contribute to phenomena such as the **Great Pacific Garbage Patch**, a swirling gyre of more than 87,000 tonnes of trash that lies hundreds of miles from shore.
- Microplastics have been found to harm animals, including insects and marine species.

38. DENISOVANS

- Analysis of a fossil jawbone containing molars recovered from Baishiya Karst cave in Xiahe, Gansu, China shows Denisovans lived in the **Tibetan Plateau** some 1,60,000 years ago.
- They are an extinct species or subspecies of archaic humans in the genus Homo.



- The first evidence for Denisovans or Denisova hominins was first discovered in 2008 in a cave in the **Altai mountains in Siberia**. This is the first time evidence of Denisovan presence has been found outside the Denisova cave.
- The hominins adapted to low-oxygen environment before modern humans came

- Modern humans living in the Tibetan Plateau carried a special **gene variant** — EPAS1 (Endothelial PAS Domain Protein 1) — that allowed them to **cope with low oxygen (hypoxia) environments** typical of **high altitude**. This gene variant has been found in Denisovans.

39. SUMMER PLOUGHING

- It is defined as the ploughing the field across the **slope** during hot summer with the help of specialized tools with primary objective of opening of the soil crust accompanied by **deep ploughing** and simultaneously overturning of the soil underneath to disinfect it with the help of piercing sun rays.
- The ploughing activity is taken up in the direction perpendicular to the natural flow of water/gradient or wind flow so that soil erosion is arrested and whatever small quantum of rain received gets into the soil preserving it for the crop to be sown during kharif.
- It is done one month in advance i.e. in the month of May for Kharif crops.

Benefits of summer ploughing

- Increased permeability of Soil, Improves Soil structure, Reduced toxicity, Reducing hazards of insects and pests, Weeds Control

40. MAWMLUH CAVE AND THERRIAGHAT

- Why in news?** The Geological Survey of India (GSI) North Eastern Region (NER) has installed two geological display boards at two important geological sites in Meghalaya- **Mawmluh cave and Therriaghata, Sobhar in East Khasi Hill District**.
- Significance:** These geological display boards with geo-scientific information will help in creating awareness among visiting tourists, students and general public. They will help preserve site and also help future generation will be aware of such geological developments.
- Mawmluh Cave:** The stalagmite in Mawmluh cave has been tagged as Global Stratotype Section and Point (GSSP). It makes it first formally ratified marker of a geological time period in India. The Meghalayan Age period began about 4200 years ago experienced an abrupt mega-drought and cooling around the world.
- Therriaghata:** It marks Cretaceous (K)-Palaeogene (Pg) mass extinction event.
- The Um-Sohryngkew (Wahrew) river section at Therriaghata is known for having the most complete records of Cretaceous-Palaeogene (K-Pg) boundary transition in India. There is also a high level of iridium metal from the boundary which marks catastrophic event when a giant meteorite hit earth.

41. T. N. MANOHARAN TASK FORCE

- The **Reserve Bank of India (RBI)** on Wednesday constituted a task force to suggest policy and regulatory interventions required for development of secondary market in corporate loans, including loan transaction platform for stressed assets.
- The six-member body, headed by **Canara Bank chairman T. N. Manoharan**
- Secondary loan market in India is largely restricted to asset reconstruction companies (ARCs) and ad hoc sale to other lenders, including banks, and no formalised mechanism has been developed to deepen the market.
- A well-developed secondary market for debt will also aid in the transparent price discovery of the inherent riskiness of the debt

42. HARSH VARDHAN COMMITTEE

- The Reserve Bank of India (RBI) constituted a committee to review the existing **state of mortgage securitisation** in India and suggest measures to deepen it.
- The mortgage securitisation market in India is primarily dominated by direct assignments among a limited set of market participants on account of various structural factors impacting both the demand and the supply side, as well as certain prudential, legal and tax and accounting issues.
- The panel has also been asked to assess the role of various counterparties, including servicers, trustees, rating agencies, in the securitisation process and suggest the steps required.
- Harsh Vardhan Panel, has been mandated to review the current market operations and recommend policy interventions.

43. GLOBAL CHILDHOOD REPORT

- Global Childhood Report** recently released by **Save the Children**, an NGO working for the education and protection of child rights.

Key Findings:

- Report states that Children born today have a better chance than at any time in history to grow up healthy, educated and protected, with the opportunity to reach their full potential
- In 2000, an estimated 970 million children were robbed of their childhood due to ill-health, malnutrition, exclusion from education, child labour, child marriage, early pregnancy and violent death. That number has reduced to 690 million which effectively means that at least 280 million children are better off today than they would have been two decades ago.
- The world is experiencing the highest levels of displacement on record. Children make up about

30% of the world's population, but more than half the world's refugees are children.

- However, it warns that the world has made less progress in reducing adolescent births and child homicide, and there has been no progress at all in reducing the number of children living in areas of violence and conflict.

44. ANTI-DUMPING DUTY PUT ON SACCHARINE

- **Context:** The Finance Ministry has, on the recommendations of the Commerce Ministry, imposed an anti-dumping duty on the import of saccharine from Indonesia. Indonesia, until recently, accounted for a large chunk of India's saccharine imports.
- Saccharine is a compound most commonly used in sugar-substitute sweeteners.

45. ELEPHANT BONDS

- **Context:** A high level government-appointed committee on trade and industry has suggested it to issue 'Elephant Bonds' to people for declaring undisclosed income to mandatorily invest 50%.

Elephant Bonds:

- Elephant Bonds are the 25-year sovereign bonds in which people declaring undisclosed income will be bound to invest 50 per cent.
- The fund, made from these bonds, will be utilized only for infrastructure projects.

46. GUJARAT SHOPS AND ESTABLISHMENTS ACT

- 'Gujarat Shops and Establishments (Regulation of Employment and Conditions of Service) Act, 2019' came into force from May 1.
- It allows that shops, commercial establishments and businesses running in state can now remain open round the clock (24X7).
- It replaces 'Gujarat Shops and Establishments Act of 1948' which prohibited shops and other businesses from remaining open between 12 am to 6 am.
- Now shops and commercial establishments employing less than ten persons will need no registration and those employing more than 10 workers will require one-time registration with no need for annual renewal.
- Working hours for women employees can be only between 6 am and 9 pm. It could be relaxed if after considering safety issues authorities make a written request.

47. COMMISSION TO LOOK INTO THE PROBLEMS FACED BY FARMERS

- **Context:** The Meghalaya government has approved setting up of a commission to look into the problems faced by farmers.
- The proposal was made by the Agriculture Department in line with the resolution passed at the 'farmers' parliament'. The 'farmers' parliament', the first of its kind in the country, was organised in Meghalaya and attended by scientists, bureaucrats, apart from farmers, to discuss issues related to the agriculture situation in the State.

48. SINO- INDIAN BILATERAL BORDER TRADE

- **Context:** The 14th edition of the annual Sino-Indian border trade recently opened at Nathu La. Every year bilateral border trade between two countries is organised four days a week for period of six months, between May 1 and November 30.
- The three open trading border posts between India and China are:
 1. **Nathu La** in Sikkim.
 2. **Shipkila** in Himachal Pradesh.
 3. **Lipulekh** (or Lipulech) in Uttarakhand.

49. DISSOLUTION OF LOK SABHA

- **Context:** The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi, has given its approval to the Resolution advising the President to dissolve the Sixteenth Lok Sabha, which was constituted on 18.05.2014.

What is dissolution of Lok Sabha?

- In India, the Lok Sabha has a five-year term, but can be dissolved earlier. According to **Article 83(2) of the Constitution**, completion of five years from the first day of its meeting amounts to dissolution of the Lower House. In this case, an election is held to elect the new Members of Parliament. The Lower House can also be dissolved earlier by the President on the advice of the Prime Minister. It can also be dissolved if the President feels that no viable government can be formed after the resignation or fall of a regime.

50. NATIONAL SCHEDULE CASTE SCHEDULE TRIBE HUB

- **Context:** NSIC signs MOU with Ministry of MSME. The MOU envisages provision of enhanced services by NSIC under its marketing, financial, technology and other support services schemes for MSMEs in the country.
- Under the scheme of **National SC-ST Hub** being implemented by NSIC on behalf of the Ministry of MSME, it will be a continued endeavour to provide assistance to SC/ST entrepreneurs through different interventions and various outreach activities with

the overall objectives to increase their participation in public procurement.

About the National Schedule Caste Schedule Tribe Hub:

- The National SC/ST Hub has been set up to provide professional support to Scheduled Caste and Scheduled Tribe Entrepreneurs to fulfil the obligations under the Central Government Public Procurement Policy for Micro and Small Enterprises Order 2012, adopt applicable business practices and leverage the Stand-Up India initiative.
- The Hub would be implemented by the Ministry of MSME through National Small Industries Corporation (NSIC), a public-sector undertaking under the administrative control of this Ministry of MSME.

51. WHAT HAPPENS IF ANY OF THE ELECTION COMMISSIONERS DISSENT

- If some difference of opinion persists even after oral deliberations and discussions, such dissent is recorded in the file. All opinions carry equal weight, which means the **CEC can be overruled by the two ECs.**
- In normal practice, while communicating the decision of the Commission in executive matters, **the majority view is conveyed to the parties concerned. The dissent remains recorded in the file.**
- In case dissent is to be recorded in a case of judicative nature, the dissenting member may like to record a separate opinion/order.

52. LIMITS ON CAMPAIGN EXPENDITURE

- **Need:** Limits on campaign expenditure are meant to provide a level-playing field for everyone contesting elections. It ensures that a candidate can't win only because she is rich.
- The **255th Report of the Law Commission** on electoral reforms argued that unregulated or under-regulated election financing could lead to "lobbying and capture, where a sort of quid pro quo transpires between big donors and political parties/candidates".
- **Imposed by:** The Election Commission imposes limits on campaign expenditure incurred by a candidate, not by political parties.
- Expenditure by a Lok Sabha candidate is capped between Rs 50 lakh and Rs 70 lakh, depending on the state she is fighting from.
- In Assembly elections, the ceiling is between Rs 20 lakh and Rs 28 lakh. This includes money spent by a political party or a supporter towards the candidate's campaign.
- However, expenses incurred either by a party or the leader of a party for propagating the party's programme are not covered.
- Candidates must mandatorily file a true account of election expenses with the EC. An incorrect account,

or expenditure beyond the ceiling can attract disqualification for up to three years under **Section 10A of The Representation of the People Act, 1951.**

53. PROJECT 'SPARROW-CBIC'

- **Context:** Online writing of Annual Performance Appraisal Report (APAR) in SPARROW (Smart Performance Appraisal Report Recording Online Window) has been launched for over 46,000 Group B & C officers of Central Board of Indirect Taxes & Customs (CBIC), working in its various formations all across the country.
- **Background:** Online writing of APARs in SPARROW for IRS (C&CE) Officers has already been implemented w.e.f. 2016-17.

What is it?

- This Project leverages modern technology for enhancing the overall efficiency and morale of the huge workforce working in Central GST and Customs formations of CBIC. The Project is an important milestone in the journey towards digitisation and paper less working.
- It brings a complete change in APAR management of such large number of Group 'B' & 'C' Officers/ Staff of CBIC, which would, in turn, lead to better HR Management.

54. MAY: LABOUR DAY

- **The Labour Day** was observed across the world on May 1, 2019. The day is also known as **International Worker's Day and May Day.**
- In **India**, the first celebration of the Labour Day was organised in **Madras** (now Chennai) by the **Labour Kisan Party of Hindustan** on May 1, 1923.

Why 1 May is observed as Labour Day?

- The Labour Day is celebrated to commemorate the happenings of May 4, 1886, the Haymarket affair (Haymarket Massacre) in the Chicago.
- It was a big event as workers were on the general strike for their eight-hour workday and police were doing their job of dispersing the general public from the crowd. Suddenly, a bomb was thrown over the crowd and police started firing over the workers and four demonstrators were killed.
- It was due to the sacrifice of these workers that eight-hours were declared as the legal time for the workers in the National Convention at Chicago in 1884 by the American Federation of Labor.
- To commemorate this event, the Second International, a pan-national organisation of socialist and communist political parties, marked 1 May as the Labour Day in 1891.

55. NATIONAL TECHNOLOGY DAY

- **Context:** Since 1999, May 11 is celebrated as National Technology Day to mark India's technological advancements.
- **The National Technology Day 2019 theme:** "Science for People and People for Science".

Significance of the day:

- On May 11, 1998, India detonated three nuclear bombs in the Indian Army's Pokhran Test Range. Dr APJ Abdul Kalam lead the Indian team of scientists to successfully test-fire the **Shakti-1** nuclear missile at Rajasthan's Pokhran test range.
- **Hansa 3**, India's first indigenous aircraft was first tested on the same day in 1998 in Bangalore.
- Successful test firing of **Trishul**, a short range missile made in India, was also done on the same day.

56. INTERNATIONAL DAY FOR BIOLOGICAL DIVERSITY

- **Context:** United Nations (UN) has adopted May 22 as The International Day for Biological Diversity (IDB) to increase understanding and awareness of biodiversity issues. Objective of observing this day is to spread awareness about species turning endangered or going to extinct.
- 2019 theme is – “Our Biodiversity, Our Food, Our Health.”
- First Biological Diversity International Day was observed by Second Committee of the UN General Assembly on December 29, 1993. Few years later in year 2000, UN General Assembly adopted 22 May as International Day for Biological Diversity (IDB).

57. BAN ON NIQAB IN SRI LANKA

- **Context:** President Maithripala Sirisena has taken the extraordinary step of effectively **banning the niqab**, a face covering worn by some Muslim women, under the country's Emergency regulations, promulgated after the Easter Sunday bombings claimed by ISIS. It makes Sri Lanka **the only country outside Europe to take such a decision**.

Issues:

- It violates Freedom of citizens.
- The ban on the niqab will be read up in its implementation to include the more commonly worn hijab and burqa, especially as there have been demands earlier by Buddhist extremists that these garments should be banned.
- It could also open up demands for banning other visible identity markers, such as caps and bears worn by men.
- It is clear the community, which is more integrated into the Sri Lankan polity and economy than the Tamils, are fearful of the repercussions of the attack, and wants to play down identity markers.

Analysis:

- It cannot be stressed enough that the problem that has erupted in Sri Lanka has not been caused by women's apparel. Banning the niqab may make the government look as if it is taking action, but it is hardly the way to meet the challenge posed by radicalism of the ISIS kind.

58. OPERATION SWIFT RETORT

- **Context:** Pakistan to observe its retaliatory action against India on Feb 27 as 'Operation Swift Retort'.

Background:

- Tensions between India and Pakistan escalated after the February 14 attack by a Pakistan-based Jaish-e-Mohammed (JeM) suicide bomber in Pulwama that killed 40 CRPF soldiers. Amid mounting outrage, the Indian Air Force (IAF) carried out a counter-terror operation, hitting what it said was a JeM training camp in Balakot, deep inside Pakistan on February 26.
- The next day, the PAF retaliated and downed a MiG-21 in an aerial combat and captured IAF Wing Commander Abhinandan Varthaman, who was later released and handed over to India on March 1.

59. SHAHEEN-II

- **What is it?** It is a land-based ballistic missile of Pakistan.
- Shaheen missile series is named after a Falcon (bird) species that lives in Pakistan's mountains.
- It is a land-based supersonic intermediate-range surface-to-surface guided ballistic missile.
- It is capable of carrying all kinds of warheads i.e. both conventional (high explosive) as well as nuclear warheads.
- It is capable of hitting targets up to 1,500-2000 kilometers. Thus is capable of reaching major cities in neighbouring India.

60. KING RAMA X

- **Context:** Thailand's King Maha Vajiralongkorn has formally taken the formal title King Rama X, the 10th king in the Chakri dynasty.
- In a tradition dating to the 18th century, the Chakri kings have held the formal title Rama, after an avatar of Hindu god Vishnu in the ancient Indian epic the Ramayana.

Key facts:

- Thailand has a **constitutional monarchy**, but royal family is highly respected by Thais and holds considerable power.
- The country also has strict laws, known as 'lese majeste', which bans public criticism of monarchy. It thus shields royal family from public view and scrutiny.

- The coronation comes at a time of political uncertainty. A general election was held on 24th March, the first since the army took control in a coup in 2014, but a new government has yet to be declared.

61. SEA OF JAPAN

- Why in News?** N. Korea launches ‘barrage’ of short-range projectiles into the Sea of Japan.

About Sea of Japan:

- It is the marginal sea between the Japanese archipelago, Sakhalin, the Korean Peninsula and Russia.
- The Japanese archipelago separates the sea from the Pacific Ocean.
- It is bordered by Japan, Korea (North and South) and Russia.
- Like the Mediterranean Sea, it has almost no tides due to its nearly complete enclosure from the Pacific Ocean.



62. CHILIKI LAKE

- Context:** The extremely severe cyclone, Fani, has created four new mouths in Chilika Lake, Asia's largest brackish water lake, connecting to Bay of Bengal. Chilika lagoon had only two active mouths — the point where it meets the sea before Fani hit the Odisha coast on May 3. Four new mouths have opened due to wave energy with high tidal prism.

About Chilika Lagoon:

- It is the largest coastal lagoon in India and the second largest lagoon in the world after The New Caledonian barrier reef in New Caledonia.
- It is the largest wintering ground for migratory waterfowl found anywhere on the Indian sub-continent.
- It is one of the hotspots of biodiversity in the country, and some rare, vulnerable and endangered species listed in the IUCN Red List of threatened Animals inhabit in the lagoon for atleast part of their life cycle.
- On account of its rich bio-diversity and ecological significance, Chilika was designated as the 1st “Ramsar Site” of India.

- The **Nalaban Island** within the lagoon is notified as a Bird Sanctuary under Wildlife (Protection) Act, the National Wetlands, mangroves and coral reefs Committee of Ministry of Environment & Forests, Government of India, have also identified the lagoon as a priority site for conservation and management.
- Chilika Lagoon lies in the districts of Puri, Khurda and Ganjam of Odisha State along the eastern coast of India. It is well connected to the Chennai and Kolkata through National Highway No 5, and the Chennai Kolkata rail line passes along the western bank of the Lagoon Balugaon, with Balugaon, Chilika and Rambha being the main stations along the Western shoreline of the lagoon.

63. STRAIT OF HORMUZ

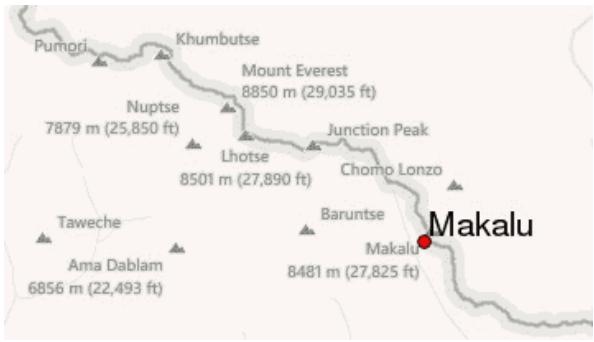
- It is the waterway separates Iran and Oman, linking the Gulf to the Gulf of Oman and the Arabian Sea.** The Strait is 21 miles (33 km) wide at its narrowest point, but the shipping lane is just two miles (three km) wide in either direction.

Importance of Strait of Hormuz:

- 5 million barrels per day (bpd) of seaborne oil passed through the waterway in 2016. That was about 30 per cent of crude and other oil liquids traded by sea in 2016. About 17.2 million bpd of crude and condensates were estimated to have been shipped through the Strait in 2017 and about 17.4 million bpd in the first half of 2018.
- With global oil consumption standing at about 100 million bpd, that means almost a fifth passes through the Strait.
- Most crude exported from Saudi Arabia, Iran, the UAE, Kuwait and Iraq — all members of the Organization of the Petroleum Exporting Countries — is shipped through the waterway.
- It is also the route used for nearly all the liquefied natural gas (LNG) produced by the world's biggest LNG exporter, Qatar.

64. MT MAKALU

- Why in News?** 18 member Indian Army Mountaineering Expedition team to Mt Makalu (8485m) successfully scaled the peak on 16 May 2019.
- About Mt Makalu:** Among the eight mountains in Nepal above 8000m, Mt. Makalu is the fourth tallest in Nepal and fifth highest Peak on the Earth with its height 8,463m. Mt. Makalu resides in the eastern Himalayas range just 19Km southeast of the giant Mt. Everest in the border of Nepal and China. At the base of Mt. Makalu, there lies a natural wonder: The Barun Valley.



65. MT. TENCHENKHANG

- Why in News?** The National Cadet Corps (NCC) Girls' Mountaineering Expedition to Mt. Tenchenkhang in Sikkim was Recently 'Flagged Off'.

About MT. Tenchenkhang:

- The 6010 metres tall peak is located in Western Sikkim.

66. MOUNT AGUNG VOLCANO

- Why in News?** Located on the Indonesian holiday island of Bali, it erupted recently.
- Mount Agung or Gunung Agung is a currently active volcano in Bali, Indonesia, southeast of Mt Batur volcano, also in Bali. Gunung Agung stratovolcano is the highest point on Bali. It dominates the surrounding area, influencing the climate, especially rainfall patterns.

67. EAST CONTAINER TERMINAL AT THE COLOMBO PORT

- Context:** Sri Lanka, Japan and India have signed an agreement to jointly develop the East Container Terminal at the Colombo Port. The joint initiative is estimated to cost between \$500 million and \$700 million.
- As per the agreement signed, the Sri Lanka Ports Authority (SLPA) retains 100% ownership of the East Container Terminal (ECT), while the Terminal Operations Company is jointly owned.
- Sri Lanka will hold a 51% stake in the project and the joint venture partners will retain 49%.
- The ECT is located some three km away from the China-backed international financial city, known popularly as "port city".

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