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for

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2020

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1. Geography

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1.1.China begins work on railway up to Arunachal border

- China has begun work on a strategically significant railway line - its second major rail link to Tibet - that will link Sichuan province with Nyingchi, which lies near the border with India's Arunachal Pradesh.
- The importance of the project is two-fold. Like the Qinghai-Tibet railway line, which in 2006 connected Lhasa to the hinterland, this will be the second such route linking the Tibet Autonomous Region (TAR) to the hinterland.
- Secondly, it will run right up to Nyingchi near the border with India, which it will link to both Lhasa and Chengdu, the provincial capital of Sichuan.
- The entire line will run from Chengdu to Lhasa, connecting the two capitals of TAR and Sichuan and cutting the journey from 48 hours to 13 hours.
- If a scenario of a crisis happens at the border, the railway can act as a 'fast track' for the delivery of strategic materials.
- The first segment of the line within Sichuan province, from Chengdu to Yaan, was completed in December 2018.
- Work on the 1,011 km-section from Yaan to Nyingchi, which was formally launched this week, and will be finished in 2030.
- The 435 km section from Nyingchi-Lhasa segment has been under construction since 2015, and will be finished by the end of next year.
- This includes a 525 metre-long bridge across the Yarlung Zangbo River, as the Brahmaputra is called in Tibet, which has been built at a height of 3,350 metres.
- The official Xinhua news agency said this makes it the world's highest concrete-filled steel tube arch railway bridge.



1.2.North Korea Slams Global Nuclear Watchdog – IAEA As "Marionette" Of West

- Pyongyang has gradually built an atomic stockpile after abandoning the Non-Proliferation Treaty in 2003, and has tested several nuclear bombs in the years since.
- North Korea has accused the UN agency responsible for regulating atomic energy of being a puppet of hostile countries after a new report said the isolated nation's nuclear weapons stockpile was breaking international law.
- The International Atomic Energy Agency, whose inspectors have not been allowed into the country for more than a decade, said Pyongyang's weapons programme was "deeply regrettable".

International Atomic Energy Agency (IAEA)

- It is an autonomous intergovernmental organization dedicated to increasing the contribution of atomic energy to the world's peace and well-being and ensuring that agency assistance is not used for military purposes.
- The IAEA and its director general, Mohamed El Baradei, won the Nobel Prize for Peace in 2005.
- The agency was established by representatives of more than 80 countries in October 1956, nearly three years after U.S. President Dwight D. Eisenhower's "Atoms for Peace" speech to the United Nations General Assembly, in which Eisenhower called for the creation of an international organization for monitoring the diffusion of nuclear resources and technology.
- The IAEA's statute officially came into force on July 29, 1957
- Its activities include research on the applications of atomic energy to medicine, agriculture, water resources, and industry; the operation of conferences, training programs, fellowships, and publications to promote the exchange of technical information and skills; the provision of technical assistance, especially to less-developed countries; and the establishment and administration of radiation safeguards.
- As part of the Treaty on the Non-Proliferation of Nuclear Weapons (1968), all non-nuclear powers are required to negotiate a safeguards agreement with the IAEA; as part of that agreement, the IAEA is given authority to monitor nuclear programs and to inspect nuclear facilities.
- The General Conference, consisting of all members meets annually to approve the budget and programs and to debate the IAEA's general policies;
- It is also responsible for approving the appointment of a director general and admitting new members.
- The Board of Governors, which consists of 35 members who meet about five times per year, is charged with carrying out the agency's statutory functions, approving safeguards agreements, and appointing the director general.
- The day-to-day affairs of the IAEA are run by the Secretariat, which is headed by the director general, who is assisted by six deputies; the Secretariat's departments include nuclear energy, nuclear safety, nuclear sciences and application, safeguards, and technical cooperation.
- Headquarters are in Vienna.

Treaty on the Non-Proliferation of Nuclear Weapons or Nuclear Non-Proliferation Treaty

- An agreement of July 1, 1968, signed by the United Kingdom, the United States, the Soviet Union, and 59 other states, under which the three major signatories, which possessed nuclear weapons, agreed not to assist other states in obtaining or producing them.
- The treaty became effective in March 1970 and was to remain so for a 25-year period.
- Additional countries later ratified the treaty.
- Only five countries (India, Pakistan, Israel, South Sudan and North Korea) have not signed the treaty.

- The treaty was extended indefinitely and without conditions in 1995 by a consensus vote of 174 countries at the United Nations headquarters in New York City.
- The Non-Proliferation Treaty is uniquely unequal, as it obliges nonnuclear states to forgo development of nuclear weapons while allowing the established nuclear states to keep theirs.
- It has been accepted because, especially at the time of signing, most nonnuclear states had neither the capacity nor the inclination to follow the nuclear path, and they were well aware of the dangers of proliferation for their security.
- It was understood in 1968 that, in return for their special status, the nuclear states would help the nonnuclear states in the development of civilian nuclear power (although in the event the distinction between civilian and military nuclear technology was not so straightforward) and also that the nuclear states would make their best efforts to agree on measures of disarmament.
- In the 2005 Review Conference of the Parties to the Treaty on Non-Proliferation of Nuclear Weapons, this inequality was a major complaint against the established nuclear powers.
- The treaty continues to play an important role in sustaining the international norm against proliferation, but it has been challenged by a number of events, including:
 - ✓ North Korea's withdrawal from the treaty in 2003 as it sought to acquire nuclear weapons.
 - ✓ Evidence of the progress Iraq made in the 1980s on its nuclear program despite being a signatory to the treaty.
 - ✓ Allegations about uranium enrichment facilities in Iran, yet another signatory to the treaty.
- The credibility of the nonproliferation norm has also been undermined by the ability of India and Pakistan to become declared nuclear powers in 1998 without any serious international penalty and by India establishing its own special arrangements as part of a bilateral deal with the United States in 2008.

1.3.Sino-British Joint Declaration

- Context: Britain accused China of breaking its international treaty obligations, after four pro-democracy lawmakers were ousted from Hong Kong's legislature on security grounds.

Sino-British Joint Declaration

- It is an agreement signed by Britain and China in 1984 to settle the future of Hong Kong.
- The two governments agreed China would reassume control of Hong Kong, which was occupied by Britain after the Opium War in 1840, from July 1, 1997.

Main points of the joint declaration

- It states that China's basic policies regarding Hong Kong which "will remain unchanged for 50 years", including the promise that the city would retain a high degree of autonomy.
- The basic policies are detailed in Annex I and stipulated in the Basic Law, the city's mini-constitution that was put into effect by the National People's Congress in 1990.
- The declaration also states that Hong Kong's legal and judicial system would also be unchanged for 50 years after 1997.



- It held that Britain would be responsible for the administration of Hong Kong until 1997 and the Chinese government would give its cooperation.
- The declaration was later deposited with the United Nations.
- Britain assured that it would take issue with any breach of the Sino-British Joint Declaration.

Is there any link between the joint declaration and the Basic Law?

- The joint declaration states that Beijing will appoint the chief executive based on the results of “elections or consultations to be held locally”.
- The declaration promised that local people would administer the Special Administrative Region.
- In the Basic Law, universal suffrage is said to be the “ultimate aim” in elections for Hong Kong’s chief executive.

Is the joint declaration still valid now that Beijing governs Hong Kong?

- The high degree of autonomy that Beijing pledged to grant Hong Kong has been a thorny subject since the 1997 handover.
- The issue was exacerbated in June 2014 when the State Council released a white paper stating that Beijing had “comprehensive jurisdiction” over Hong Kong.
- In November 2014, China told Britain that the declaration was “now void and covered only the period from the signing in 1984 until the handover in 1997”.
- China argues Britain has no right to monitor the implementation of the agreement after 1997, but according to Britain the agreement remained in effect and is a legally binding agreement that must be honoured.

1.4. Why there are armed clashes in Ethiopia’s Tigray, and what it means for Horn of Africa?

- Context: Ethiopia is on the brink of a civil war after Ethiopia’s Prime Minister announced that he had ordered troops to counter an allegedly violent attack by armed forces in the country’s northern Tigray region. The domestic conflict in Ethiopia comes after several smaller conflicts that have been festering for months that could now spiral and impact the Horn of Africa region at large.

History

- Africa’s oldest nation state, Ethiopia has long been plagued by discord between its more than 80 ethnic groups.
- The country was an absolute monarchy until the 1974 socialist revolution that deposed Emperor Haile Selassie.
- It became a multi-ethnic federation in 1991, when a TPLF-led alliance of rebels overthrew the Marxist military regime that followed Selassie.
- The Tigrayans, though comprising just 6% of the population, dominated national politics, infuriating the bigger Oromo and Amhara communities.

- Hailemariam Desalegn quit as prime minister in 2018 after failing to quell violent protests that began in late 2015 and claimed several hundred lives.
- The ruling Ethiopian People's Revolutionary Democratic Front named Abiy, an Oromo, as his successor.
- Conflict between Tigray authorities and the federal government can be traced to when Abiy Ahmed came to power in 2018.
- The Tigray region is wealthier than other parts of the country, and more importantly, has a well-trained army.
- The authority of the Tigray officials has considerably reduced since Abiy took office, making their waning influence a point of contention.
- The structure of Ethiopia's federal system allows the country's ten regions significant autonomy.
- These regions also have their own parliaments, their own security forces, and the right to a referendum for independent rule.

Impact on the Horn of Africa

- If the conflict between the Ethiopian federal government and Tigray authorities exacerbates, it will spill over to neighbouring countries in the Horn of Africa.
- Eritrea may be hardest hit, due to its proximity to Tigray.
- Many veterans from the TPLF who participated in the Ethiopian-Eritrean war between 1998 and 2000 are now part of the Tigray region's paramilitary forces and there is lingering resentment between these veterans and Eritrea.
- Ethiopia has also been engaged in a long-standing conflict with Egypt over the construction of the Grand Ethiopian Renaissance Dam over the Blue Nile, with Sudan having been inadvertently drawn into this conflict over the course of the dam's development.
- If the violence and conflict spills outside Ethiopia's borders, it may potentially destabilize the Horn of Africa region.
- The US and China have several strategic military bases in that region, the closest being Djibouti.
- If these military bases were to be impacted by the disturbances in any way, it may cause foreign powers to get militarily involved in the region and the conflict.

1.5.Ladakh's glacial lake outburst

- Context: In August 2014, a glacial lake outburst flood hit the village of Gya in Ladakh, destroying houses, fields and bridges. Using remote sensing data, researchers from Germany have mapped the evolution of Gya glacial lake and note the cause of the flood.

Glacial Lake Outburst Floods (GLOF)

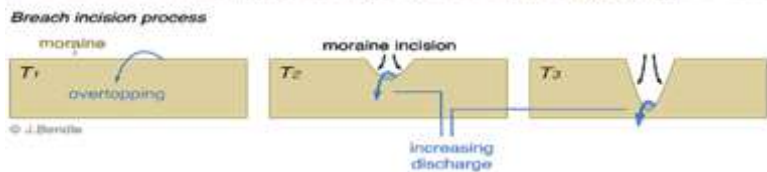
- Glacial lakes are common in the high elevation of glacierised basin.
- They are formed when glacial ice or moraines or natural depressions impound water.

- There are varieties of such lakes, ranging from melt water ponds on the surface of glacier to large lakes in side valleys dammed by a glacier in the main valley.
- These lakes normally drain their water through seepage in front of the retreating glacier.
- The moraine creates topographic depression in which the melt water is generally accumulated leading to formation of glacial lake.
- When this lake is watertight, melt waters will accumulate in the basin until seepage or overflow limits the lake level.
- Such moraine-dammed lakes appear to be the most common type of glacial lakes.
- The impoundment of the melt may sometimes be unstable, leading to sudden release of large quantities of stored water.

- Failure of these ice or moraine dams leading to disastrous destruction events has been documented throughout the world.



- The cause of the flood was not a spillover but rather a tunneling drainage process.
- Imagine a bucket full of water. It can overflow when you drop a stone, or the water can drain if there is a hole under the bucket.



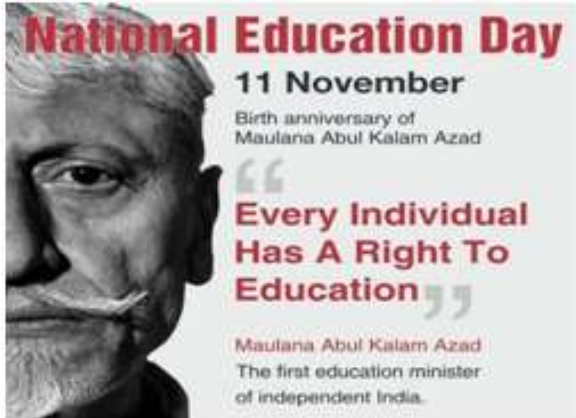
- Similarly, here the flooding did not happen due to the spillovers due to an avalanche or landslide, rather there was a thawing of the ice cores in the moraine [a field of dirt and rocks that have been pushed along by the glacier as it moves] which drained through the subsurface tunnels.
- Such thawing of ice cores may accelerate in the future due to global climate change, and there is an urgent need to use multiple methods for better risk assessment and early warning.
- It is almost certain that other glacial lake outburst floods will happen all over the Indian Himalaya. However, not all of these events have catastrophic outcomes. It largely depends on urban planning, the size of the lake, the distance between the lake and affected villages, the valley section and some more aspects.
- In some cases, cloudbursts can also trigger glacial lake outburst flood events like in the Kedarnath disaster in 2013.
- Flash floods caused by the outburst of glacial lakes, called as Glacial Lake Outburst Flood (GLOF), are well known in Himalaya where such lakes had often been formed by landslides.
- GLOFs have immense potential of flooding in downstream areas, causing disastrous consequences due to release of large volumes of water in very short interval of time.

- Most often, the consequences arising out of such situations are highly unpredictable primarily due to lack of availability of sufficient data regarding rainfall intensity, location of landslide, impounded volume and area and physical conditions of lakes/ water bodies.
- Therefore, Glacial Lakes and Water Bodies in Himalayan Region need to be closely monitored.

2. History

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2.1. National Education Day



- Azad in 1912 began publishing a weekly Urdu-language newspaper in Calcutta, Al-Hilal ("The Crescent").
- The paper quickly became highly influential in the Muslim community for its anti-British stance, notably for its criticism of Indian Muslims who were loyal to the British.
- Al-Hilal was soon banned by British authorities, as was a second weekly newspaper that he had started.
- By 1916 he had been banished to Ranchi, where he remained until the beginning of 1920.
- Back in Calcutta, he joined the Indian National Congress and galvanized India's Muslim community through an appeal to pan-Islamic ideals.
- He was particularly active in the short-lived Khilafat movement (1920–24), which defended the Ottomansultan as the caliph (the head of the worldwide Muslim community) and even briefly enlisted the support of Gandhiji.
- Azad became the youngest person to serve as the President of the Indian National Congress at the age of 35.
- Azad and Gandhi became close, and Azad was involved in Gandhi's various civil-disobedience (satyagraha) campaigns, including the Salt March (1930).
- He was imprisoned several times between 1920 and 1945, including for his participation in the anti-British Quit India campaign during World War II.
- Azad was president of the Congress Party in 1923 and again in 1940–46—though the party was largely inactive during much of his second term, since nearly all of its leadership was in prison.
- After the war Azad was one of the Indian leaders who negotiated for Indian independence with the British. He tirelessly advocated for a single India that would embrace both Hindus and Muslims while strongly opposing the partition of British India into independent India and Pakistan.
- He later blamed both Congress Party leaders and Mohammed Ali Jinnah, the founder of Pakistan, for the ultimate division of the subcontinent.

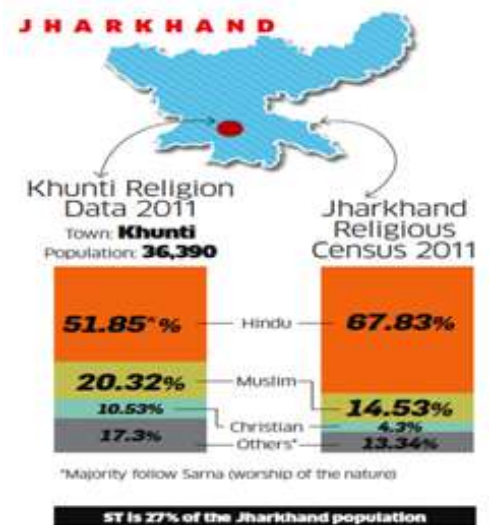
- After the two separate countries were established, he served as minister of education in the Indian government of Jawaharlal Nehru from 1947 until his death.
- His autobiography, India Wins Freedom, was published posthumously in 1959.
- In 1992, Azad was awarded the Bharat Ratna, India's highest civilian award.

2.2. Jharkhand is seeking a separate religious code for Sarna tribals

- Context: Jharkhand government convened a special session and passed a resolution to send the Centre a letter to recognise Sarna religion and include it as a separate code in the Census of 2021.

Sarna religion

- The followers of Sarna faith believe pray to nature.
- The holy grail of the faith is "Jal, Jungle, Zameen" and its followers pray to the trees and hills while believing in protecting the forest areas.
- Jharkhand has 32 tribal groups of which eight are from Particularly Vulnerable Tribal Groups.
- While many follow Hindu religion, some have converted to Christianity – this has become one of the planks of demanding a separate code "to save religious identity"
- It is believed that 50 lakhs tribal in the entire country put their religion as 'Sarna' in the 2011 census, although it was not a code.



Issue

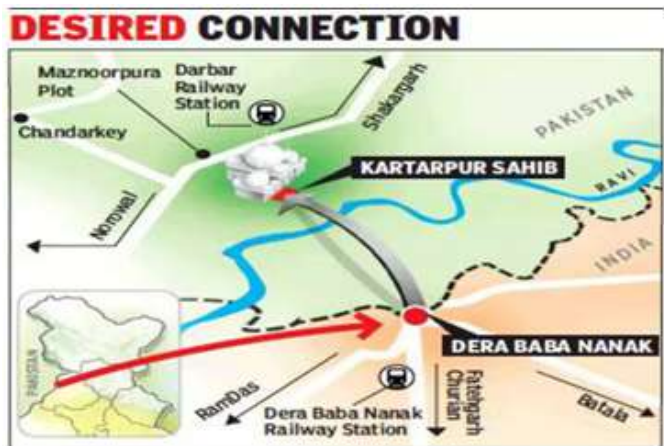
- Many of the tribals who follow this faith have later converted to Christianity
- The state has more than 4% Christians most of whom are tribals.
- Some who still follow the Sarna faith believe the converted tribals are taking the benefits of reservation as a minority as well as the benefits given to Schedule Tribes.
- They also believe that benefits should be given specifically to them and not those who have converted.
- State govt says the population of tribals in the state had declined from the 38.3 per cent in 1931 to 26.02 per cent in 2011.
- It cited that one of the reasons for this was tribals who go for work in different states not being recorded in the Census.
- In other states, they are not counted as Tribals.
- The separate code will ensure recording of their population.
- The declining numbers affect the constitutional rights given to them and how the rights will be bestowed upon the Adivasis under 5th Schedule of the Constitution.

Separate code

- The protection of their language and history is an important aspect with tribals.
- Between 1871 and 1951, the tribals had a different code.
- However, it was changed around 1961-62.
- It is believed that when today the entire world is focusing on reducing pollution and protecting the environment, it is prudent that Sarna becomes a religious code as the soul of this religion is to protect nature and the environment.

2.3.Sikhs in Pakistan mark first anniversary of Kartarpur Corridor

- Context: Sikhs in Pakistan held rituals at Gurdwara Darbar Sahib to mark the first anniversary of the inauguration of the historic Kartarpur Corridor.
- On the 550th birth anniversary of Guru Nanak Dev Ji, Kartarpur Corridor will be opened to visit Kartarpur Sahib Gurudwara.
- On 24 October 2019 India has signed the agreement with Pakistan on the modalities of the operationalization of the Kartarpur Sahib Corridor at Zero Point, the International Boundary, Dera Baba Nanak.
- On 22 November 2018, the Union Cabinet passed a resolution to celebrate the historic occasion of the 550th Birth Anniversary of Guru Nanak Dev Ji across the globe.



About Kartarpur Sahib Gurudwara

- Kartarpur Sahib was established by Guru Nanak Dev Ji, the Sikh Guru in 1522.
- On 22 September 1539 Gurunanak Dev Ji took the last breath in this gurudwara and spent around 18 years of his life.
- The Gurudwara was washed away by floods of the river Ravi (Rabi) and the present Gurudwara was established by Maharaja Ranjit Singh.
- Kartarpur Sahib is located in Narowal district of Pakistan.
- It is three to four kilometres away from Dera Baba Nanak in Gurdaspur district of Punjab, India and about 120 km from Lahore.
- The langar was first started in Kartarpur Sahib Gurudwara by Guru Nanak Dev Ji.
- The Langar tradition is also known as 'Guru kaLangar', the Gurus Kitchen.
- Whoever came here, Guru Nanak Dev Ji did not allow him to go without eating.
- At the time of the partition of India-Pakistan, gurudwara moved to Pakistan, so citizens of India need a visa to visit Kartarpur Sahib.

- Those who are not able to go to Pakistan, they see with the help of binoculars in the Gurudwara Shaheed Baba SidhSaun Randhawa located at Dera Baba Nanak at the Indian border.
- Kartarpur Sahib Gurudwara is visible from the border towards India.
- In Pakistan, the government takes care that the grass does not accumulate around this gurudwara, so it keeps cutting and pruning around it so that it can be seen well from India and there is no problem for the devotees.

2.4. World Ayurveda Day 2020

- World Ayurveda Day 2020: Theme.
- This year India will celebrate Ayurveda Day under the theme of 'Ayurveda for Covid-19'.

World Ayurveda Day 2020: History

- The practice to observe the Ayurveda Day, which falls on Dhanwantri Jayanti, was started by the Union Ministry of Ayush (Ayurveda, Yoga and Naturopathy, Unani, Sidda, and Homoeopathy) in 2016.
- Dhanvantari Jayanti was preferred for the celebration of Ayurveda Day to nationalise this system of medicine and to make it global.

World Ayurveda Day 2020: Celebration

- The Ministry of Ayush has decided to organise various activities marking the fifth 'Ayurveda Day', with a special focus on concerns related to the present pandemic.
- A webinar on the theme of 'Ayurveda for Covid-19 pandemic will be organised on 'Ayurveda Day'.

About Dhanwantari Jayanti

- Dhanwantari Jayanti, the birthday of Lord Dhanwantari is celebrated on the 13th lunar day in Aswini Month.
- It is believed that on this day, Lord Dhanwantari emerged with Amurutha Kalasam.
- Lord Dhanvantari is an Avatar of Lord Vishnu.
- He appears in the Vedas and Puranas as the physician of the gods and the god of Ayurvedic medicine.

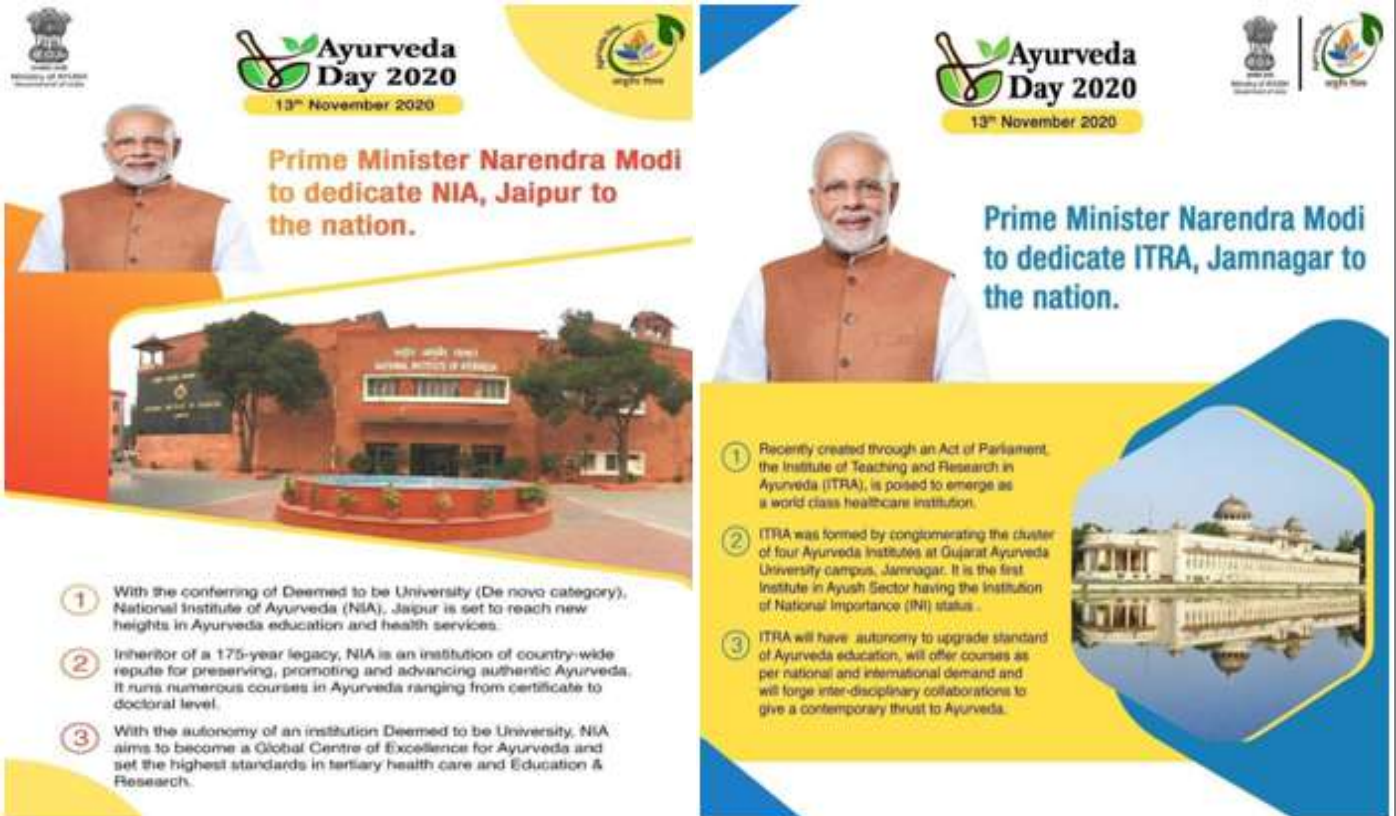
AYUSH Ministry approved manufacturing of Ayurvedic COVID-19 drug

- Ministry of Ayush approved the manufacturing of Ayurvedic drug called "Aastha-15".
- The drug was developed by Dalmia Centre for Research and Development.
- The Aastha-15 is to be made available in first phase through prescriptions for mild and moderate COVID-19 cases.
- The clinical trials for Aastha-15 began in May 2020.
- These Ayurvedic drugs also have to undergo three phases of clinical trials just like the Allopathic drugs.

International Conference on Standardisation of AYUSH Terminologies

- The ICoSDiTAUS 2020 was held in New Delhi in February 2020.

- It was the biggest international event that focuses on standardisation of traditional medicines.
- Around 16 countries came together at the conference.
 - ✓ They were India, Iran, Switzerland, Japan, Jamaica, Uzbekistan, Bhutan, Ghana, Qatar, Equatorial Guinea, Myanmar, Cuba, Curacao, Serbia, Mauritius and Sri Lanka.



Ayurveda Day 2020
13th November 2020

Prime Minister Narendra Modi to dedicate NIA, Jaipur to the nation.

Prime Minister Narendra Modi to dedicate ITRA, Jamnagar to the nation.

- 1 With the conferring of Deemed to be University (De novo category), National Institute of Ayurveda (NIA), Jaipur is set to reach new heights in Ayurveda education and health services.
- 2 Inheritor of a 175-year legacy, NIA is an institution of country-wide repute for preserving, promoting and advancing authentic Ayurveda. It runs numerous courses in Ayurveda ranging from certificate to doctoral level.
- 3 With the autonomy of an institution Deemed to be University, NIA aims to become a Global Centre of Excellence for Ayurveda and set the highest standards in tertiary health care and Education & Research.

- 1 Recently created through an Act of Parliament, the Institute of Teaching and Research in Ayurveda (ITRA), is poised to emerge as a world class healthcare institution.
- 2 ITRA was formed by conglomerating the cluster of four Ayurveda Institutes at Gujarat Ayurveda University campus, Jamnagar. It is the first Institute in Ayush Sector having the Institution of National Importance (INI) status.
- 3 ITRA will have autonomy to upgrade standard of Ayurveda education, will offer courses as per national and international demand and will forge inter-disciplinary collaborations to give a contemporary thrust to Ayurveda.



Ayurveda Day 2020
13th November 2020

Prime Minister Narendra Modi to dedicate two future-ready Ayurveda institutions to the nation.

National Institute of Ayurveda (NIA), Jaipur:
An Ayurveda Institution for Teaching and Research with country-wide repute. NIA gets a shot in the arm with Deemed to be University (De novo Category) status.

Institute of Teaching and Research in Ayurveda (ITRA), Jamnagar:
Created through an Act of Parliament, ITRA becomes the first institute in Ayush Sector with the status of Institution of National Importance (INI).

With the increased operational and academic autonomy, ITRA and NIA will help Ayurveda take giant strides into the mainstream of public health.

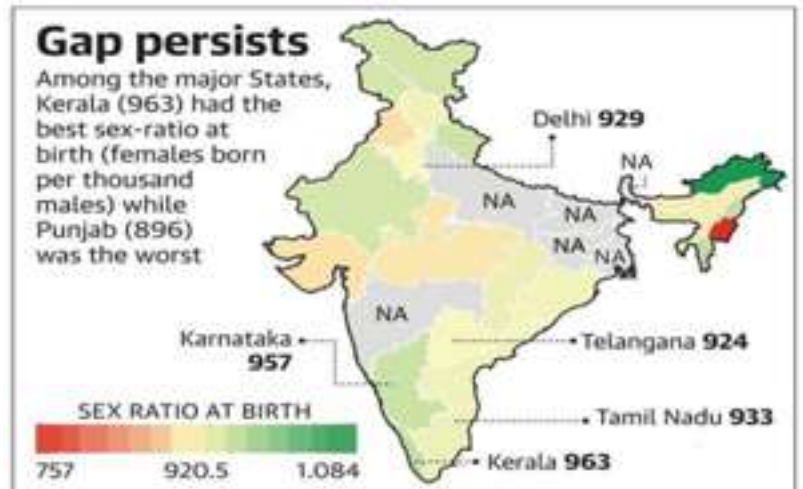
3. Polity

Click [here](#) to watch the following questions on YouTube

3.1. Vital statistics of India based on the Civil Registration System- 2018

- Sex ratio at birth is number of females born per thousand males.
- The prescribed time limit for registration of birth or death is 21 days.
- Some states however register the births and deaths even after a year.
- The birth or death certificate is issued free of charge by the Registrar concerned if reported within 21 days.
- If reported within 21-30 days, it can be registered on payment of the prescribed fee.
- If the duration is more than 30 days but within a year, it can be registered with the written permission of the prescribed authority and on production of an affidavit made before a notary public or any other officer authorized by the State government and on payment of a fee.

- Births and deaths reported after one year of occurrence shall be registered only on an order of the Magistrate of the First Class after verifying the correctness and on payment of the prescribed fee.
- The ratio was determined on the basis of data provided by 30 States and Union Territories as the requisite information from six States namely Bihar, Jharkhand, Maharashtra, Sikkim, Uttar Pradesh and West Bengal is not available.
- The report is published by the Registrar General of India.



- Arunachal Pradesh recorded the best sex ratio in the country while Manipur recorded the worst sex ratio.

- State performances:

- | | |
|---------------------------------------------------------------------|---------------------------|
| ✓ Arunachal Pradesh recorded 1,084 females born per thousand males; | ✓ Lakshadweep (839) |
| ✓ Nagaland (965) | ✓ Daman & Diu (877) |
| ✓ Mizoram (964) | ✓ Punjab (896) |
| ✓ Kerala (963) | ✓ Gujarat (896) |
| ✓ Karnataka (957) | ✓ Delhi (929) |
| ✓ Manipur (757) | ✓ Haryana (914) |
| | ✓ Jammu and Kashmir (952) |

3.2. Accused has right to 'default' bail if investigation not completed in time: Supreme Court

- An accused, irrespective of the merits of the case against him, should be granted "default" or "compulsive" bail if the investigating agency does not complete the probe within a prescribed time limit, the Supreme Court has held in a judgment.
- Even in England, even a person accused of grave offences such as treason could not be indefinitely detained in prison till commencement of the trial.
- The court held that an accused has an "indefeasible right" to default bail under Section 167(2) of the Code of Criminal Procedure if the probe agency failed to complete the investigation on time.
- Under Section 167, an accused can be detained in custody for a maximum of 90 days for a crime punishable with death, life imprisonment or a sentence of over 10 years.
- It is 60 days of detention if the investigation relates to any other offence.
- In some special statutes such as the Narcotic Drugs and Psychotropic Substances (NDPS) Act, the period of detention can extend to 180 days.
- These time-limits were set to ensure that agencies do not use the ruse of an ongoing probe to keep people behind bars indefinitely.
- The deadlines in the Section balance the need for sufficient time to complete the probe even as it recognizes the need to protect the personal liberty of the accused.
- Personal liberty is a fundamental right under Article 21 of the Constitution.
- Section 167(2) provides for a clear mandate that the investigative agency must collect the required evidence within the prescribed time period, failing which the accused can no longer be detained.
- This ensures that the investigating officers are compelled to act swiftly and efficiently without misusing the prospect of further remand.
- This also ensures that the Court takes cognizance of the case without any undue delay from the date of giving information of the offence
- Magistrates have to mandatorily inform the accused persons, especially those from the poor sections of the society, of their statutory right to apply for default bail.
- Any court, which adjourns an application for bail to favor the prosecution, is acting in violation of the legislative mandate.
- Section 167(2) has three clear objectives – fair trial, expeditious investigation and the setting down of a rationalized procedure to protect the poor sections of the society.
- The judgment came in an appeal filed by a man accused under the NDPS Act in 2018.
- He was granted default bail by the trial court after 180 days of custody.

3.3. What is contempt of court, and why does the A-G have to consent to these proceedings.

- Context: A stand-up comedian will face contempt of court charges for his tweets following the Supreme Court's decision to grant interim bail to television anchor.
- Attacking the Supreme Court of India unjustifiably and brazenly attracts punishment under the Contempt of Courts Act, 1971.
- Contempt of court seeks to protect judicial institutions from motivated attacks and unwarranted criticism, and as a legal mechanism to punish those who lower its authority.
- According to the Contempt of Courts Act, 1971, contempt of court can either be civil contempt or criminal contempt.
- Civil contempt means willful disobedience of any judgment, decree, direction, order, writ or other process of a court, or willful breach of an undertaking given to a court.
- Criminal contempt, on the other hand, is attracted by 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.

But why is the A-G's consent needed to initiate contempt of court proceedings?

- Subsection 1 of Section 15 (Cognizance of criminal contempt in other cases) of The Contempt of Courts Act, 1971 reads:
- "In the case of a criminal contempt, other than a contempt referred to in Section 14 ("Procedure where contempt is in the face of the Supreme Court or a High Court"), the Supreme Court or the High Court may take action on its own motion or on a motion made by (a) the Advocate-General, or (b) any other person, with the consent in writing of the Advocate-General..."

What is the punishment for contempt of court?

- According to the Act, 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.
 - ✓ The Supreme Court recently found an activist-advocate guilty of contempt of court for two of his tweets, and imposed a token fine of Re 1 on him after he refused to apologise.

What is the statutory basis for contempt of court?

- There were pre-Independence laws of contempt in India.
- Besides the early High Courts, the courts of some princely states also had such laws.

Landmark pact
 A look at some features of the Regional Comprehensive Economic Partnership (RCEP), which was signed on Sunday



Virtual signing: A screen grab showing Philippines' Secretary of Trade and Industry Ramon Lopez holding up the agreement on Sunday. • AFP

- Members of the RCEP include all ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Vietnam, Laos, Myanmar and Cambodia) along with China, Japan, South Korea and Australia
- The members account for nearly 30% of the global GDP
- The RCEP includes provisions on trade in goods and services, intellectual property, e-commerce, telecommunications, small and medium enterprises, and other issues
- The three largest economies in the pact, China, Japan and South Korea, are part of a free trade agreement for the first time
- On November 4, 2019, India walked out of the agreement as negotiations failed to address the country's issues and concerns

- When the Constitution was adopted, contempt of court was made one of the restrictions on freedom of speech and expression.
- Separately, Article 129 of the Constitution conferred on the Supreme Court the power to punish contempt of itself.
- Article 215 conferred a corresponding power on the High Courts.
- The Contempt of Courts Act, 1971, gives statutory backing to the idea.

What is not contempt of court?

- Fair and accurate reporting of judicial proceedings will not amount to contempt of court.
- Nor is any fair criticism on the merits of a judicial order after a case is heard and disposed of.

Is truth a defence against a contempt charge?

- For many years, truth was seldom considered a defence against a charge of contempt.
- There was an impression that the judiciary tended to hide any misconduct among its individual members in the name of protecting the image of the institution.
- The Act was amended in 2006 to introduce truth as a valid defence, if it was in public interest and was invoked in a bona fide manner.

3.4. India, ASEAN to expand trade despite RCEP walkout

- Context: Fifteen Asia-Pacific countries – with a combined gross domestic product (GDP) of over \$26 trillion and comprising nearly one-third of the world's population – signed the world's biggest trade deal at the 37th Association of Southeast Asian Nations (Asean) Summit on November 15.
- ASEAN: It is an intergovernmental organization of ten Southeast Asian countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.
- The bloc's biggest success has been promoting economic integration among members.
- It has also signed six free trade agreements with other regional economies.
- ASEAN has struggled to form a cohesive response to China's claims in the South China Sea, which conflict with those of several members.

- In November 2019, PM had told the RCEP summit that India was walking out of the Free Trade Agreement after negotiations for more than six years, as it did not address India's concerns about being flooded by goods from China, trade deficits and need to protect its agricultural and dairy sectors.
- The remainder of the RCEP countries then continued with the talks minus India, and have decided to sign the FTA, which will encompass about 30% of global trade.
- They are expected to leave in a clause allowing India to rejoin at a later date.
- ASEAN is India's fourth largest trading partner with about \$86.9 Bn in trade.
- However, experts have warned that once the FTA is adopted, trade between RCEP nations will assume primacy, which could affect trade ties with other countries including India.
- All countries stressed the importance of "a rules-based order in the region including through upholding adherence to international law, especially the UNCLOS.
- The leaders affirmed the importance of maintaining and promoting peace, stability, safety and security in the South China Sea in particular freedom of navigation and over flight.
- The agreement means a lot for China, as it will give it access to Japanese and South Korean markets in a big way, as the three countries have not yet agreed on their FTA.
- Concerns regarding China were reflected as it is understood that staying out of RCEP may interfere with India's bilateral trading with the RCEP member-countries.



3.5.UAE to extend 'golden' visa's eligibility criteria

- The United Arab Emirates will extend its "golden" visa system – which grants 10-year residency to certain professionals, specialised degree-holders and others.
- Foreigners in the UAE usually have renewable visas valid for only a few years tied to employment.
- The government in the past couple of years has made its visa policy more flexible, offering longer residencies for certain types of investors, students and professionals.
- All holders of doctorate degrees, medical doctors and also computer, electronics, programming, electrical and biotechnology engineers are eligible.



- Also eligible are those with specialised degrees in artificial intelligence, big data and epidemiology, as well as high school students living in the UAE who rank top in the country and students from certain universities with a GPA of 3.8 or higher.
- After first announcing a long-term visa plan in 2018, the UAE in 2019 started granting 5- and 10-year renewable visas to certain foreign investors, entrepreneurs, chief executives, scientists and outstanding students.

4. Economy

Click [here](#) to watch the following questions on YouTube.

4.1. India enters a 'technical recession'

- To better understand the term “technical recession”, one must distinguish it from two other phrases – a recession and a recessionary phase of an economy.

Recessionary phase

- In any economy, a recessionary phase is the counterpart of an expansionary phase.
- When the overall output of goods and services, typically measured by the GDP increases from one quarter (or month) to another, the economy is said to be in an expansionary phase.
- And when the GDP contracts from one quarter to another, the economy is said to be in a recessionary phase.
- Together, these two phases create what is called a “business cycle”.
- A full business cycle could last anywhere between one year and a decade.

CONTRACTION IN INDIA. ELSEWHERE

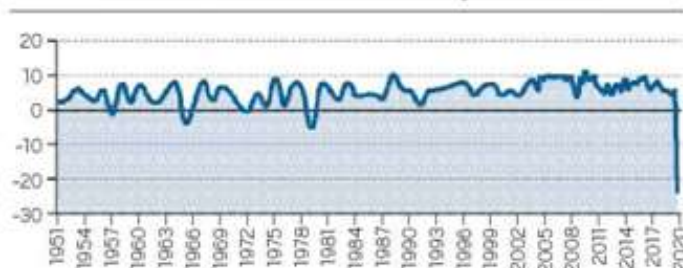
	Quarterly Real GDP growth rate (in %)			
	October to December 2019	January to March 2020	April to June 2020	July to September 2020
India	4.1	3.1	-23.9	-8.6*
US	2.3	0.3	-9	-2.9
UK	1	-2.1	-21.5	-9.6
China	6	-6.8	3.2	4.9
Brazil	1.7	-0.3	-11.4	NA
Indonesia	5	3	-5.3	-3.5
South Africa	-0.5	0.1	-17.1	NA

* RBI estimates. Source: Trading Economics

Recession

- When a recessionary phase sustains for long enough, it is called a recession i.e. When the GDP contracts for a long enough period, the economy is said to be in a recession.
- There is no universally accepted definition of a recession as in, for how long should the GDP contract before an economy is said to be in a recession.
- But according to National Bureau of Economic Research (NBER) - During a recession, a significant decline in economic activity spreads across the economy and can last from a few months to more than a year.

INDIA GDP ANNUAL GROWTH RATE, 1951-2020



Source: Trading Economics, with MoSPI data

Technical recession

- A technical recession is a term used to describe two consecutive quarters of decline in output.
- In the case of a nation's economy, the term usually refers to back-to-back contractions in real GDP.
- The most significant difference between a 'technical recession' and a 'recession' is that while the former term is mainly used to capture the trend in GDP, the latter expression encompasses an appreciably more broad-based decline in economic activity that covers several economic variables including employment, household and corporate incomes and sales at businesses.
- Another key feature of a technical recession is that it is most often caused by a one-off event (in this case, the COVID-19 pandemic and the lockdowns imposed to combat it) and is generally shorter in duration.
- Due to COVID-19 – as soon as the lockdown was announced in March, most economists expected the Indian economy to go into recession.

How long do recessions last?

- Typically, recessions last for a few quarters.
- If they continue for years, they are referred to as depressions.
- But a depression is quite rare; the last one was during the 1930s in the US.
- In the current scenario, the key determinant for any economy to come out of recession is to control the spread of Covid-19.
- Finance Minister has expressed that India's recession could be already over and that the economy may register positive growth in the current quarter.

4.2. Centre rolls out ₹1.19 lakh-crore stimulus package

- Context: Finance Minister announced a Rs 1.19 lakh stimulus package, which coupled with Rs 1.45 lakh production-linked incentives takes the Centre's boosters for Diwali to Rs 2.65 lakh crore. This includes a ₹65,000 crore additional outlay for providing fertiliser subsidies to farmers.

Booster dose | A look at the fresh stimulus steps announced by the Finance Minister

<p>Jobs A new Atmanirbhar Bharat Rozgar Yojana mooted to spur job creation</p> <ul style="list-style-type: none"> • Govt. to foot two years' EPF dues (24% of wages) for new employees hired between Oct. 1, 2020 and June 30, 2021 • People earning less than ₹15,000 per month who lost jobs between March 1 and Sept. 30 to be covered if re-employed • Firms with more than 50 employees must hire at least 5 more to be covered 	<p>• Additional ₹10,000 crore announced for the PM Garib Kalyan Rozgar Yojana which could be used for MGNREGS or PM Gram Sadak Yojana</p> <p>Salaried taxpayers Some income tax relief for purchase of residential units of value up to ₹2 crore</p> <ul style="list-style-type: none"> • Permissible differential under Income Tax Act between circle rate and agreement value to be raised from 10% to 20% for primary sale of new units till June 30, 2021 	<p>demand for 25 lakh MT of steel and 131 lakh MT of cement</p> <ul style="list-style-type: none"> • Free up infrastructure contractors' capital by reducing performance security charges, and scrapping earnest money deposits for bidding on government projects • ₹6,000 crore equity infusion in debt platform of National Infrastructure Investment Fund, which will be used to raise ₹1.1 lakh crore for infra projects by 2025 • ₹10,200 crore additional funding for capital and industrial expenditure
<p>Farmers Govt. to provide ₹65,000 crore as fertilizer subsidy to ensure adequate availability in view of the expected rise in sown area</p>	<p>Infrastructure ₹18,000 crore allocated to PM Awas Yojana to build urban housing, over the ₹8,000 crore allotted in the Budget</p> <ul style="list-style-type: none"> • Govt. expects this would create 78 lakh new jobs and drive 	<p>Stressed sectors Emergency Credit Line Guarantee Scheme extended till March 31, 2021</p> <ul style="list-style-type: none"> • New scheme to provide credit to firms in the healthcare sector and 26 other sectors identified as 'stressed'

If you take all the packages and the RBI measures announced so far, a total of ₹29,87,641 crore has been given so far as stimulus. A total of 15% of GDP. The Central government on its own has provided 9% of GDP as stimulus.



NIRMALA SITHARAMAN

Package details: AtmaNirbhar Bharat Abhiyan 3.0

- The measures included the production-linked incentive scheme for 10 sectors
- Govt allocated ₹900 crore for research and development towards the COVID-19 vaccine.
- An additional ₹10,000 crore has been provided for spending through the MGNREGS and PM's rural roads scheme.
- To boost formal sector employment, a new Atmanirbhar Rozgar Yojana has been launched, under which the government will bear the entire employees' provident fund (EPF) contributions for two years of all new employees hired between October 1, 2020 and June 30, 2021, in firms with less than 1,000 employees.
- The definition of 'new employee' has been kept flexible to include anyone who was part of the EPF net earlier, but had lost their job between March 1 and September 30, 2020. This may help improve such workers' re-employment prospects.
- This benefit will apply to all such 'new employees' earning monthly wages less than ₹15,000. For firms with more than 1,000 employees, the Centre will bear half of the EPF contributions (24% of wages), while for smaller firms, it will bear the entire EPF contribution.
- To be eligible for the scheme, firms registered with EPFO having more than 50 employees must hire at least five new workers, while those with less than 50 employees must hire a minimum of two workers.
- This benefit will get credited upfront in Aadhaar-seeded EPF accounts of eligible new employees.
- To boost urban housing and create jobs, an additional allocation of ₹18,000 crore has been made for the PM Awaas Yojana over and above the ₹8,000 crore allotted in the Budget .

Other tax sops

- While extending a ₹3 lakh crore emergency credit line guarantee scheme announced earlier for micro, small and medium enterprises till March 31, 2021 the Finance Minister also announced a credit guarantee plan for stressed sectors as well as healthcare.
- Entities in 26 stressed sectors identified by the K.V. Kamath Committee, plus health care sector with credit outstanding of above ₹50 crore and up to ₹500 crore as on February 29, 2020, would now be able to avail 20% additional credit for a period of five years, with a moratorium of one year on principal repayment.
- As per the Kamath committee, the stressed sectors include auto components, construction, gems and jewellery, hotel and restaurants, iron and steel, real estate and textiles.

4.3.CCI to probe Google's 'abuse' of position

- The Competition Commission of India (CCI) ordered a detailed probe against Google for 'abuse' of its dominant position, primarily with regard to its digital payments application GPay.
- The order follows a complaint by an 'informant' alleging multiple instances of abuse of dominant position by Google
- CCI has decided to carry forward the investigation into two of these instances pre-installation of GPay on Android OS smart phones and use of Google Play's in-app billing as the method of payment by developers.

- It has come into notice that the opposite parties have contravened various provisions of Section 4 of the Act which pertains to abuse of dominant market position.
- The Commission has directed the Director General to finish the probe and submit the report in 60 days.
- Paytm, along with several other Indian start-ups, have been rallying against the U.S.-based tech giant's requirement that apps use the Play Store's billing system for in-app purchases of digital goods and pay a 30% transaction fee.
- Mandatory use of application store's payment system for paid apps and in-app purchases restricts the choice available to the app developers, especially considering when Google charges a commission of 30% (15% in certain cases) for all app purchases.
- Such 'allegedly' high fee would increase the cost of Google's competitors.
- The conduct of Google amounts to imposition of unfair and discriminatory condition, denial of market access for competing apps of Google Pay and leveraging on the part of Google, in terms of different provisions of Section 4(2) of the Act.

CCI

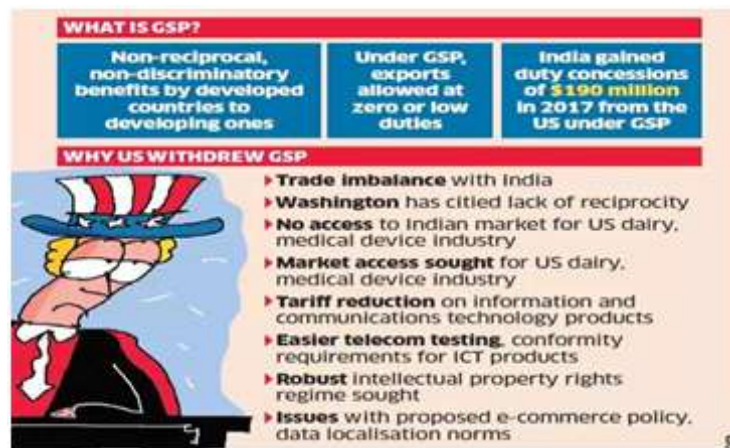
- Competition Commission of India (CCI) is a statutory body responsible for enforcing the Competition Act, 2002
- It was constituted in March 2009.
- The Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002, on the recommendations of Raghavan committee.
- Competition Commission of India aims to establish a robust competitive environment.
 - ✓ Through proactive engagement with all stakeholders, including consumers, industry, government and international jurisdictions.
 - ✓ By being a knowledge intensive organization with high competence level.
 - ✓ Through professionalism, transparency, resolve and wisdom in enforcement.

Competition Act, 2002

- The Competition Act was passed in 2002 and has been amended by the Competition (Amendment) Act, 2007. It follows the philosophy of modern competition laws.
- The Act 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.
- In accordance with the provisions of the Amendment Act, the Competition Commission of India and the Competition Appellate Tribunal have been established.
- Government replaced Competition Appellate Tribunal (COMPAT) with the National Company Law Appellate Tribunal (NCLAT) in 2017.

4.4. India likely to press Joe Biden administration to restore GSP trade privilege

- It stands for Generalized System of Preferences.
- Generalized System of Preferences (GSP) provides opportunities for many of the world's poorest countries to use trade to grow their economies and climb out of poverty.
- GSP is the largest and oldest U.S. trade preference program. Established by the Trade Act of 1974, GSP promotes economic development by eliminating duties on thousands of products when imported from one of 119 designated beneficiary countries and territories.
- The privilege was withdrawn by outgoing President Donald Trump's administration in Washington DC in June 2019 and India has been prodding the United States to restore it.
- USA also removed India from the list of developing country WTO Members exempt from application of the safeguard measures on certain crystalline silicon photovoltaic (CSPV) products and large residential washers.
- US listed out alleged unfair trade practices by India, including on data localization, price control on medical devices and higher tariff on telecommunication equipment as the reasons.
- India has maintained that its tariff levels are in accordance with WTO rules applicable to developing countries.
- The US however wants countries like China and India to give up their "developing country" status given their rapid economic progress.



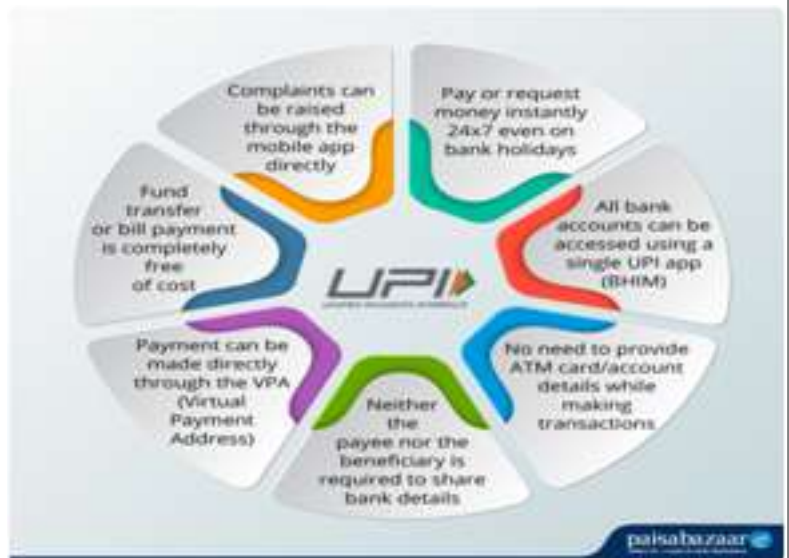
4.5. NPCI allows WhatsApp to start payments service in a 'graded' manner

- The National Payments Corporation of India (NPCI) allowed Facebook-owned messaging platform WhatsApp to start its payments service in the country in a "graded" manner.
- The announcement by NPCI came minutes after it limited a single third party like WhatsApp or its rivals like Google Pay or Walmart's PhonePe to handle only 30 per cent of overall UPI transaction volumes by putting a cap.

- Having a cap on the transaction volume will help in de-risking the entire set-up and is essential as UPI, which surpassed two billion transactions a month mark in October.
- The industry has been feeling that allowing WhatsApp into payments may drive up volumes in the Indian digital payments space.
- In China, Wechat alone has over 1 billion active users for its payment services.
- WhatsApp has 400 million users in India while other Third Party App Providers (TPAPs) -- Google Pay had 75 million and PhonePe had 60 million -- as of May. WhatsApp has been running a pilot service for the last two years but was not given a formal go-ahead because of data localisation requirements.
- A "cap of 30 per cent of total volume of transactions processed in UPI" will be applicable on all TPAPs from January 1, 2021
- The cap of 30 per cent will be calculated on the basis of the total volume of transactions processed in UPI during the preceding three months on a rolling basis, as per NPCI.
- Existing TPAPs exceeding the specified cap will have a period of two years from January 2021 to comply with the same in a phased manner.
- TPAPs typically tie-up with banks at the back-end to add users and process payments for them.
- Data coming out of the usage is a major resource, apart from the revenues made through processing fees.

Unified Payments Interface

- Unified Payments Interface (UPI) is a payments system.
- It has been developed by the National Payments Corporation of India (NPCI) regulated by Reserve Bank of India (RBI).
- UPI is completely built on the IMPS technology which enables a user to instantly transfer funds from their bank account to the end user's bank account through UPI Virtual Address (unique ID generated by the bank) or by using their Bank Account Number and IFS Code.
- UPI was launched by NPCI on 11th April, 2016 by ex-RBI governor Shri Raghuram Rajan.
- Post demonetization under the initiative of government, NPCI launched Bharat Interface for Money (BHIM).



Benefits for end Customers

- Round-the-clock availability.
- Access to multiple bank accounts through single app.
- Transact with Virtual ID – No need of sharing credentials repeatedly.

- Single click authentication.
- Raise complaints from mobile app directly.

4.6.DIPAM signs agreement with World Bank for advisory services on asset monetization

- DIPAM, which mainly handles government's disinvestment programme, signed an agreement with the World Bank for providing advisory services for asset monetization.
- The Department of Investment and Public Asset Management (DIPAM) is mandated with facilitating monetization of non-core assets of government CPSEs (central public sector enterprises) under strategic disinvestment.
- The World Bank advisory project, approved by the Finance Minister, is aimed at analyzing public asset monetization in India and benchmarking its institutional and business models against international best practices as well as supporting development of operational guidelines and capacity building for their implementation
- It is expected that this project would facilitate and accelerate the non-core asset monetization process and help unlock the value of these unused/marginally used assets which have the potential to substantially augment financial resources for further investments and growth, it added.
- The amount raised through the sale of non-core assets would form part of the disinvestment proceeds.
- The government has set a target of raising Rs 2.10 lakh crore from disinvestment in the current financial year. Of this, Rs 1.20 lakh crore is to be raised through CPSE disinvestment.
- Asset monetisation involves creation of new sources of revenue by unlocking of value of hitherto unutilised public assets.
- The process is categorised under the broad definition of disinvestment.
- However, it does not lead to any changes in the shareholding pattern.
- Earlier: To bolster investment in the country, the task force set up to finalise the ambitious Rs 111 lakh crore National Infrastructure Pipeline (NIP) has suggested aggressive asset monetisation, including setting up of a land management corporation, levying user charges for availing infrastructure services and allowing setting up of more development finance institutions in the infrastructure space.

What is Asset Monetisation

- Many of the public assets are sub-optimally utilized or are unutilized; which simply means that it is not using its maximum potential which could have been gained by exploiting it commercially at a market valuation.
- If we talk about vacant land parcel; it is very huge.
- Indian Railways is the forerunner landlord with approx. 47000 hectares, which can be put to commercial purposes. Government is targeting to unlock optimal value from these public sector assets which have not yielded potential return. This process of converting assets into economic value is termed as Asset Monetization.



- The catch is attracting private sector participation to unlock the real asset value through innovative business ideas, emerging technologies and positive disruptions.
- This will pave the synergized path where government is opening these sectors and assets to the private sector in a fair and transparent manner and the other party has the opportunity to create a profitable venture and provide quality service to the public.
- Monetizing assets is a sophisticated and effective way to outdo cost & expenses of public exchequer and to create new, unexplored sources of revenue which will improve public finances as well as create a robust ecosystem for industrial expansion.
- There is no need to out rightly sell assets for monetization.
- A disposition of public utilization may also take the form of a long-term lease, known as a concession agreement.
- There are several viable commercial models to facilitate this objective through adequate upfront premiums, regular revenue shares, standard service delivery parameters with defined penalties and termination clauses in the contract.
- Clarity over tariff setting and concession period of long duration is essential to motivate the private sector to create assets of national importance.
- The bidding process needs to be structured correctly to achieve a win-win scenario for all; the government, the investor and the public.
- In cases where government is resorting to International competitive bidding, it is important to protect foreign investors from long drawn litigations by setting clear rules and guidelines.

4.7. PLI scheme to cover 10 more sectors, to get ₹1.46-lakh crore over five years

- The Centre expanded the Production-Linked Incentive (PLI) to 10 more sectors approving a spend of ₹1.46-lakh crore over five years to boost manufacturing.
- Simultaneously, the government moved to push social infrastructure, giving ₹8-lakh crore to the Viability Gap Funding (VGF) scheme, also over five years.
- The PLI scheme incentivizes large investments and domestic manufacturing.
- Currently, it covers three sectors – Mobile Manufacturing and Specified Electronic Components, Critical Key Starting Materials/Drug Intermediaries, and Active Pharmaceutical Ingredients, and Manufacturing of Medical Devices – at an outlay of ₹51,000 crore.

Fund allotment

- The final PLI proposals for individual sectors will be appraised by the Expenditure Finance Committee and approved by the Cabinet.
- Savings, if any, from one PLI scheme can be utilised to fund another approved sector by the Empowered Group of Secretaries.
- Any new sector for PLI will require fresh Cabinet approval.

Cabinet approves PLI Scheme in 10 key Sectors 1/2

Sectors	Implementing Ministry/Department	Approved financial outlay over a five-year period Rs.crore
Advance Chemistry Cell (ACC) Battery	NITI Aayog and Department of Heavy Industries	18100
Electronic/Technology Products	Ministry of Electronics and Information Technology	5000
Automobiles & Auto Components	Department of Heavy Industries	57042
Pharmaceuticals drugs	Department of Pharmaceuticals	15000
Telecom & Networking Products	Department of Telecom	12195

Cabinet approves PLI Scheme in 10 key Sectors 2/2

Sectors	Implementing Ministry/Department	Approved financial outlay over a five-year period Rs.crore
Textile Products: MMF segment and technical textiles	Ministry of Textiles	10683
Food Products	Ministry of Food Processing Industries	10900
High Efficiency Solar PV Modules	Ministry of New and Renewable Energy	4500
White Goods (ACs & LED)	Department for Promotion of Industry and Internal Trade	6238
Speciality Steel	Ministry of Steel	6322
Total		145980

VGF for social infra

- The revamping of the Scheme for Financial Support to Public Private Partnerships (PPPs) in Infrastructure Viability Gap Funding (VGF) till 2024-25 is, at present, limited to economic infrastructure
- Now, the revamped scheme will also cover social infrastructure such as drinking water, education and health.
- There will be two sub schemes – one will cater to social sectors such as waste water treatment, solid waste management, health and education sectors; and the second will support demonstration/pilot social sectors projects.

Viability Gap Funding (VGF)

- VGF means a grant to support projects that are economically justified but not financially viable.
- The scheme is designed as a Plan Scheme to be administered by the Ministry of Finance and amount in the budget are made on a year-to-year basis.
- Such a grant under VGF is provided as a capital subsidy to attract the private sector players to participate in PPP projects that are otherwise financially unviable.
- Projects may not be commercially viable because of the long gestation period and small revenue flows in future.
- The VGF scheme was launched in 2004 to support projects that come under Public-Private Partnerships.
- Funds for VGF will be provided from the government’s budgetary allocation. Sometimes it is also provided by the statutory authority who owns the project asset.
- If the sponsoring Ministry/State Government/ statutory entity aims to provide assistance over and above the stipulated amount under VGF, it will be restricted to a further 20% of the total project cost.
- VGF grants will be available only for infrastructure projects where private sector sponsors are selected through a process of competitive bidding.

- The VGF grant will be disbursed at the construction stage itself but only after the private sector developer makes the equity contribution required for the project.

4.8. Mobile money a/cs: IMF says 17-fold jump in 4 years in India

- The IMF report shows that among a dozen countries in the low and middle-income economies, India has witnessed the biggest jump in the number of registered mobile money accounts between 2015 and 2019.
- The report defines 'mobile money' as a financial service offered by a mobile network operator (MNO) or another entity that partners with an MNO, facilitated by a network of mobile money agents.
- IMF says in its Financial Access Survey-2020 that Mobile money has taken deep root in both sub-Saharan Africa and Asia, providing financial services to the under banked and unbanked populations in these regions.
- India has been using Aadhaar, no-frills bank accounts, low-cost life and health insurance schemes, and direct bank transfer of entitlements to promote financial inclusion over the last few years, while access to the internet and usage of mobile phones rose.
- Some key economic and taxation policies, including the requirement for businesses to offer digital payment modes in certain cases, are geared towards the goal of a less-cash and more transparent economy.



What is Mobile Wallet?

A mobile wallet includes a secure payment method and more. It represents the consumer in a two-way interact to a website, merchant or application provider

<p>Payments</p> <ul style="list-style-type: none"> • Authorized mechanism of purchases (mobile and fixed) • Multiple payment types (carrier billing, credit card, debit card, etc.) • Mobile Ticketing 	<p>Personal Information</p> <ul style="list-style-type: none"> • Receipts and Purchase history • Contacts, pictures, etc • Secure Storage (medical, insurance, etc.) • Electronic keys (car, house, hotel) • Information collection and exchange
<p>Offers and Promotions</p> <ul style="list-style-type: none"> • Loyalty Programs • Coupons and promotional offers • Permission Management • Receive product info • Shopping assistant • Smart Posters (tap to see more information and get special deals) 	<p>Identification</p> <ul style="list-style-type: none"> • Identify a subscriber online to other systems • Replace physical access cards • Driver's License • Passport

5. Environment

Click [here](#) to watch the following questions on YouTube

5.1.MNRE proposes scheme for development of wind-solar hybrid parks

- The Union Ministry of New and Renewable Energy (MNRE) is planning on setting up new solar hybrid parks in the country.
- The solar power project is commissioned on contiguous land, while the wind power project requires scattered land on footprint basis
- It not only increases the transmission cost but also increases the possibility of land-related issues
- In order to overcome these challenges and to speed up the installation of wind power projects, the scheme – Development of Wind Parks/Wind-Solar Hybrid Park – with proper infrastructure including evacuation facilities in place has been proposed.
- The competitive bidding process has resulted in competitive tariffs which are much lower than traditional Feed-in Tariffs, a number of projects have been delayed due to land, NoCs and transmission related issues.
- These challenges and uncertainties have raised the concerns of investors in the sector.

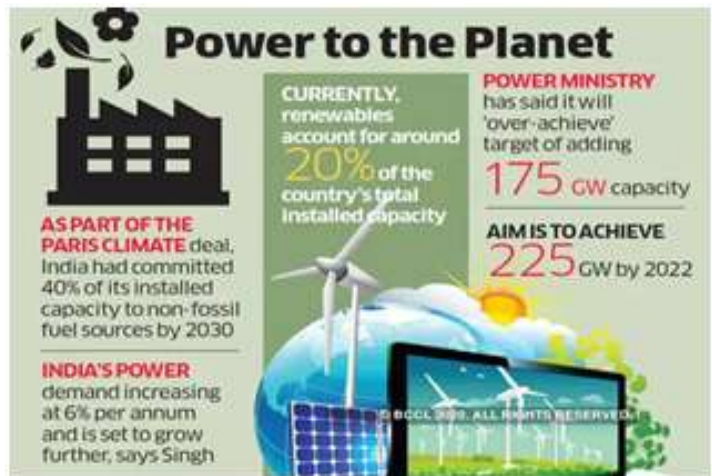
Plug and play solution

- Wind Energy Park will provide a plug and play solution (availability of land, transmission, necessary infrastructure and necessary approvals) to the investors for installing wind/wind-solar power projects.
- The probable sites for the parks have been identified with the help of National Institute of Wind Energy (NIWE) on the basis of availability of mainly wind resource and suitability of land for such projects.
- If the site is found to be suitable, the park developer may consider developing a wind-solar hybrid park.
- The identified sites would be circulated to concerned state governments for their approval.
- The State government would designate park developer who would undertake the development of park including DPR preparation, land, transmission infrastructure, etc.
- Sites have been identified across seven states – Tamil Nadu, Andhra Pradesh, Karnataka, Telangana, Gujarat, Rajasthan and Madhya Pradesh – and the Concept Note has identified potential to install projects for a capacity of 53,495 MW (5 MW per sq km).
- The capacity of each park should be 500 MW and more.
- The, parks of lower capacity may also be developed depending upon the availability of land and resource.
- The capacity of each park shall not be less than 50 MW.
- Park developers may also be allowed to pool small investor into the single park.

- MNRE will provide financial assistance of ₹25 lakh per park to the developer for DPR preparation and ₹30 lakh per MW or 30 per cent of the park development cost to park developer, whichever is lower.

Renewable Energy Goals

- For its Paris commitment, India set a goal of 40 per cent electricity generation from non-fossil fuel sources by the year 2030, as well as a reduction in its economy's carbon intensity of 33-35 per cent by 2030.
- GOI established a target to install 100 gigawatts (GW) of solar energy, 60 GW of wind power, and an additional 15 GW of biomass and small hydro by the year 2022, creating an estimated 330,000 new jobs in the process.
- India is performing so well that it is now aiming to reach 227 GW of renewable capacity by 2022 by also adding floating solar and off-shore wind to the package.



5.2. New Ramsar sites

- The Lonar lake in Maharashtra and Sur Sarovar, also known as Keethamlake, in Agra, have been added to the list of recognised Ramsar sites.
- The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat is a treaty for conservation and sustainable use of such sites.
- It is named after Ramsar, the Iranian city where the treaty was signed in 1971, and places chosen for conservation under it are given the tag 'Ramsar site.'
- Recently, Kabartal in Bihar's Begusarai district was recognised as a wetland of international importance.
- The Asan Conservation Reserve in Dehradun, the first wetland from Uttarakhand
- The other 38 Ramsar sites in India include:
 - ✓ Chilika Lake in Odisha
 - ✓ Keoladeo National Park in Rajasthan
 - ✓ Harike Lake in Punjab
 - ✓ Loktak Lake in Manipur
 - ✓ Wular Lake in Jammu and Kashmir
- The convention is one of the oldest inter-governmental accords for preserving the ecological character of wetlands.

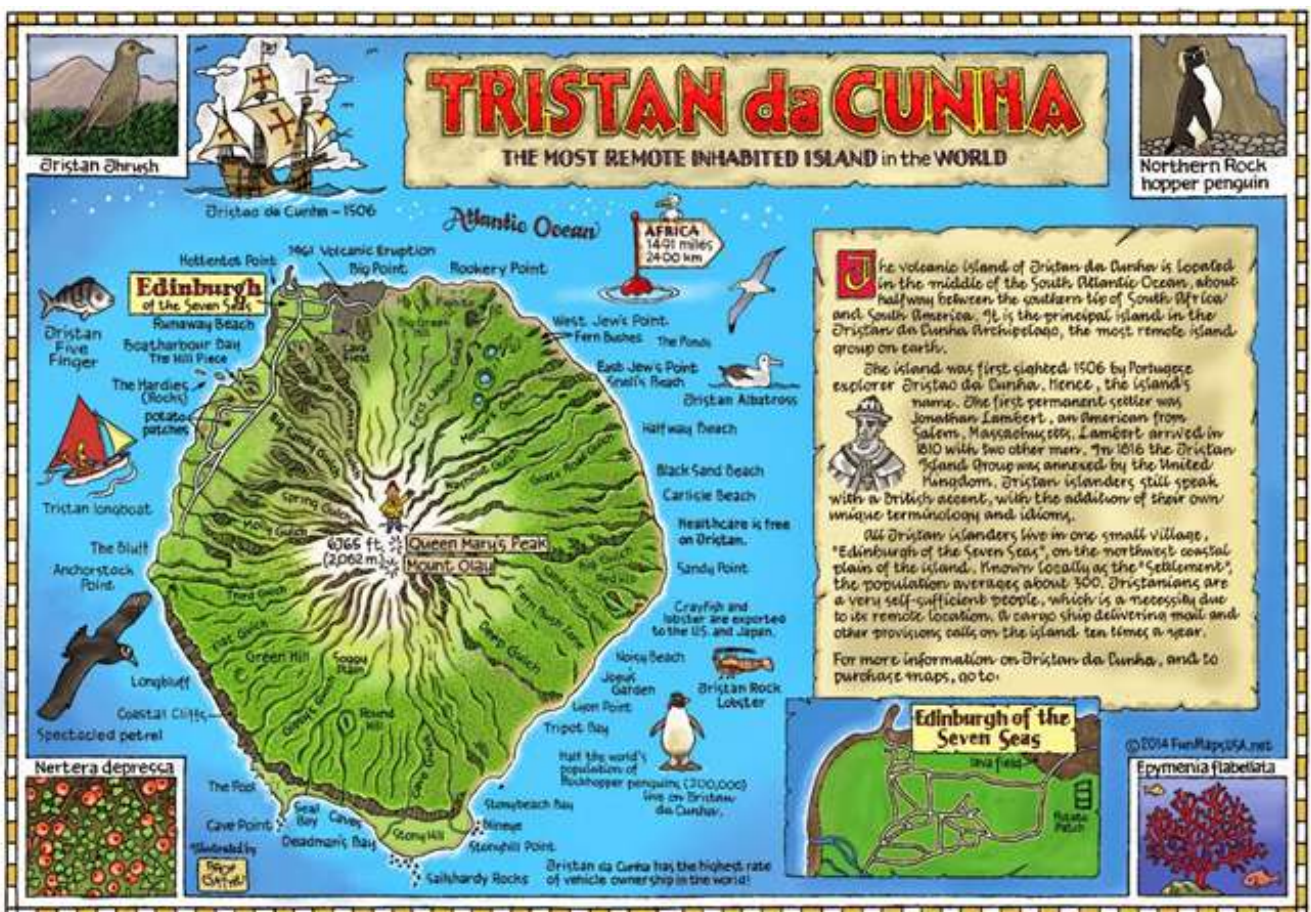
5.3. Atlantic Ocean's largest protected marine reserve

Context

- The isolated UK Overseas Territory of Tristan da Cunha, which is home to the world's most remote human settlement, declared the largest fully protected marine reserves in the Atlantic Ocean at 687,000 square kilometres.
- This will close over 90 percent of their waters to harmful activities such as bottom-trawling fishing, sand extraction and deep-sea mining.

What is Tristan da Cunha?

- Tristan da Cunha, is inhabited by less than 300 humans and is a small chain of islands over 6,000 miles from London in the South Atlantic and the water around the islands are considered to be the richest in the world.
- The mountainous archipelago Tristan da Cunha is home to tens of millions of seabirds and several unique land birds that are comparable to the Galapagos island finches.
- Some of its seabirds that are not found anywhere else in the world face threats including illegal and unregulated fishing activities, overfishing, plastic pollution and climate change.
- The National Geographic reported that invasive mice brought to the islands by passing ships kill over 2 million birds a year.
- The island group is also home to the World Heritage Site of Gough and Inaccessible Islands, which is one of the most important seabird islands in the world.



- It is located about 2,000 km from the nearest land and as per the RSPB, it takes longer to sail to Tristan da Cunha from Cape Town than it took Apollo 11 to reach the Moon.

What does the announcement mean for the island group?


- After joining the UK's Blue Belt Programme, it will become the largest no-take zone in the Atlantic and the fourth largest on the planet.
- This means fishing, mining and any such activities will not be allowed.
- The almost 700,000 square kilometres of the Marine Protection Zone (MPZ) is almost three times the size of the UK and will safeguard the future of seven gill sharks, yellow-nosed albatrosses and rock hopper penguins.
- This development is also supported by the Blue Belt Programme, which provides over 27 million pounds over a period of five years for marine conservation around the UK Overseas Territories and international organisations
- MPZs involve the management of certain natural areas for biodiversity conservation or species protection and are created by delineating zones with permitted and non-permitted areas within that zone.

5.4. In a world first, Indian carbon trader to come out with IPO

- Context: Indore-based Enking International may become the world's first company that operates in the carbon markets space to go in for an initial public offering (IPO).
- Carbon offsets are market-tradeable instruments (like Renewable Energy Certificates) that are issued to entities whose projects reduce Carbon dioxide emissions.
- Enking buys these offsets from Indian companies and sells them to buyers abroad.
- Trading in carbon offsets is expected to pick up once the rules for carbon markets are framed under Article 6 of the Paris Agreement.
- Carbon trading began under the Kyoto Protocol of 1997 (which came into force in 2005).
- Under this, 'certified emission reductions' or CERs, were issued to entities that put up projects that reduced emissions – such as wind, solar, or energy efficiency.
- These CERs were to be bought by developed countries.
- It didn't work out well and Indian entities are left holding about 750 million worthless CERs.
- Central Electricity Regulatory Commission (CERC) is the Market Regulator for the trading of Energy Savings Certificates (ESCerts).
- Some countries and many companies buy offsets under what are called 'compliance' and 'voluntary' markets, respectively.
- But the real growth in the market is expected to happen only after the carbon market rules are framed under the Paris Agreement.

TODAY IN CHEMISTRY HISTORY


16TH FEBRUARY – THE KYOTO PROTOCOL (2005)




192 COUNTRIES


- signed and ratified
- ratified but withdrawn
- signed but not ratified

TARGET
↓ **5.2%**
by 2012 relative to 1990

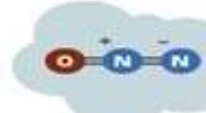




METHANE



CARBON DIOXIDE



NITROUS OXIDE


GREENHOUSE GASES

HYDROFLUOROCARBONS

PERFLUOROCARBONS

SULFUR HEXAFLUORIDE

Greenhouse gas emissions



The Kyoto Protocol is an international treaty to reduce the emission of six greenhouse gases. 192 countries are party to the protocol, but only 38 had binding targets for the first period (2008–2012). These 38 countries met their target collectively – but an absence of binding targets for developing nations such as China and India meant that worldwide greenhouse gas emissions continued to rise.

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5.5. Manipur government issues orders for the protection of visiting Amur falcons

- The Manipur government has stepped up vigil and launched an awareness campaign to protect Amur falcons, birds which migrate to the hilly districts of Manipur for two months.

FALCO AMURENSIS

Amur Falcon



Amur falcon
www.sleepyclasses.com

- Blackish eye-patch
- Orange-red cere, eye-rings
- Rounded wing-tips
- Highly sociable
- Crepuscular (most active at twilight)
- Feeds in tree holes and old corned nests
- Red to orange legs and feet
- Short-tailed raptor

Passage migrants that make a pit stop on the Indian subcontinent en route to Africa

6.2 years LIFESPAN	28-31 cm SMALL BODY SIZE	160–200g WEIGHT	22,000 km MIGRATION
------------------------------	------------------------------------	---------------------------	-------------------------------

EAT
An agile aerial insect-catcher, the Amur falcon hovers, catches, and consumes insects, (mainly dragonflies) while in flight.

SPOTTED IN
Central and Eastern Himalayas, south Asian Hills (Eastern Meghalaya, Mizoram), Peninsular India, Sri Lanka, Maldives, north-east Asia, southeast Africa, South Africa.

HABITAT
Open woodlands, grasslands, and wetlands.

PROTECTION STATUS
Least Concern on the IUCN Red List

THREATS

- Extensive grazing in Nagaland and neighbouring areas, rice under control
- Degradation of grasslands
- Human intrusion and disturbance (like mining)

CONSERVATION MEASURES

- Research and monitoring
- Conservation sites identified and protected
- Included in international legislation
- Education and awareness programmes
- International response and effective conservation action curbed extensive hunting in northeast India.

THE JOURNEY
Begin their migration in breeding grounds in southeast Russia and northern China. Arrive at staging sites in northeast India (mainly Nagaland). Migrate west across India. Undertakes longest overwater migration (over 3,000 km) of any raptor, crossing the Indian Ocean to reach East Africa. Finally reach their wintering grounds in South Africa.

MALE
Dark grey with red-brown thighs, undertail coverts, and white underwing.

FEMALE
Pale grey upper parts, slate-coloured head and cream forehead. White and grey streaks and bars on chest, orange-buff thighs and undertail coverts. Tail and flight feathers have dark tips.

MIGRATES in flocks, sometimes with other species like lesser kestrels.

FAVOURITE PERCH
Roosts communally in trees when migrating. Otherwise found perched on power lines, dykes, bushes, etc.

- Those who violate the instructions are liable to be punished under Section 50/51 of the Manipur Wildlife (Protection) Act, 1972.”

5.6. New genus of tree frog discovered, found in Andamans and Northeast India

- Scientists and researchers from the University of Delhi and the Zoological Survey of India have discovered a genus of tree frog found in the Andaman Islands and the northeast.
- It is named after Sri Lankan taxonomist Rohan Pethiyagoda.
- These frogs of the new genus Rohanixalus are characterised by a rather small and slender body (size about 2 to 3 cm long), a pair of contrastingly coloured lateral lines on either side of the body, minute brown speckles scattered throughout the upper body surfaces, and light green coloured eggs laid in arboreal bubble-nests.



5.7. Mangrove coverage is declining

- According to a recent study published in Environmental Research Letters:
 - ✓ Mangroves forests are being threatened at an increasing pace.
 - ✓ River dams negatively impact the supply of mud that raises mangrove soils.
 - ✓ The space required for their survival is increasingly getting occupied by buildings and seawalls.
 - ✓ Tidal barriers have proven to be disastrous for mangrove coverage and can result in species loss.
 - ✓ But mangrove coverage can increase despite sea-level rise if sediment supply is sufficient and land accommodation space available.
 - ✓ Mangroves depend on a steady supply of sediment flowing down from rivers.

THREATS

Drivers of mangrove loss

Mangrove loss
35% between 1980 and 2000¹ - the equivalent of losing almost 150,000 annually², and 4 times higher than overall global forest loss³

Climate change
Air temperature and rainfall regimes influence global mangrove distribution⁴; abrupt changes in sea level are a primary cause of local and regional extinctions^{5,6}

Coastal development
Urbanisation drives mangrove loss and degradation; human population density in coastal regions 3 times higher than global average⁷

Pollution
Mangrove's aerial roots, through which they obtain oxygen, can easily be smothered and clogged by sediment, solid waste and oil⁸

Aquaculture
causes more than half of mangrove losses globally, mostly due to shrimp culture⁹

Agriculture
Conversion to rice paddies responsible for 88% of mangrove loss in Myanmar¹⁰

Logging
can cause altered species composition, fragmentation and total clearance of mangrove forests

Logos: Ministry of Environment and Conservation, WWF, IUCN, and a tree logo.

Sources: ¹ Millennium Ecosystem Assessment, 2005 • ² 0.66% or 102,000 hectares annually (2000-2005) FAO, 2007 • ³ Gustling et al., 2010 • ⁴ Along, 2010 • ⁵ Duke et al., 2017 • ⁶ Lovelock et al., 2017 • ⁷ Small et al., 2002 • ⁸ UNEP, 2014 • ⁹ Varela et al., 2001 • ¹⁰ Over 2000-2012; Richards & Frost, 2019

THE MANGROVE ECOSYSTEM

Extreme Conditions and Extremely High Biodiversity

Mangrove forests are found on coastlines in tropical and subtropical areas. The mangrove tree looks a bit strange because its roots are partially above water, making the tree look like it's standing on many gnarly stilts. The roots are exposed to help the tree take in oxygen in a waterlogged environment. Fish, shrimp, crabs, and mollusks are among the organisms that take shelter within mangrove roots. This ecosystem is home to considerable biodiversity, but is unfortunately threatened by shrimp farming and rising sea levels. In some countries, shrimp farming clears large sections of mangroves to build holding tanks and processing facilities. The maps below show the changes to the mangrove ecosystem in Honduras from 1987 to 1999, where much of it has been removed to store shrimp brought in from the Gulf of Fonseca.

Mangrove forests are important nesting spots for shorebirds and migratory birds.

Coastal Protection
Mangrove forests are able to bear the brunt of storms that hit the coast. They reduce the impact of strong waves on anything that lives further inland, including humans. Mangrove trees also protect the coast from erosion by collecting sediments from rivers and ocean tides around their roots. These sediments build up and strengthen the shoreline.

The Ocean's Nursery
Mangrove ecosystems host a lot of biodiversity, in part due to the mangrove tree's strange root system. The roots serve as a nursery for the larvae of many fish species, such as barracuda, tarpon, and snook. This is where fish can develop into adults before moving out to the big, unforgiving ocean. In fact, around one-third of all marine fish species are sheltered from predators in mangrove forests as juveniles.

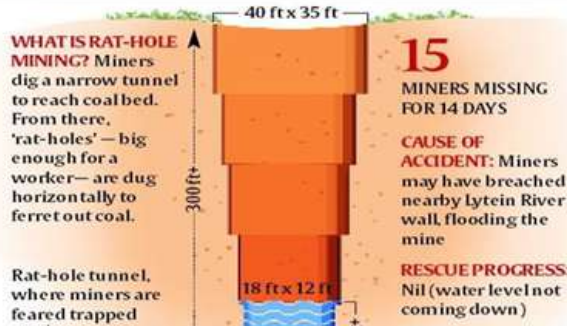
Leaves and branches that have fallen into the water are called detritus, and are broken down by bacteria to return nutrients to the water.

NATIONAL GEOGRAPHIC

5.8. Meghalaya govt encouraging illegal coal mining, says NGO

- In 2014, the National Green Tribunal imposed a ban in Meghalaya on rat-hole mining of coal – a technique that entails digging small vertical pits to reach the mineral.
- But activists alleged that coal continues to be mined illegally in the state, particularly in the Jaintia Hills, often with the collusion of authorities.

DECEMBER 13 ACCIDENT: THE MINE SHAFT



'Rat-hole' mines

It is a primitive method of coal mining in Meghalaya in which hills are dug both vertically and horizontally. The tunnels are often three to four feet in diameter. The tunnels are so narrow that the miners can just crawl inside and so they are called 'rat-holes'. Some of the pits are too narrow for an adult to enter and so the children were engaged to crawl inside and extract coal, until it was banned in 2014. The land is first cleared by cutting and removing the ground vegetation and then pits ranging from 5 to 100 metre are dug into the ground to reach the coal seam. Thereafter, tunnels are made into the seam sideways to extract coal which is first brought into the pit by using a conical basket or a wheelbarrow and then taken out and dumped in a nearby area from where it is carried to the dumping places close to the highways.

Meghalaya coal

The Jaintia Hills district of Meghalaya is a major coal producing area having an estimated coal reserve of about 40 million tonnes. Meghalaya coal contains low ash, high volatile matter, high calorific value and comparatively high sulphur content. The coal is mostly sub-bituminous in character.

No policy

Unlike the rest of the country, local communities in Meghalaya own the hills and possess rights over its minerals to a large extent, as it is a tribal state under the Sixth Schedule of the Constitution. So, the state government has little control to check illegal and unscientific mining. The state is yet to have a safe mining policy despite an instruction by National Green Tribunal in 2014.

Environmental impact

Entire coal mining area of Jaintia Hills is full of mine pits and caves. These open, unfilled pits are the places where surface water percolates and disappears. This leads to pollution in the rivers, air pollution due to destruction of vegetation and severe impact on agriculture land.



DEATH TRAP

20 men were trapped inside an illegal coal mine at Ksar in Lumthar village in Meghalaya's East Jaintia hills on Dec 13 after water from the nearby Lytein river gushed in.

5 men

later managed to come out, 15 still trapped inside are feared dead

380 feet

is the depth of the mine inside which they are trapped

3 helmets

recovered so far

Krip Schullet, who owns the mine, has been arrested

THE RESCUE EFFORT

Teams of National Disaster Response Force, Coal India, Indian Air Force, Navy and Kirloskar Brothers have joined the rescue operation.

100-plus personnel from the national and state disaster response teams are deployed

40 feet is the depth which NDRF divers have managed to reach so far

15-member diving team from the Navy joined the operation on Saturday

10 high-power pumps airlifted by IAF, though it's yet to reach the site

OBSTACLES IN THE WAY

Remote location and hilly terrain

NDRF lacked high-powered pumps to flush out water

NDRF divers trained to go only up to 40 feet while the water is 70-feet deep

One-week delay on the part of state govt to process NDRF's request for high-powered pumps

Water in the mine is not receding



FAMILY OF MONIRUL ISLAM
Father says state govt could have retrieved the bodies if it had will



FAMILY OF CHAHER ISLAM
Father says he can't be still alive, wants financial help from govt



FAMILY OF AMIR HUSSAIN
Wife says family will commit suicide if govt fails to help

WHAT IS RATHOLE MINING?

Land is cleared by removing vegetation. Subsequently, pits measuring from 5 to 100 sq m are dug to reach the coal bed

From there, ratholes, which are big enough for only one person, are dug horizontally to extract coal

It was slammed as illegal, unscientific and harmful, and banned by the National Green Tribunal (NGT) on April 17, 2014

In Nov this year, state govt challenged the NGT ban in SC. The appeal is pending

WHY WAS IT BANNED?

The state's total coal reserve is estimated to be 640 million tons, mostly in Jaintia Hills. Coal is mined unscientifically causing the water of several rivers to turn acidic

Rathole mining also poses threat to the caves in Meghalaya which has the largest concentration of caves in the sub-continent. Most of the about 1,000 caves discovered so far are yet to be mapped

Unregulated mining has led to serious environmental degradation and imperiled workers' safety

VIOLATION

Coal mining industry was among the biggest revenue earners for the state before the ban

Many politicians of Meghalaya, including ministers and MLA, are said to own these mines

Lure of much higher pay makes poor villagers enter these rathole mines to extract coal

5.9. The Guillain Barre Syndrome

- Context: In a rare complication, some patients infected with Covid-19 have been found suffering from Guillain Barre Syndrome (GBS). In India, such cases have been reported since August.

What is Guillain Barre Syndrome?

- It is a very rare autoimmune disorder.
- The immune system, in an attempt to kill the coronavirus, accidentally starts attacking the peripheral nervous system.
- The peripheral nervous system is a network of nerves that lead from the brain and spinal cord to different parts of the body.
- Attacking them can affect limb functions.



- The syndrome's first symptoms are a tingling or itching sensation in the skin, followed by muscle weakness, pain and numbness.
- The symptoms may emerge first in feet and hands.
- A person then starts experiencing reflex loss and paralysis, which may be temporary, but can last for 6-12 months or longer.
- With Covid-19 a year old, it is still difficult to assess the nature of permanency GBS in such cases may present.
- GBS is caused by bacteria or viral infection.
- In the past, patients of Middle East Respiratory Syndrome showed GBS symptoms, as did those infected with Zika, HIV, Herpes virus and Campylobacter jejuni.

Guillain Barre Syndrome and Covid-19

- Covid-19 is known to affect digestive, cardiac and kidney functions.
- It is also known that some -- not all -- patients are prone to neurological problems if they contract the virus.



- The virus can cause memory fog, anxiety, headache and depression if it attacks parts of the brain which form the central nervous system.
- In all these cases, the virus attacks the organs or tissues directly leading to the complication.
- But in some cases, it can have an indirect effect.
- It can trigger an immune response so powerful that the body's peripheral nervous system can come under attack.

6. Science & Technology

Click [here](#) to watch the following questions on YouTube

6.1.Chapare virus

- Context: A rare Ebola-like illness that is believed to have first originated in rural Bolivia in 2004 can spread through human-to-human transmission, researchers from the US Centers for Disease Control and Prevention (CDC) have discovered.
 - ✓ The biggest outbreak of the 'Chapare virus' was reported in 2019, when three healthcare workers contracted the illness from two patients in the Bolivian capital of La Paz.
 - ✓ Two of the medical professionals and one patient later died.
 - ✓ Prior to that, a single confirmed case of the disease and a small cluster were documented in the Chapare region over a decade ago.

What is the Chapare virus?

- The Chapare hemorrhagic fever (CHHF) is caused by the same arenavirus family that is responsible for illnesses such as the Ebola virus disease (EVD).
- Arenaviruses like the Chapare virus are generally carried by rats and can be transmitted through direct contact with the infected rodent, its urine and droppings, or through contact with an infected person.
- The virus, which is named Chapare after the province in which it was first observed, causes a hemorrhagic fever much like Ebola along with abdominal pain, vomiting, bleeding gums, skin rash and pain behind the eyes.
- Viral hemorrhagic fevers are a severe and life-threatening kind of illness that can affect multiple organs and damage the walls of blood vessels.
- Scientists believe that the virus could have been circulating in Bolivia for many years, even before it was formally documented.
- Infected people may have been misdiagnosed with dengue as the mosquito-borne illness is known to cause similar symptoms.
- The disease could also be sexually transmitted.
- The rodent species, in which Chapare viral RNA was identified, is commonly known as the pigmy rat and is found across Bolivia and in several of its neighbouring countries.

How is the Chapare hemorrhagic fever treated?

- Since there are no specific drugs to treat the disease, patients generally receive supportive care such as intravenous fluids.
- Maintenance of hydration, management of shock through fluid resuscitation, sedation, pain relief and transfusions as the supportive therapy that can be administered on patients suffering from CHHF.
- As there are very few cases on record, the mortality and risk factors associated with the illness are relatively unknown.

What is the threat posed by the Chapare virus?

- Scientists have pointed out that the Chapare virus is much more difficult to catch than the coronavirus as it is not transmissible via the respiratory route.
- Instead, Chapare spreads only through direct contact with bodily fluids.
- The people who are particularly at risk of contracting the illness are healthcare workers and family members who come in close contact with infected people.
- The disease is also known to be most commonly transmitted in more tropical regions, particularly in certain parts of South America where the small-eared pigmy rice rat is commonly found.

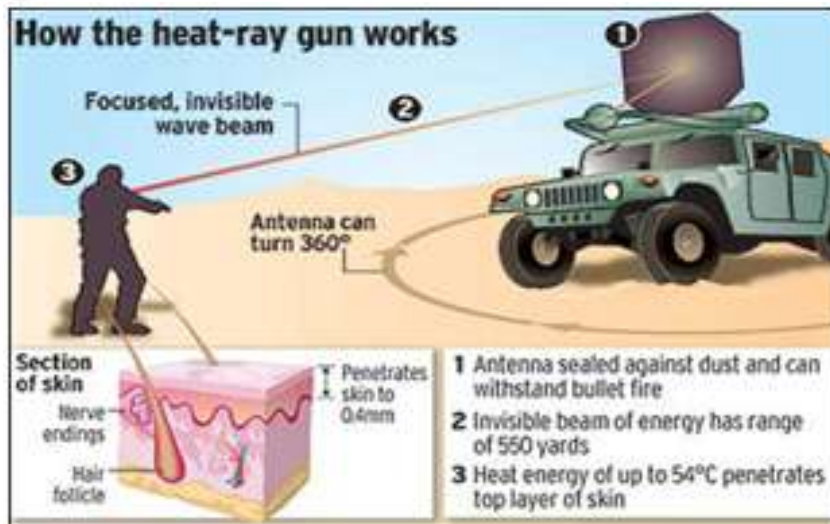
6.2.Microwave weapons



- Context: The Indian Army has rejected as “baseless and fake” a report in the British daily newspaper ‘The Times’, which had quoted a Chinese professor to claim that the Chinese army had used “microwave weapons” to drive Indian soldiers away from their positions in eastern Ladakh.

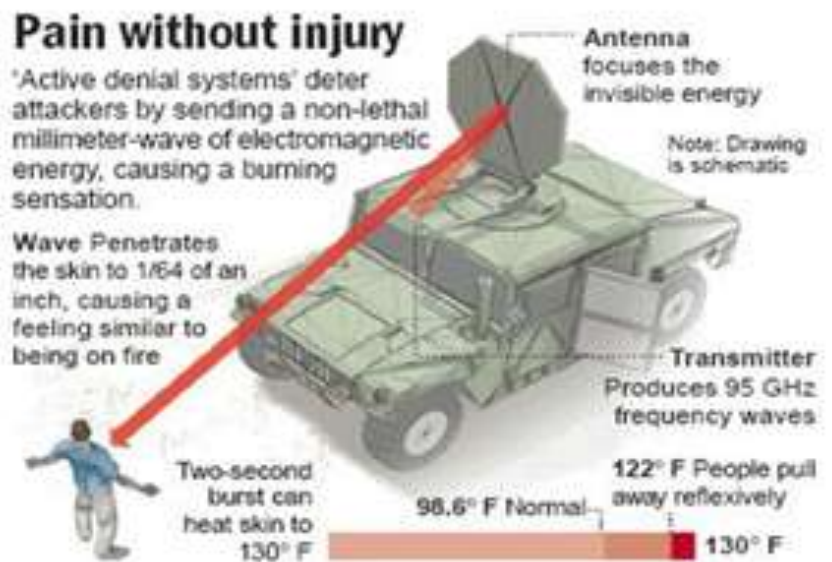
What are ‘microwave weapons’?

- “Microwave weapons” are a type of direct energy weapons, which aim highly focused energy in the form of sonic, laser, or microwaves, at a target.
- They emit beams of high-frequency electromagnetic radiation to heat the water in a human target’s skin, causing pain and discomfort.
- In a microwave oven, an electron tube called a magnetron produces electromagnetic waves (microwaves) that bounce around the metal interior of the appliance, and are absorbed by the food.
- The microwaves agitate the water molecules in the food, and their vibration produces heat that cooks the food.
- Foods with a high water content cook faster in a microwave often than drier foods.



Which countries have these 'microwave weapons'?

- A number of countries are thought to have developed these weapons to target both humans and electronic systems.
- China had first put on display its "microwave weapon", called Poly WB-1, at an air show in 2014.
- The United States has also developed a prototype microwave-style weapon, which it calls the "Active Denial System".
- The US Department of Defence says that "The Active Denial System is needed because it's the first non-lethal, directed-energy, counter-personnel system with an extended range greater than currently fielded non-lethal weapons".
- The symptoms included nausea, severe headaches, fatigue, dizziness, sleep problems, and hearing loss, which have since come to be known as "Havana Syndrome".

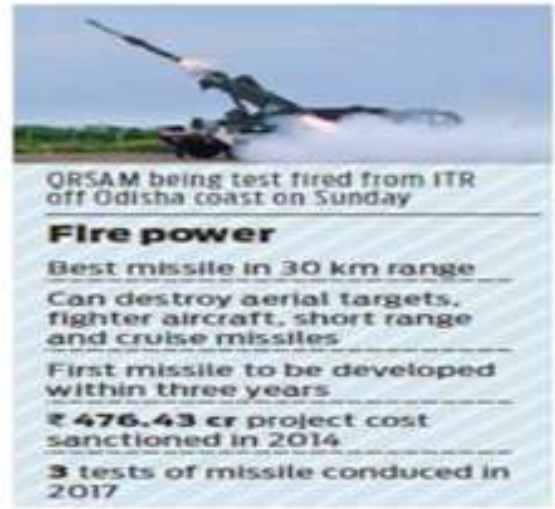


6.3.QRSAM

- The DRDO successfully test fired indigenously developed Quick Reaction Surface to Air Missile (QRSAM) against live targets.
- The high speed missile capable of deceiving enemy radars was flight tested twice in final operational configuration with radar mounted on a vehicle and weapons on the launcher.
- It destroyed British-made Unmanned Aerial Vehicles (UAV) Banshee meeting all mission objectives.
- The missiles were fired from launching complex-III of the Integrated Test Range (ITR) off Odisha coast seconds after the pilot-less target aircraft was flown as target from the launching complex-I.



- QRSAM is being developed for Indian Army with search and track on move capability in a very short reaction time.
- The entire mission was captured by various electro optical tracking systems, radars and telemetry systems.
- Yet to get a formal name, QRSAM is India's first missile which has been developed in a short time as per the requirement of the Army. While the project was sanctioned in July 2014 with a budget of ₹476.43 crore, the missile was delivered within three years.
- The missile can attain high frequency with maneuverability which will provide considerable advantage to the armed forces.
- It can destroy multiple targets 30 km away in less than one minute. Considered to be a unique system in its class, the missile is expected to supplement medium range surface-to-air missile Akash.

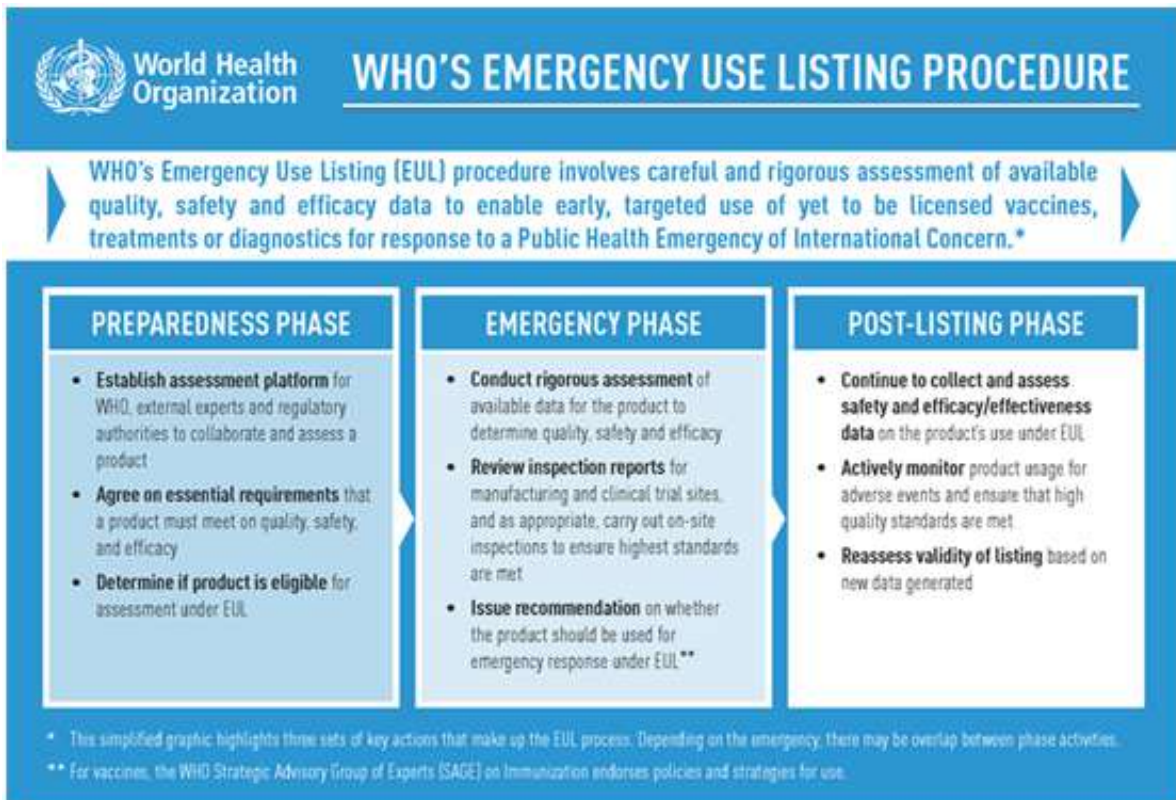


6.4. First ever vaccine listed under WHO emergency use

- For the first time WHO listed a vaccine, nOPV2 developed by Indonesia's Bio Farma, for emergency use in cases of vaccine-derived poliovirus strain which continue to rise.
- This vaccine has been listed for emergency use in several African and East Mediterranean countries and is a first-of-its-kind which lays the foundation for the potential emergency listing of a COVID-19 vaccine.
- Several other countries in WHO's South-East Asia and Western Pacific Asia regions are affected by the outbreak of this vaccine-derived polio strain of viruses (cVDPVs).
- Over the last 30 years, polio cases across the world have been reduced by about 99.9%, but the last few steps to put an end to this disease has become difficult mainly due to the cVDPVs outbreaks.
- While these outbreaks are rare, it occurs if the weakened strain of the poliovirus in the polio vaccine circulates among the under-immunized people.
- If enough kids are not immunized the strain of poliovirus can pass between people and genetically revert to a form that can lead to paralysis.

WHO's Emergency Use Listing Procedure & its impact on COVID-19 vaccine

- The process of EUL or Emergency Use Listing was introduced during the outbreak of Ebola in West Africa in 2014-2016.
- During that time several Ebola diagnostics were listed under emergency use and since then nOPV2 is the first vaccine to be listed under EUL.
- This procedure is aimed at assessing the suitability of a health product which hasn't received a licence during a public health emergency like a virus or infection outbreak like polio or COVID-19.
- The aim is to make the treatment easily and quickly available during the emergency and the procedure weighs the side effects, benefits and threats posed by the use of the product on the basis of evidence from clinical trial data.



- For the EUL process, experts from the concerned fields from national authorities are invited to review and authorise the use of the product.
- After a treatment like a medicine, vaccine or any other diagnostic is listed under WHO's EUL, the global health body focuses on sensitizing other national health organisations about the anticipated benefits and other information about the treatment.
- Moreover, even after being listed under WHO's emergency use, the pharmaceutical company or authority has to continue to generate more data to ensure that it is able to obtain a proper license for the use at a later stage and meets WHO health and safety standards.

6.5.WHO launches strategy to accelerate elimination of cervical cancer

Overview

- This global strategy to eliminate cervical cancer proposes:
 - a vision of a world where cervical cancer is eliminated as a public health problem;
 - the following 90-70-90 targets that must be met by 2030 for countries to be on the path towards cervical cancer elimination:
 - ✓ 90% of girls fully vaccinated with HPV vaccine by age 15 years.
 - ✓ 70% of women are screened with a high-performance test by 35 years of age and again by 45 years of age
 - ✓ 90% of women identified with cervical disease receive treatment (90% of women with pre cancer treated, and 90% of women with invasive cancer managed).

World Health Organization India | **World Health Organization Regional Office for South-East Asia** | **Ministry of Health & Family Welfare Government of India** | **Ministry of Health & Family Welfare Government of India**

National workshop marking the launch of "Global Strategy to Accelerate Cervical Cancer Elimination"

NOVEMBER
17th
SAVE THE DATE
1400-1600 Hrs (IST)

LINK FOR JOINING
<https://youtu.be/1x2Mjv0roRg>

Eliminate Cervical Cancer

Objective - To celebrate the launch of global strategy document and generate country dialogue about achieving cervical cancer elimination

Agenda -

- Cervical Cancer Status and Updates
- Role of technology in improving Diagnostics and Treatment of Cervical Precancers
- Expanding treatment and palliative care services for Cervical Cancer
- Strategies for Cervical Cancer Prevention
- Implementation Support (Program and Policy)

Let us make the difference

CERVICAL CANCER quick facts

FACTS	SYMPTOMS
IT IS THE 2ND MOST COMMON CANCER AFFECTING WOMEN	ABNORMAL VAGINAL BLEEDING OR DISCHARGE
CERVICAL CANCER IS CAUSED BY A COMMON VIRUS KNOWN AS HUMAN PAPILOMAVIRUS (HPV)	BLEEDING BETWEEN REGULAR MENSTRUAL PERIODS, AFTER MENOPAUSE OR AFTER SEXUAL INTERCOURSE
EACH YEAR, ABOUT 500,000 WOMEN WORLD-WIDE ARE DIAGNOSED WITH CERVICAL CANCER AND MORE THAN 270,000 DIE FROM IT	PELVIC PAIN, PAIN DURING SEXUAL INTERCOURSE OR URINATION

MAJOR RISK FACTORS

- SMOKING
- WEAKENED IMMUNE SYSTEM
- OVERWEIGHT OR OBESE
- RELATIVES WITH CERVICAL CANCER HISTORY

- A mathematical model that illustrates the following interim benefits of achieving the 90-70-90 targets by 2030 in low- and lower-middle-income countries:
 - ✓ median cervical cancer incidence rate will fall by 42% by 2045, and by 97% by 2120, averting more than 74 million new cases of cervical cancer;
 - ✓ Median cumulative number of cervical cancer deaths averted will be 300 000 by 2030, over 14 million by 2070, and over 62 million by 2120.

6.6.L&T delivers first hardware for Gaganyaan to ISRO

- Under the Gaganyaan schedule, three flights will be sent in orbit. Of the three, there will be two unmanned flights and one human spaceflight.
- The human space flight programme, called the Orbital Module will have three Indian astronauts, including a woman.
- It will circle Earth at a low-earth-orbit at an altitude of 300-400 km from earth for 5-7 days.
- The payload will consist of:
 - ✓ Crew module - spacecraft carrying human beings.
 - ✓ Service module - powered by two liquid propellant engines.
- It will be equipped with emergency escape and emergency mission abort.
- GSLV Mk III, also called the LVM-3 (Launch Vehicle Mark-3) the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability.
- The mission is expected to cost around Rs 10,000 crore.

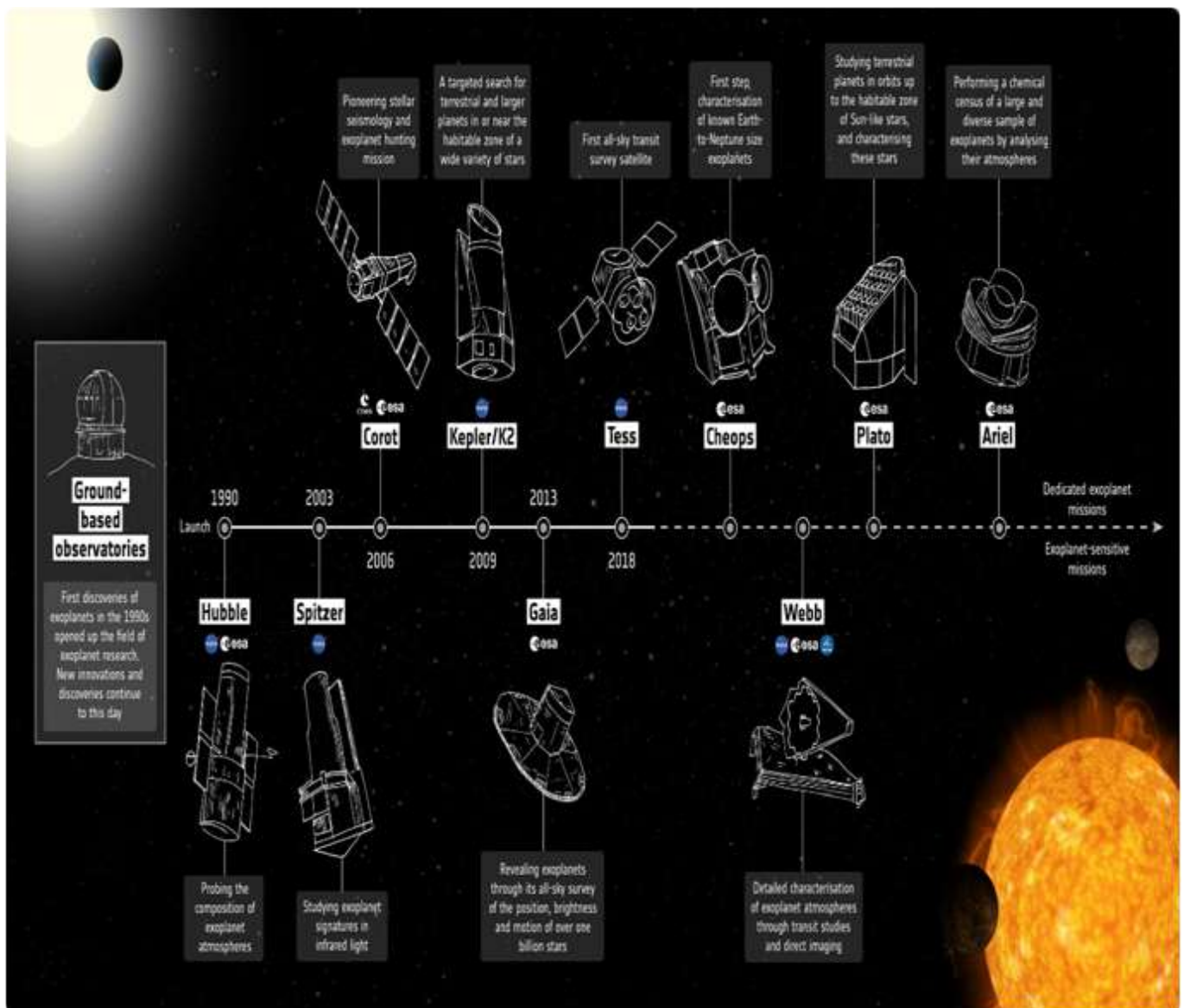


6.7.Ariel Space Mission

- The European Space Agency (ESA) has formally adopted Ariel, the explorer that will study the nature, formation and evolution of exoplanets.
- As of now the existence of more than 4,000 exoplanets is considered confirmed, while there are thousands of other candidate exoplanets that need further observations to say for certain if they are exoplanets.
- Proxima Centauri b is the closest exoplanets to Earth and is four light-years away and inhabits the “habitable zone” of its star, which means that it could possibly have liquid water on its surface.

What are exoplanets?

- Planets that lie outside of the Solar System and orbit around stars other than the Sun are called exoplanets or extra solar planets.



- Exoplanets are not easy to detect since they are much less brighter than the stars they orbit and hence it is difficult to see them directly using telescopes.
- As per NASA, only a handful of exoplanets have been found using telescopes and the rest have been detected using indirect methods.
- One of these methods involves tracking the dimming of a star that happens when a planet passes in front of it. NASA's Kepler Space telescope uses this method to spot thousands of planets.

So what is the Ariel Space Mission?

- Ariel (Atmospheric Remote-sensing Infrared Exoplanet Large-survey), which scientists are planning to launch in 2029, will perform a large-scale survey of over a thousand exoplanets over a period of four years.
- These thousand exoplanets will range from gas giants to rocky planets, which will help them to compile a list of their compositions and properties thereby providing insights about how planetary systems form and evolve.
- Ariel is the first mission of its kind dedicated to measuring the chemical composition and thermal structures of hundreds of exoplanets.

- Ariel will help to answer one of the key questions of ESA's Cosmic Vision Plan, which is, What are the conditions for planet formation and the emergence of life?
- While a large number of exoplanets have already been discovered, there is no clear link between the presence, size or orbital parameters of the planet and the nature of their parent stars.
- Therefore, a large-scale survey that Ariel will perform is required to know more about exoplanets and exoplanetary systems.