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for

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1. Geography

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1.1. Devonian Period

- Spans from 415 million years to 360 million years ago.
- Also known as the Age of the Fish, the Devonian features a huge diversification in fish
- On land, plant groups diversified; the first trees and seeds evolved.
- By the Middle Devonian, shrub-like forests of primitive plants existed.
- This event allowed the diversification of arthropod life as they took advantage of the new habitat.
- The first amphibians also evolved, and the fish were now at the top of the food chain.
- Near the end of the Devonian, 70% of all species became extinct in an event known as the Late Devonian extinction, which is the second mass extinction known to have happened.

Eons	Era	Period	Epoch	Age/ Years Before Present	Life/ Major Events
	Cenozoic (From 65 million years to the present times)	Quaternary	Holocene Pleistocene	0 - 10,000 10,000 - 2 million	Modern Man Homo Sapiens
		Tertiary	Pliocene	2 - 5 million	Early Human Ancestor
			Miocene	5 - 24 million	Ape: Flowering Plants and Trees
			Oligocene	24 - 37 million	Anthropoid Ape
		Palaeocene	Eocene	37 - 58 Million	Rabbits and Hare
			Palaeocene	57 - 65 Million	Small Mammals : Rats - Mice
	Mesozoic 65 - 245 Million Mammals	Cretaceous		65 - 144 Million	Extinction of Dinosaurs
		Jurassic		144 - 208 Million	Age of Dinosaurs
		Triassic		208 - 245 Million	Frogs and turtles
	Palaeozoic 245 - 570 Million	Permian		245 - 286 Million	Reptile dominate-replace amphibians
		Carboniferous		286 - 360 Million	First Reptiles; Vertebrates: Coal beds
		Devonian		360 - 408 Million	Amphibians
		Silurian		408 - 438 Million	First trace of life on land: Plants
		Ordovician Cambrian		438 - 505 Million 505 - 570 Million	First Fish No terrestrial Life : Marine Invertebrate
Proterozoic	Pre-Cambrian 570 Million - 4,800 Million			570 - 2,500 Million	Soft-bodied arthropods
Archean				2,500 - 3,800 Million	Blue green Algae: Unicellular bacteria
Hadean				3,800 - 4,800 Million	Oceans and Continents form - Ocean and Atmosphere are rich in Carbon dioxide
Origin of Stars	5,000 - 13,700 Million			5,000 Million	Origin of the sun
Supernova				12,000 Million	Origin of the universe
Big Bang				13,700 Million	

1.2. Carissa Kopilii

- The plant is threatened by a hydroelectric project on the river and water turned acidic because of coal mining in Meghalaya upstream.
- Kopili River is an interstate river that flows through the states of Meghalaya and Assam and is the largest south bank tributary of the Brahmaputra in Assam.

Brahmaputra

- Brahmaputra river system is one of the largest rivers in the world.
- In the Tibet region, it is known by the name of Yarlung Tsangpo.
- It enters by the names of Siang and Dihang in India.
- And after it is joined by its two main tributaries, the Dibang and the Lohit, it is known by the name of Brahmaputra.
- It flows in Bangladesh by the name of Jumna. Finally, it merges with the Ganga river.



1.3. Grace-Fo Mission

- The Gravity Recovery and Climate Experiment (GRACE) was a joint mission of NASA and the German Aerospace Center (DLR).
- Twin satellites took detailed measurements of Earth's gravity field anomalies from its launch in March 2002 to the end of its science mission in October 2017.
- The Gravity Recovery and Climate Experiment Follow-On (GRACE-FO) is a continuation of the mission on near-identical hardware, launched in May 2018.
- By measuring gravity anomalies, GRACE showed how mass is distributed around the planet and how it varies over time.

- The GRACE missions measure variations in gravity over Earth's surface, producing a new map of the gravity field every 30 days. Thus, GRACE shows how the planet's gravity differs not only from one location to another, but also from one period of time to another. Data from the GRACE satellites is an important tool for studying Earth's ocean, geology, and climate.
- GRACE-FO will continue the work of tracking Earth's water movement to monitor changes in underground water storage, the amount of water in large lakes and rivers, soil moisture, ice sheets and glaciers, and sea level caused by the addition of water to the ocean.
- The scientific community believes data available through this project would fill existing gaps in understanding the full picture of wet and dry conditions that can lead to drought.
- The data would also help in managing the selection of appropriate agricultural crops and predicting yields.

1.4. Reunion Island

- Réunion is an overseas department and region of the French Republic and an island in the Indian Ocean, east of Madagascar and 175 km (109 mi) southwest of Mauritius.



1.5. Chagos Archipelago

- Mauritius, a British colony, achieved independence in 1968 but the U.K. refused to return the Chagos archipelago, claiming sovereignty over the islands.
- For several decades the Chagos archipelago has been the cause of a dispute between Mauritius and the U.K., over the decision in 1965 to separate Diego Garcia from the rest of the archipelago for setting up the military base, in collaboration with the U.S.
- Since the late-1960s, the U.S. has maintained a military base on one of them, Diego Garcia. In 2016, Britain extended the lease to the U.S.
- Recently, both UN General Assembly and the International Court of Justice pressured the UK to withdraw its colonial administration from Chagos archipelago.
- In February 2019, the International Court of Justice (ICJ) had ruled that the U.K. had illegally detached Diego Garcia from the archipelago and split the islands.
- The International Court of Justice has ruled that Britain's continued administration of the Chagos archipelago is unlawful but the ruling is non-binding.
- The U.K. did not act on the ICJ ruling, compelling Mauritius to take the case to the UN, which has now accepted its sovereignty over the whole archipelago.

Major islands	Diego Garcia, Peros Banhos, Salomon Islands, Egmont Islands
Area	56.13 km ²
Administered by	British Indian Ocean Territory (UK)



1.6. What Is G20+?

- The G20 developing nations (and, occasionally, the G21, G23 or G20+) is a bloc of developing nations established on 20 August 2003.
- Distinct and separate from the G20 major economies, the group emerged at the 5th Ministerial WTO conference, held in Cancún, Mexico, from 10 September to 14 September 2003.
- The group accounted for 60% of the world's population, 70% of its farmers and 26% of world's agricultural exports
- Its origins date back to June 2003, when foreign ministers from Brazil, India and South Africa signed a declaration known as the Brasilia Declaration, on June 6, 2003.



1.7. Operation Sanjeevani

- Recently, India supplied 6.2 tonnes of essential medicines to Maldives, under Operation Sanjeevani as assistance in the fight against COVID 19.
- The medicines include influenza vaccines, antiviral drugs such as lopinavir and ritonavir among others as well as consumables such as catheters, nebulisers, urine bags and infant feeding tubes.
- Lopinavir and ritonavir have been used to treat patients with COVID-19 in some countries.

1.8. Sunrise Mission

- NASA has selected a new mission to study how the Sun generates and releases giant space weather storms – known as solar particle storms – into planetary space.
- Not only will such information improve understanding of how our solar system works, but it ultimately can help protect astronauts traveling to the Moon and Mars by providing better information on how the Sun's radiation affects the space environment they must travel through.
- The new mission, called the **Sun Radio Interferometer Space Experiment (SunRISE)**, is an array of six **CubeSats** operating as one very large radio telescope.
- The mission design relies on six solar-powered CubeSats – each about the size of a toaster oven – to simultaneously observe radio images of low-frequency emission from solar activity and share them via NASA's Deep Space Network.
- The constellation of CubeSats would fly within 6 miles of each other, above Earth's atmosphere, which otherwise blocks the radio signals SunRISE will observe.
- Together, the six CubeSats will create 3D maps to pinpoint where giant particle bursts originate on the Sun and how they evolve as they expand outward into space. This, in turn, will help determine what initiates and accelerates these giant jets of radiation.
- The six individual spacecraft will also work together to map, for the first time, the pattern of magnetic field lines reaching from the Sun out into interplanetary space.

1.9. Stranded In India Portal

- The **Ministry of Tourism** launched a portal 'Stranded in India' to help foreign tourists who are stuck in various parts of the country.
- The portal contains numbers for the **COVID-19 helpline**, the **Bureau of Immigration**, as well as information about the control centres set up by state and Union Territory administrations, which tourists can contact for assistance.

1.10. Bio Fortified Crops

- The **bio fortified crop- Madhuban Gajar** was developed by **Shri Vallabhbhai Vasrambhai Marvaniya**, a farmer scientist from Junagadh district, Gujarat.
- He was conferred with a **National Award** by the **President of India** at **Rashtrapati Bhavan**, New Delhi during Festival of Innovation (FOIN)-2017.
- He was also conferred with **Padma Shri** in the year 2019 for his extraordinary work.
- The Madhuban Gajar is a highly nutritious carrot variety developed through the selection method with higher β -carotene content (277.75 mg/kg, source of Vitamin A) and iron content (276.7 mg/kg).

Fortification

- Fortification is the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health

Bio fortification

- Bio fortification is the **process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology.**

Difference

- Bio fortification differs from conventional fortification in that bio fortification aims to increase nutrient levels in crops during plant growth rather than through manual means during processing of the crops.

Examples of bio fortification projects include:

- **iron-bio fortification** of rice, beans, sweet potato, cassava and legumes;
- **zinc-bio fortification** of wheat, rice, beans, sweet potato and maize;
- **provitamin A carotenoid-bio fortification** of sweet potato, maize and cassava; and
- **Amino acid and protein-bio fortification** of sorghum and cassava.

1.11. Samadhan Challenge

- The mega online challenge "SAMADHAN" has been launched by MIC and AICTE in collaboration with Forge and Innovation Curis to test the ability of students and Educators to innovate.

- The participants in this challenge will design, simulate and develop such measures that can be made available to the government agencies, health services, hospitals and other services for quick solutions to the Coronavirus epidemic and other such calamities.

Samadhan Doctrine:

- An operational strategy '**SAMADHAN**' to fight **Left Wing Extremism**. The elements of this strategy are:
 1. S for Smart Leadership
 2. A for Aggressive Strategy
 3. M for Motivation and Training
 4. A for Actionable Intelligence
 5. D for Dashboard-based Key Result Areas and Key Performance Indicators
 6. H for Harnessing Technology
 7. A for Action Plan for Each Theatre
 8. N for No access to Financing

Indian Scientific Expedition to the Southern Ocean 2020

India's polar mission

- 11th expedition of an Indian mission to the Southern Ocean, or Antarctic Ocean
- The first mission took place between January and March 2004.
- This program was initiated by the **Ministry of Earth Sciences (MoES)** and is operated under **National Centre for Polar and Ocean Research (NCPOR)**.

Southern Ocean Research Program

Six Core Projects

- **Study hydrodynamics and biogeochemistry of the Indian Ocean sector of the Southern Ocean;** involves **sampling sea water** at different depths. This will help **understand the formation of Antarctic bottom water**.
- **Observations of trace gases in the atmosphere**, such as halogens and dimethyl sulphur from the ocean to the atmosphere. Will help improve parameterisations that are used in global models.
- Study of organisms called **coccolithophores** that have existed in the oceans for several million years; their concentrations in sediments will create a picture of past climate. [[Like any other type of phytoplankton, Coccolithophores are one-celled plant-like organisms that live in large numbers throughout the upper layers of the ocean. Coccolithophores surround themselves with microscopic plating made of limestone (calcite).
- Investigate **atmospheric aerosols and their optical and radiative properties**. Continuous measurements will quantify impact on Earth's climate.
- Study the Southern Ocean's impact on Indian monsoons.

- Dynamics of the food web in the Southern Ocean; important for safeguarding catch and planning sustainable fishing.

1.12. Antarctic Treaty System

- Antarctic Treaty and related agreements are collectively known as the Antarctic Treaty System (ATS)
- Protocol on Environmental Protection to the Antarctic Treaty
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), 1982

Antarctic Treaty

- Signed in Washington on 1959 by the twelve countries whose scientists had been active in and around Antarctica during the International Geophysical Year (IGY) of 1957-58
- Entered into force in 1961

IMP Provisions

- Antarctica shall be used for **peaceful purposes only**.
- Freedom of scientific investigation in Antarctica.
- Scientific observations and results from Antarctica shall be exchanged and made freely available.
- India is also party to this treaty.

Find out India's Research Centres In Antarctica

2. History

Click [here](#) to watch the topics given below on YouTube

2.1. Civil Services Day

When?

- The Civil Services Day is celebrated on **April 21**

What?

- The day **celebrates all the civil servants** who dedicate their lives to the cause of citizen. The day aims at **renewing their commitments to public service** and excellence in work.
- To mark the Civil Services Day, the country rewards the **Prime Minister's Awards for Excellence in Public Administration** to various officers to celebrate their work, for implementation of Priority programme and innovation categories.

Why?

- Its origin is related to the year **1947** when on **21st April Sardar Vallabh Bhai Patel**, first Home Minister of independent India **inaugurated the All India Services**.
- While addressing the probationary officers at the All India Administrative Service Training School at **Metcalfe House, Delhi** (it currently houses offices of many divisions of DRDO) he delivered a powerful speech and empowered the Civil Servants to adopt the true role of national service leaving behind the past experience. In his speech he referred to civil servants as the '**steel frame of India**'.

2.2. Indian Civil Services

Cornwallis' Role (Governor-General, 1786-93)

- Cornwallis was the first to bring into existence and organise the civil services. He tried to check corruption through—
 - ✓ raising the civil servants' **salary**
 - ✓ strict enforcement of **rules against private trade**
 - ✓ Debarring civil servants from taking **presents, bribes** etc.
 - ✓ enforcing promotions through **seniority**
- Wellesley's Role (Governor-General, 1798-1805)
 - ✓ In 1800, Wellesley set up the **Fort William College** for training of new recruits.
 - ✓ In 1806 Wellesley's college was disapproved by the Court of Directors and instead the **East India College** was set up at **Haileybury** in England to impart two years' training to the recruits.
 - ✓ The **Charter Act of 1793** had reserved all posts worth 500 pounds per annum for the **covenanted servants of the Company**.
 - ✓ The Indians, however, were barred from high posts from the very beginning.

The reasons for exclusion of Indians were

- the belief that only the English could establish administrative services serving British interests;
- the belief that the Indians were incapable, untrustworthy and insensitive to the British interests;
- The fact there was high competition among the Europeans themselves for lucrative posts, so why offer them to the Indians.
- The **Charter Act of 1833** theoretically threw open the services to the Indians, the relevant provisions were never really implemented.

Charter Act of 1853

- The 1853 Charter Act **ended the Company's patronage**, enjoining **recruitment to be through an open competition** henceforth.
- After 1857, when the Indians claimed a share in higher services, the Proclamation of 1858 declared the British intention of including the Indians, freely and impartially, in offices under the civil service.

Indian Civil Service Act, 1861

- This Act **reserved certain offices for covenanted civil servants but the examination was held in England in English language, based on classical learning of Greek and Latin.**
- The maximum permissible age was gradually reduced from 23 (in 1859) to 22 (in 1860) to 21 (in 1866) and to 19 (1878).
- In 1863, **Satyendra Nath Tagore** became the first Indian to qualify for the Indian Civil Service.

Statutory Civil Service

- In **1878-79**, **Lytton** introduced the Statutory Civil Service consisting of **one-sixth of covenanted posts to be filled by Indians of high families through nominations** by local governments subject to approval by the secretary of State and the viceroy. But the **system failed** and was **abolished**

Lee Commission (1924) Recommendations

- the secretary of state should continue to recruit the ICS, the Irrigation branch of the Service of Engineers, the Indian Forest Service, etc.;
- the recruitments for the transferred fields like education and civil medical service be made by provincial governments;
- direct recruitment to ICS on basis of **50:50 parity between the Europeans and the Indians be reached in 15 years;**
- a **Public Service Commission** be immediately established (as laid down in the Government of India Act, 1919)

Government of India Act, 1935

- The 1935 Act recommended the establishment of a **Federal Public Service Commission** and **Provincial Public Service Commission** under their spheres.

Evaluation of Civil Services under British Rule

- Although Indians had begun to enter the coveted ranks of the Indian Civil Services (ICS) ever since 1863, entering the civil services was still extremely difficult for the Indians. The entrance examination for the ICS was held in London in English medium only, and the subjects included classical Greek and Latin learning. Moreover, the maximum age for appearing at the examination was reduced from twenty-three in 1859 to nineteen in 1878 under Lytton.
- **All key positions of power and authority** and those which were well-paid **were occupied by the Europeans**. Though a slow process of Indianisation occurred after 1918 under nationalist pressure, important and senior positions continued to be occupied by Europeans. But gradually, the Indians came to realise that Indianisation of civil service had not, in any way, transferred effective power into Indian hands. The Indian members of the civil service continued to serve the imperialist interests of their British masters.

3. Polity

Click on the following links, to watch the topics given below on YouTube

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)

3.1. Punjab Village and Small Towns Act

- On March 27, authorities in Panchkula invoked an otherwise redundant British-era law, titled the “Punjab Village and Small Towns Act”, to curtail people’s movement during the lockdown. The law was **first enacted in 1918 in erstwhile Punjab** to make provisions for nightly patrol duty by inhabitants of small villages and towns in cases of emergency.

Details

- Under this Act, if the Deputy Commissioner of a district in Punjab or Haryana is of the opinion that in a village, special measures need to be taken to secure public safety, he has the **power to make an order requiring all “able-bodied adult male inhabitants” to patrol the village**. The time period of the applicability of the order is up to the **Deputy Commissioner and the maximum time period is up to one year**.
- The Deputy Commissioner shall have power to alter the number of persons required for patrol duty and the method of their selection, and shall inform the village panchayat of his decision. The aim of the patrol in the present case is to **keep a watch on people entering villages without a valid pass and to make sure villagers follow social distancing norms**. The order, which was put in place on March 27, will remain in force until May 30, 2020, until otherwise revoked or cancelled.
- Those who are not following the provisions will be liable under **sections 9 and 11 of the Act**, which means they may have to pay a fine imposed by the village panchayat or a fine imposed by the deputy commissioner, not exceeding Rs 100.

3.2. Sections 269 & 270 IPC

- During the COVID-19 outbreak, penal provisions, such as Sections 188, 269 and 270 of the Indian Penal Code (IPC), are being invoked to enforce the lockdown orders in various states. Sections 269 (negligent act likely to spread infection of disease dangerous to life) and 270 (malignant act likely to spread infection of disease dangerous to life) come under Chapter XIV of the Indian Penal Code– ‘Of Offences Affecting The Public Health, Safety, Convenience, Decency and Morals’.
- While **Section 269 provides for a jail term of six months and/or fine**, **Section 270 provides for a jail term of two years and/or fine**. In Section 270, the word ‘malignantly’ indicates a deliberate intention on the part of the accused. During the coronavirus outbreak, penal provisions, such as Sections 188, 269 and 270 of the IPC, are being invoked to enforce the lockdown orders in various states.

- The sections have a colonial history. In an 1886 case at the Madras High Court, a person was held guilty under Section 269 for travelling by train despite suffering from cholera. Another person who bought the train ticket was held guilty for abetment of the offence of the former.

3.3. Pradhan Mantri Garib Kalyan Yojana

- Finance Minister Nirmala Sitharaman announced a Rs 1.70 lakh crore 'Pradhan Mantri Garib Kalyan Yojana' relief package to alleviate the distress of those least equipped to bear the cost of staying at home for the larger public interest of battling the COVID-19 pandemic.

There are 5 major components of the PMGKY targeting:

1. Medical insurance cover of Rs 50 lakh for all health workers (doctors, paramedics, Asha workers etc.) treating patients.
2. Help for the poor and those engaged in the unorganised sector.
3. Help for the poor engaged in the organised sector.
4. Help for construction workers.
5. Use the money already available in the "district(-level) mineral fund" to pay for medical testing and screening for the coronavirus.

The package includes the following relief measures in detail:

- The increased entitlement of foodgrains supplied through the public distribution system (PDS) is a major intervention benefitting around 80 crore people. Currently, the PDS provides 5 kg of cereals per person per month at Rs 2/kg and Rs 3/kg for wheat and rice, respectively. That is 25 kg for a family of five.
- Under the package, an additional 5 kg of wheat or rice would be given per person per month, free of cost. Additionally, families will get 1 kg of pulses per month.
- The government announced 6 types of additional cash transfers. These are:
 - ✓ Rs 2,000 per farmer to 9 crore farmers under the PM-KISAN scheme.
 - ✓ An additional Rs 1,000 per month pension for the next 3 months for those receiving old age, widow or disability pensions. This is one-time payment; in other words, it does not mean their basic pensions have been raised. This is expected to help 3 crore beneficiaries.
 - ✓ Rs 500 per month will be transferred for the next 3 months to women holding a Jan Dhan bank account. This is expected to help 20 crore women.
 - ✓ Over 8 crore women who are registered beneficiaries under Ujjwala Yojana will get one LPG cylinder per month for the next three months. While this is not exactly a cash transfer, these cylinders will be free of cost.
 - ✓ Women Self Help Groups across the country – roughly around 63 lakh of them – can now take collateral-free loans up to Rs 20 lakh instead of the existing limit of Rs 10 lakh. This too, is not a cash transfer, rather an enabling provision for receiving higher credit.
 - ✓ Wages paid for manual labour under MGNREGA have been increased from Rs 180 per day to Rs 202 per day. According to the FM, this move will help 5 crore households (since only one person per

household can avail of employment under MGNREGA) and enable them to earn Rs 2,000 as additional income. However, the work needs to be done in a manner that ensures social distancing.

- To alleviate the economic distress of construction workers, the government has asked state governments to use the money — roughly Rs 31,000 crore — already available in a **welfare fund for construction workers**.
- Further the government is also aiming to help those in the organised sector through Employees' Provident Fund in two ways:
 - ✓ Under the first provision, the **Gol will pay the EPF contributions — 12% of the basic salary — of both the employees and the employers for the next three months**. However, this move applies only to about 4 lakh firms where the total number of employees is less than 100, and where 90 per cent of the employees earn less than Rs 15,000 per month.
 - ✓ Secondly, the **government has amended the Employees Provident Fund Organisation (EPFO) regulations to enable workers to withdraw a nonrefundable advance from their EPF accounts**. This amount is, however, limited to 75 per cent of the total money in one's EPF account, or one's salary for three months, whichever is lower.

3.4. New Domicile Rules for J&K

New rules for claiming domicile in Jammu and Kashmir have been issued by the Centre on March 31st 2020. Before August 5 2019, **Article 35 A of the Constitution of India** (now abrogated) empowered J&K assembly to define a J&K resident, who alone were eligible to apply for jobs or own immovable property. The new rules now offer domicile to:

- In the latest gazette notification, Section 3A of the J&K Reorganisation (Adaptation of State Laws) Order 2020, under the J&K civil services (decentralisation and recruitment) Act, has been introduced to **define domicile as that "who has resided for a period of fifteen years in the UT of J&K or has studied for a period of seven years and appeared in class 10th/12th examination in an educational institution located in the UT of J&K."**
- The definition within the gazette expands to include "children of those central government officials, all India services officers, officials of PSUs and autonomous body of central government, public sector banks, officials of statutory bodies, officials of central universities and recognised research institutes of central government who have served in Jammu and Kashmir for a total period of ten years or children on parents who fulfil any of the conditions in sections."
- Additionally, persons **registered as a migrant by the Relief and Rehabilitation Commissioner (Migrants) in the UT of J&K**, will also be included in the definition. "Children of such residents of J&K as reside outside UT of J&K in connection with their employment or business or other professional or vocational reasons" but their parents fulfil any of the conditions provided earlier.

The provisions of the Act **authorise the Tehsildar as competent authority** for issuing the domicile certificate, as opposed to deputy commissioner or any officer specially notified by the state government by way of a gazette notification in the form of a SRO. 29 state laws have been repealed while 109 have been amended. **Section 5A states that no person shall be eligible for appointment to a post carrying a pay scale for not more than level 4 "unless he is a domicile of UT of J&K."** Through the same order, the Centre has repealed the the J&K civil services (special provisions) Act.

3.5. Medical Devices notified as Drugs

- The National Pharmaceutical Pricing Authority stated that all medical devices shall be governed under the **provisions of the Drugs (Prices Control) Order, 2013 (DPCO, 2013) w.e.f. 1st April 2020**. Thus, with effect from 1st April, 2020, all Medical Devices shall be regulated by the Government as Drugs for quality control and price monitoring.
- Government is regulating 24 class of medical devices which have been notified/regulated as drugs under Drugs & Cosmetics Act, 1940 and Drugs & Cosmetics Rules, 1945. Of the above, 4 medical devices viz. (i) Cardiac Stents (ii) Drug Eluting Stents (iii) Condoms and (iv) Intra Uterine Device (Cu-T) are **scheduled medical devices** for which ceiling prices have been fixed.
- These 4 medical devices are under price control. As regard remaining non-scheduled medical devices which are notified/regulated as drugs, NPPA is currently monitoring Maximum Retail Prices (MRPs) under Para 20 of the DPCO, 2013 to ensure that no manufacturer/importers can increase the price more than ten percent in preceding twelve months.

3.6. NPPA

- The National Pharmaceutical Pricing Authority (NPPA) is a government regulatory agency that controls the prices of pharmaceutical drugs in India.
- National Pharmaceutical Pricing Authority (NPPA) was **constituted vide Government of India Resolution dated 29th August, 1997 as an attached office of the Department of Pharmaceuticals (DoP), Ministry of Chemicals & Fertilizers as an independent Regulator** for pricing of drugs and to ensure availability and accessibility of medicines at affordable prices.
- The NPPA regularly publishes lists of medicines and their maximum ceiling prices.

3.7. Lifeline UDAN

- As part of India's war against COVID-19, the Ministry of Civil Aviation, Government of India has launched **"Lifeline Udan" flights for movement of medical and essential supplies across the country and beyond**. Under this initiative, 62 Lifeline Udan flights have been operated during the five day period from 26th to 30th March 2020, transporting over 15.4 tons of essential medical supplies. 45 out of the 62 flights have been operated by Air India and Alliance Air.
- The carriers involved in Lifeline Udan operations include Air India, Alliance Air, Indian Air Force (IAF) and Pawan Hans. Support is being provided by Airports Authority of India (AAI), AAICLAS (cargo and logistics subsidiary of AAI), AI Airports Services (AIASL), PPP airports and private ground handling entities. Private carriers like IndiGo, Spicejet and Blue Dart are operating medical cargo flights on a commercial basis.
- The Lifeline Udan flights are planned using a **hub and spoke model**. Cargo hubs have been established at Delhi, Mumbai, Hyderabad, Bangalore and Kolkata. Lifeline Udan flights connect these hubs to each other and therefrom to different parts of the country.

3.8. Stranded in India Portal

- The **Ministry of Tourism, Government of India**, with an aim to extend support to the foreign tourists who are stranded in India, has come up with a portal to disseminate information regarding the services that can be availed by foreign tourists who are stuck far away from their home land.
- The portal is titled '**Stranded in India**' and aims to act as a support network for foreign tourists stuck in various parts of the country.

3.9. PM CARES Fund

- The **Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund)** was created on 28 March 2020 following the COVID-19 pandemic in India. The fund will be used for combating, containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future. **The Prime Minister is the chairman of the trust. Members will include the defence, home and finance ministers.**
- The fund will also enable micro-donations. The minimum donation accepted for the PM CARES Fund is ₹10. The donations will be tax exempt and fall under corporate social responsibility. **he PM CARES fund is different from the Prime Minister's National Relief Fund (PMNRF), which was created in 1948** and has been used by the Government of India ever since, for example during the recent 2013 North India floods, the 2015 South India floods and the 2019 Kerala floods.

3.10. PMNRF

- Prime Minister's National Relief Fund (PMNRF) in India is the fund raised to provide support for people affected by **natural and man-made disasters**. Natural disasters covered under this include flood, cyclone, earthquake etc. Man-made disasters include major accidents, acid attacks, riots etc. The fund is also allotted to the people for treatment like cancer, kidney transplantation, heart surgery etc.
- India's independence witnessed partition that resulted in mass violence and people were moving across borders in all means. Thus to **support the displaced people from Pakistan** Jawaharlal Nehru created a fund collected from public in January 1948. The fund is fully collected from the public and has no budgetary allocation from the government. The fund collected is exempted from income tax to drive more people into the initiative.
- **Chairman of the fund is the Prime Minister** and he is assisted by joint secretary. The whole of the fund is deposited with scheduled commercial banks and the beneficiaries are identified directly by the Prime Minister from among the beneficiaries. The fund is **recognized as a Trust under the Income Tax Act** and the same is managed by Prime Minister or multiple delegates for national causes. PMNRF operates from the Prime Minister's Office.
- Contributions flowing out of budgetary sources of Government or from the balance sheets of the public sector undertakings are not accepted. Conditional contributions, where the donor specifically mentions that the amount is meant for a particular purpose, are not accepted in the Fund.

3.11.National Security Act

- The Madhya Pradesh Chief Minister Shivraj Singh Chouhan recently said the National Security Act (NSA) would be invoked against persons involved in the alleged late night attack on two policemen who were trying to enforce the lockdown in Itwara locality in old Bhopal.
- The **NSA Act 1980** has its roots in the colonial era. In **1818, Bengal Regulation III** was enacted to empower the British government to arrest anyone for maintenance of public order without giving the person recourse to judicial proceedings. In 1919, the **Rowlatt Act** allowed confinement without a trial. The Jallianwalla Bagh tragedy was a direct result of the protest against these Rowlatt Act.
- Post-independence, Indira Gandhi introduced the controversial Maintenance of Internal Security Act (MISA) in 1971, which was similar to the Rowlatt Act. It was repealed in 1977, and eventually the National Security Act (NSA) 1980 was promulgated. As per the Act, a person can be detained for up to 12 months without a charge. A person can be held for 10 days without being told the charges against them. The person can appeal before a high court advisory board but will not be allowed a lawyer during the trial.
- The National Security Act is an act that empowers the government to detain a person if the authorities are satisfied that he/she is a threat to national security or to prevent him/her from disrupting public order. Key points under National Security Act are:
 1. The act allows preventive detention for months
 2. States or Centre can detain a people from **acting in manner prejudicial to India's security**
 3. A person can be detained if he/she is a threat to India's relations with foreign countries
 4. The Act is invoked to **maintain public law and order**
 5. It empowers the government to **detain foreigners** and regulate his/her presence or expel him/her from India
 6. The provisions in the Act are **re-notified every quarter**
- Article 22 (1) of the Indian Constitution says an arrested person cannot be denied the right to consult, and to be defended by, a legal practitioner of his choice. According to Section 50 of the Criminal Procedure Code (CRPC), any person arrested has to be informed of the grounds of arrest and has the right to bail. However, under National Security Act, **none of these rights are available to the person detained**. The government holds the **right to conceal information** which it considers to be against public interest to disclose. The detained person is not **entitled to any legal aid**. Moreover, the National Crime Records Bureau (NCRB), which collects crime data in India, does not include cases under the NSA as no FIRs are registered.

3.12.MPLAD Scheme

- The Modi cabinet on April 6 2020 gave its nod to the **temporary suspension** of MPLAD Funds during 2020-21 and 2021-22 in view of the adverse impact of the outbreak of COVID-19 in India. The consolidated amount of MPLAD Funds for 2 years – Rs 7,900 crores – will go to **Consolidated Fund of India**.

- The Cabinet has approved an ordinance to reduce the salaries, allowances and pensions of Members of Parliament (MPs), including the Prime Minister, **by 30 per cent for one year** and the amount would be utilised in the fight against coronavirus.
- The Members of Parliament Local Area Development Scheme (MPLADS) is a programme first launched during the Narasimha Rao Government in 1993, aimed towards providing funds for developmental works recommended by individual MPs. The MPs were entitled to recommend works to the tune of Rs 1 crore annually between 1994-95 and 1997-98, after which the annual entitlement was enhanced to Rs 2 crore. The UPA government in 2011-12 raised the annual entitlement to Rs 5 crore per MP.
- According to the document 'Guidelines on Members of Parliament Local Area Development Scheme (MPLADS)' published by the **Ministry of Statistics and Programme Implementation** in June 2016, "The objective of the scheme is to enable MPs to recommend works of **developmental nature** with emphasis on the creation of **durable community assets** based on the **locally felt needs** be taken up in their Constituencies. Right from inception of the Scheme, durable assets of national priorities viz. drinking water, primary education, public health, sanitation and roads, etc. are being created."
- The guidelines recommend MPs to suggest works costing at least 15 per cent of their MPLADS entitlement for the year for areas inhabited by Scheduled Caste population and 7.5 per cent for areas inhabited by ST population. To implement their plans in an area, MPs have to recommend them to the District Authority of the respective Nodal District. The District Authorities then identify Implementing Agencies which execute the projects.
- The respective District Authority is supposed to oversee implementation, and has to submit monthly reports, audit reports, and work completion reports to the Nodal District Authority.
- The guidelines lay down a number of development works, including construction of railway halt stations, providing financial assistance to recognised educational bodies, cooperative societies, bar associations, installing CCTV cameras, and rainwater harvesting systems. The MPLADS funds can be merged with other schemes such as MGNREGA and Khelo India.
- MPLADS was held constitutionally valid by the Supreme Court in its May 6, 2010 judgment. In July 2019, Rajya Sabha Deputy Chairman Harivansh wrote to members, seeking their suggestions on how to address various problems plaguing the MPLADS, as pointed out by numerous reports both by Parliamentary Committees and the Comptroller and Auditor General of India (CAG).

3.13.Arogya Setu

- The Arogya Setu app is designed to help control the spread of coronavirus and make its information accessible to the common people. This special app also helps in finding out corona positive people present nearby. After downloading, this app asks if you have cough, fever or trouble breathing etc. If you do not have any such problem, you will be in the Green Zone.
- This app tells user to keep the mobile phone's Bluetooth and location devices on. Whenever the user visits a crowded place, this app keeps sending messages from nearby mobile phones through the Bluetooth. When the user stands near someone who is also a normal it shows green zone. But if that person becomes corona positive after 10 days, this app will alert you immediately.

- This app is associated with Digital India for the health and well-being of every Indian has been developed in public-private partnership. Available in 11 languages, the app is designed for use on an all-India basis. The personal data collected by the App is encrypted using state-of-the-art technology and stays secure on the phone till it is needed for facilitating medical intervention.

3.14.Zoomraiding

- The lockdown has forced many to work from home. Unless the organisation has its own infrastructure and uses VPN (virtual private network) for accessing its resources, the use of public platforms may result in loss of confidential data. Recently, the popular videoconferencing app Zoom, which can add up to 100 participants in a call, has come across as vulnerable. As the meeting ID can be shared through a link, on screen and other mediums; uninvited guests can also join a meeting and gain access to sensitive information.
- When one uses Zoom, it seeks permission for accessing the user's microphone, web-cam and data storage. This can result in hijacking and loss of private data. Users may also experience 'Zoomraiding' or 'Zoombombing' in which hate speech, pornography or other content is suddenly flashed by disrupting a video call on Zoom. The Computer Emergency Response Team-India (CERT-In) circulated a 'vulnerability note' on February 6, giving Zoom a 'medium' security rating.

3.15.Dekho Apna Desh

- Ministry of Tourism has launched its "DekhoApnaDesh" webinar series from April 14 2020 to provide information on the many destinations and the sheer depth and expanse of the culture and heritage of our Incredible India. The first webinar, which was part of a series that shall unfold, touched upon the long history of Delhi as it has unfolded as 8 cities, each one unique in its character and leaving behind traces which makes Delhi the magnificent city that it is today. The webinar was titled "City of Cities-Delhi's Personal Diary'.
- The series would work towards showcasing the diverse and remarkable history and culture of India including its monuments, cuisine, arts, and dance forms. Natural landscapes, festivals and many other aspects of the rich Indian civilization. The core of the session based itself on tourism awareness and social history and was conducted by the India city walks for Ministry of Tourism

3.16.e-NAM

- The pan-India Agriculture trading portal e-NAM completed four years of implementation on April 14, 2020. Keeping in view the need of making marketing of commodities easier for farmers, e-NAM was envisioned and launched by Prime Minister in 21 mandis on 14th April, 2016 which has now reached 585 mandis across 16 States and 02 UTs.
- It is an important tool to enhance farmer's accessibility digitally to multiple numbers of markets & buyers and to bring transparency in trade transactions with the intent to improve price discovery mechanism, quality commensurate price realization and also to develop the concept of One Nation One Market for agriculture produce. Farmers are free to register on e-NAM portal and they are uploading their produce for sale online to the traders across all e-NAM mandis and traders can bid for the lots available for sale on e-NAM from any location.

- In order to de-bottleneck Logistics of Agri Produce and providing adequate and timely transportation facility to the farmers/traders during lockdown period, e-NAM platform has created an Interface with large transport aggregators like Blackbuck, Rivigo, Mavyn, Truck Suvidha, Truck Guru, Transin Logistics, Elastic Run etc. This would help traders to find and arrange timely movement of produces from mandi to various other locations.

3.17. Pradhan Mantri Bhartiya Janaushadhi Pariyojana

- Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) scheme is being run by the Department of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Government of India with an objective of providing quality and affordable healthcare to anyone in need.
- Mobile application “Jan Aushadhi Sugam” is also available for common public to locate their nearest Janaushadhi Kendra and availability of medicines with its price.
- In the lockdown period, Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) is continuing to provide affordable medicines as well as is also generating awareness about the pandemic.

3.18. YUKTI

- Union Minister for HRD Shri Ramesh Pokhriyal “Nishank” launched a web-portal YUKTI (Young India Combating COVID with Knowledge, Technology and Innovation) on 12th April 2020. It’s a unique portal and dashboard **to monitor and record the efforts and initiatives of MHRD**. The portal intends to cover the different dimensions of COVID-19 challenges in a very holistic and comprehensive way.
- It will cover the various initiatives and efforts of the institutions in academics, research especially related to COVID, social initiatives by institutions and the measures taken for the betterment of the total well-being of the students. The portal will cover both qualitative and quantitative parameters for effective delivery of services to the academic community at large. He said that portal will also allow various institutions to share their strategies for various challenges which are there because of the unprecedented situation of COVID-19 and other future initiatives.

3.19. Swachhata App

- The Ministry of Housing and Urban Affairs in April 2020 announced the launch of a revised version of the existing Swachhata-MoHUA App.
- Swachhata App serves as an effective digital tool enabling citizens to play an active role in the Swachhata of their cities and increase accountability on the part of Urban Local Bodies (ULBs).
- The Swachhata-MoHUA App, a highly popular grievance redressal tool for citizens under the ambit of the Swachh Bharat Mission (Urban) already has over **1.7 Crore+ urban users across the country**. This app has now been modified and strengthened further in order to enable citizens to get their COVID-related complaints also redressed by their respective ULBs.

3.20. Immunity Passports

- As countries around the world are struggling to lift lockdowns due to the novel coronavirus pandemic, policymakers are deliberating how to deal with future outbreaks as and when they emerge. Among

the ideas being considered is an “immunity certificate” or “immunity passport”, whose holders would be able to get back to work.

- Under increasing pressure to reopen their economies, parts of Europe and the US have been considering issuing immunity certificates to people who have recovered from COVID-19 and have its antibodies– thus presumed to be immune to the disease.
- People who are issued these certificates would be allowed to go back to work and move about freely. The idea has also become popular in Italy, where the lockdown exit strategy includes compulsory antibody tests as the country seeks to set up the certificate system. In some areas of the country’s most-affected northern region, the plan has already been implemented.
- Experts have cautioned governments against acting in haste, since much still remains to be understood about the spread of the virus, as well as immunity to it. Lack of necessary information would make categorising between immune and non-immune persons a challenging as well as potentially dangerous task, they insist. At the same time, experts have said that issuing such certificates would create resentment among members of the community, and raise the possibility of stigmatisation.

3.21.Containment Zones in India

- **A containment zone has been defined based on the index case / cluster, which will be the designated epicentre**, the listing and mapping of contacts, geographical distribution of cases and contacts around the epicentre and the administrative boundaries within urban cities /town/ rural area.
- The RRT (Rapid Response Team) has been advised to do a listing of cases, contacts and their mapping. This is to help in deciding the perimeter for action. The decision of the geographic limit and extent of perimeter control is to be the prerogative of the state government.
- Active surveillance in containment zones is being conducted with contact tracing within and outside the containment zone as well. Laboratory capacity for testing all suspect samples is being expanded and surge capacities for isolating all suspect / confirmed cases for medical care is being established. Intensive risk communication via door to door surveys by Asha workers has been implemented across country.
- **Cluster containment strategy** refers to contain the disease within a defined geographic area after early detection, breaking the chain of transmission and preventing its spread to new areas. This would include geographic quarantine, social distancing measures, enhanced active surveillance, testing all suspected cases, isolation of cases, home quarantine of contacts, and social mobilisation to follow preventive public health measures.
- **A buffer zone is an area around the containment zone, where new cases are most likely to appear.** There will not be any perimeter control for the buffer zone. Surveillance activities to be followed in the buffer zone will include review of cases of severe respiratory illness reported since cases began to come out in containment zone epicentre by the District Health Officials to identify any missed case of COVID-19. Enhanced passive surveillance for such cases in the buffer zone through the existing Integrated Disease Surveillance Programme will also begin. All health facilities in the buffer zone will be listed as a part of mapping exercise. Measures such as personal hygiene, hand hygiene, social distancing will be enhanced through enhanced IEC activities in the buffer zone.

- In case of a small cluster in closed environment such as in schools, military barracks, hostels or a hospital-the containment zone will be the building itself. A buffer zone of additional 5 Km radius will be identified. In case of a single cluster in a residential colony, the containment zone would be the administrative boundary of the residential colony and a buffer zone of additional 5 Km radius.
- When multiple clusters in communities (residential colony, schools, offices, hospitals etc) within an administrative jurisdiction are identified, the containment zone would be administrative boundary of the urban district and a buffer zone of neighbouring urban districts as has been done for Jawaharpur in Mohali-Punjab.
- If multiple clusters spatially separated in different parts administrative districts of a city originate, the containment zone will be the administrative boundary of city/ town and congruent population in the peri-urban areas as the buffer zone. When a cluster originates in a rural setting, there must be a 3 Km radius of containment zone and an additional 7 Kms radius of buffer zone.

3.22.UAPA Amendment Act 2019

- Delhi Police has booked Jamia students Meeran Haider and Safoora Zargar under the Unlawful Activities (Prevention) Act. The UAPA Act of 1967 was amended in 2019. The Act provides special procedures to deal with terrorist activities, among other things. It got Parliamentary approval in August 2019.
- Under the original Act, the central government may designate an organisation as a terrorist organisation if it:
 - ✓ commits or participates in acts of terrorism,
 - ✓ prepares for terrorism,
 - ✓ promotes terrorism, or
 - ✓ is otherwise involved in terrorism.
- The 2019 Amendment additionally empowers the government to designate individuals as terrorists on the same grounds.

4. Economy

Click on the following links, to watch the topics given below on YouTube

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)

4.1. Norway's Wealth Fund

Why in News

- It is preparing to liquidate its asset to cover government expenses amid the coronavirus crisis.

Anything Special

- It is the world's biggest wealth fund.

Why the need to withdraw

- Norway government is facing difficulty in managing expenditure with petroleum revenue facing a sharp decline.

Added Concerns

- Reduced cash-flow with companies that the fund had invested as they suspended dividends in bulk.

UNCTAD's Warning

- A latest report by the United Nations Conference on Trade and Development (UNCTAD), the UN trade and development body, the world economy is likely to go into recession in 2020 with a predicted loss of trillions of dollars of global income due to the pandemic

UN Endorses the recession report

- The analysis by the UN Department of Economic and Social Affairs (DESA) says that the global economy could shrink by up to one per cent in 2020.

4.2. NPPA notifies Medical Devices as Drugs

Why in News

- National Pharmaceutical Pricing Authority (NPPA) has clarified on the fears over the disruption in supply of active pharmaceutical ingredients (API) because of Covid-19.

What has been the change

- It increased the ceiling price of 883 scheduled formulations, in compliance of the provisions of Drugs Price Control Order (DPCO) 2013. These are normal price revisions.
- Increase in ceiling price is based on Wholesale Price Index (WPI).
- It brought in medical devices under price control by defining them as 'drugs', under the DPCO.

- It will include all 24 classes of medical devices as drugs, so that no manufacturer will increase their MRP beyond 10 per cent in a year.

4.3. Section 80G Deduction for PM CARES Fund

Why the News

- Donations to the PM CARES Fund shall be eligible for 100 per cent deduction under section 80G of the Income Tax Act.
- P.S. - PM CARES Fund is Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund

What is the Tax Treatment Comparison with PMRF

- The PM CARES Fund will get the same tax treatment as available to the Prime Minister National Relief Fund.

Normal Deduction Limits

- Usually, the amount qualifying for deduction under Section 80G can be either 100 per cent or 50 per cent, depending on where the donation has been made.
- The deduction is further limited to 10 per cent of adjusted gross total income in some cases.

Deduction Limit with PM CARES

- Further, the limit on deduction of 10 per cent of gross income shall also not be applicable for donation made to PM CARES Fund.
- Centre has said that the date for claiming deduction under Section 80G has been extended up to June 30, 2020. So, donations made up to June 30, 2020 shall be eligible for deduction from income of FY 2019-20.

4.4. FCI & Food Supply

What's the News

- After the lockdown of the country, the Food Corporation of India (FCI) has disbursed around 10 lakh tonnes of wheat and rice to different States.

What are the Provisions

- NFSA: Under the NFSA, the targeted population gets 5 kg food grain each per month at a subsidised rate of ₹2 or ₹3 a kg.
- PM Garib Kalyan Anna Yojana: A special package of free 5 kg rice or wheat per month for three months to 81.35 crore families.

Direct Lifting of Grains for Mill Owners

- Because of the ongoing pandemic, district magistrates and collectors have been authorised to lift directly from FCI depots.
- It will be done at the Open Market Sales Scheme (OMSS) reserve price to cater to the needs of roller flour mills and other wheat product manufactures.

- This is in addition to the regular e-auction.

4.5. India & WTO

Some points that will be re-discussed in coming months

- India's Food Stock
- Fisheries Subsidies Negotiations
- Peace Clause on support offered to farmers

Public Stock Holding and Peace Clause

- WTO rules put restrictions on support that developing countries including India can offer their farmers as the WTO looks at such support measures as trade distorting.
- India negotiated with WTO members at the Bali Ministerial Conference in 2013 on public stockholding for food security purposes.
- This decision allows developing members to invoke the peace clause to protect their public stockholding programmes from legal challenge.

Fisheries related Subsidies

- WTO members were seeking to wrap up fisheries negotiations aimed at curbing the 'harmful' fisheries subsidies at the ministerial meeting in Kazakhstan in June 2020

4.6. PMGKY (Pradhan Mantri Gareeb Kalyan Yojana)

Why in News

- Rs 1.70 lakh crore package for the front-line COVID-19 warriors and welfare of the people during this pandemic situation.

Primary Objectives

1. Medical Insurance Coverage to around 20 lakh front-line COVID-19 warriors
2. Food Security
3. Direct Benefit Transfer

Quick Overview

1. Food-Related

- ✓ Per Person: Additional 5 kg rice or wheat
- ✓ Each household: 1 kg of preferred pulse for the next three months.

To people under the Pradhan Mantri Gareeb Kalyan Anna Yojana (around 80 crore people).

2. Farmers

- ✓ Rs 2,000: In excess of Rs.6000
- ✓ Under the Kisan Samman Nidhi programme

3. **MNREGA:** Wage increase of Rs 20 per day.
4. **Poor Senior Citizen/Poor Widows/Poor Divyang:** An ex-gratia of Rs 1,000.
5. **Women:**
 - ✓ **Under PMJDY:** Rs 500 per month for the next three months
 - ✓ **Under Ujjwala Scheme:** Free LPG cylinders to BPL families for the next three months.
 - ✓ **Self-Help Groups (NRLM):** Collateral-free loans of Rs 20 lakh instead of Rs 10 lakh.
6. **Organised Sector Workers:**
 - ✓ **EPFO:** Government of India will pay the EPF contribution for both employer and employee (12% each totalling to 24%) for the next three months.(available for all those establishments with up to 100 employees and where 90% of those employees draw a salary of less than Rs 15,000 per month)
 - ✓ **Construction Workers:** Welfare fund of Rs 31,000 crore for 3.5 crore registered building and construction workers.
7. **District Mineral Fund:** For medical testing, screening and other requirements to combat COVID-19.

4.7. Liberalised Investment Limits, FPI & Indian Debt

Why in News

A major concern:

- March 2020 saw the largest ever sell-off by FPIs with pull-outs totalling to ₹60,000 crore.
- FPIs are using just 37-40 per cent of their quotas in Indian bonds.
- Long-term FPIs using up less than a fourth of their limits.

What is the impact

Because they sold collectively:

- There is considerable turmoil in Indian debt markets.
- It has spiked up yields for even high-quality issuers.
- Liquidity has and dried up.

Are India's Fundamentals an issue?

- India's trade balance, forex reserves and foreign debt, are on a particularly strong footing.
- The Oil price has collapsed which will help bring the current account deficit at a near-zero level.
- India's external debt is at less than 20 per cent of GDP
- Forex reserves are at a record level, providing a comfortable 12-month import cover.

It shows that the bulk of these investors are of the speculative and not fundamental variety.

Way Ahead

- There is a lack of depth and breadth in the domestic bond market.
 - ✓ Instead of higher quantitative limits, policymakers need to focus more on the quality of foreign investors.
- Seeking more quality investors like sovereign wealth funds, pension funds and venture capital funds instead of opportunistic investors like hedge funds.
- Indian government to showcase India's good external debt credentials to overseas investors and global rating agencies.
- A stronger legal framework for debt recovery.
- A vibrant onshore currency market.
- Better sovereign rating for India from global agencies.

4.8. Counter-Cyclical Capital Buffer

What is it

According to Basel-III norms:

- CCCB is a part of norms where central banks specify certain capital adequacy norms for banks in a country.
- It is calculated as a fixed percentage of a bank's risk-weighted loan book.

Why do we need it

- When economy booms, there are a variety of lenders like NBFCs, banks, others.
- The speed of credit approval is very high.
- But when the economy is facing a distress, most sources dry up.
- This can be disastrous, considering that businesses and households need more financial support during such times.
- Hence comes the need for banks to increase their credit during times of distress.
- The CCCB helps here.

What are its benefits

- Acting as a buffer that can be drawn upon during distress
- Helps head off systemic risks by curbing unruly bank credit growth

One very unique point

- CCCB differs from other forms of capital adequacy.
- It helps a bank counteract the effect of a downturn or distressed economic conditions.
- Because of CCCB, banks set aside a higher portion of their capital during good times when loans are growing rapidly, so that the capital can be released and used during bad times, when there's distress in the economy.

How is CCCB supposed to be kept

- CCCB is supposed to be in the form of equity capital.
- Capital distribution constraints such as limits on dividends and share buybacks can be imposed on the bank if the minimum buffer requirements are breached.

CCCB & India

- RBI hasn't required the CCCB to be maintained.
- It had proposed keeping it in 2015 but based on various assessments, the RBI has been keeping the ratio at zero per cent.

CCCB & Other Countries

- The Bank of England announced a cut in the counter-cyclical capital buffer (CCCB) to 0 per cent, from 1 per cent currently.

4.9. Consolidated Sinking Fund

Why in News

- Because of lack of funds with the States, they want the Centre to relax spending norms related with Consolidated Sinking Fund (CSF).
- (They are also demanding with the Building and Other Construction Workers' Welfare Cess Fund (BoCWWCF))

All about CSF

- Set up in 1999-2000 by the RBI.
- Aim: To meet redemption of market loans of the States.
- Initially, 11 States set up the sinking funds.
- 12th Finance Commission (2005-10) recommended that all States should have sinking funds for amortisation of all loans, including loans from banks, liabilities on account of NSSF (National Small Saving Fund), etc.
- The fund to be maintained outside the consolidated fund and the public account of the States.
- It should not be used for any other purpose, except for redemption of loans.
- State governments could contribute 1-3 per cent of the outstanding market loans each year to the Fund.
- The Fund is administered by the Central Accounts Section of RBI Nagpur.

Do all states have it

- Except UP, MP, Rajasthan, Jharkhand, HP and Jammu & Kashmir (now a UT), all States have CSF.

The case of Building and Other Construction Workers' Welfare Cess Fund (BoCWWCF)

- The BoCWWCF is a cess collected only for the welfare of building and other construction workers.

- But it can only be used for registered workers, whose number is much less as compared to the actually employed.
- Some states want that the law could be amended to allow use of fund not just for building and construction workers but other workers, including daily wage workers across all the activities.

4.10. Impact of Low Oil Prices

Some Possible Fall-Outs

- Reduced Inflation
- Reduced CAD
- Recession in a lot of countries that depend primarily on oil exports
- Reduced incentive to pursue Shale production in USA
- Decreased incentive to pursue research on Renewables

4.11. Digital Divide

Meaning

- It refers to the uneven distribution or lack of AAA (availability, accessibility and affordability) of Information and Communication Technologies (ICT) between various groups of a population.

Why in News

- Digital technologies — especially social media platforms and technologies — are playing a crucial role in managing the pandemic by opening multiple channels of:
 - Communication with colleagues
 - Collaboration
 - Ordering goods online
 - Diagnostics, Care work
 - Education
 - Financial Transactions
 - Surveillance, etc.

Apart from information spread

Psychologists:

- Video-calling, group-calling, facilities help lessen mental stress in people who are forced to stay at home.

Some Concerns

- Rumor Mongering / Fake News
- Digital Divide

- ✓ Digital illiteracy
- ✓ Lack of Infrastructure
- ✓ Digital Security
- ✓ Penetration of digital network

Digital Divide and India

- India has nearly 65 crore people having access to the web.
- It is the second-largest internet user-base in the world, behind China.

TRAI:

- India's total internet density stands at about 49 per cent. 25 per cent of India's village population has access to internet services.
- In urban centres, the internet density is nearly 98 per cent.

Internet and Mobile Association of India (IAMAI):

- Total number of monthly active internet users: 45 crore.
- Men: 30 crore
- Women: 15 crore
- This divide, gets worse as we reach the villages from city centres.
- The divide is starker in north India while States in the south have better networks.

UN's Digital Economy Report

- By: UNCTAD
- Warned that the digital divide will worsen inequalities if global collaborative efforts are not taken.

4.12.Rupee NDF & GIFT

What is a Non-Deliverable Forward

- It is a cash-settled, and usually short-term, forward contract.
- The notional amount is never exchanged, hence the name "non-deliverable."
- The counterparties settle the difference between contracted NDF price and the prevailing spot price.

What is Onshore and Offshore Currency Trading

- When the currency is traded vis-à-vis other foreign currencies **within the shores** it is called **onshore currency markets**.
- In India, it is closely regulated by the nodal regulators like the **RBI and SEBI**.
- **Offshore markets** are traded in a **neutral country**.
- For example, the USD-INR contract is traded in over the counter (OTC) market in London, Singapore and Dubai.

- This is also popularly called the Non-Deliverable Forward (NDF) market.
- These are **outside the purview of the RBI and SEBI**, which is one of the reasons the regulators are wary of such offshore markets.
- These offshore markets are preferred by large traders and investors to hedge their risk considering that they are less regulated and the costs are much lower.

An Important Concern:

- The size of the rupee NDF market has grown larger than the onshore forward market.
- The offshore trades have begun to play a larger role in price discovery.

Usha Thorat Task Force:

- NDF market driving onshore exchange rate.

RBI's Attempt

- To begin moving the control over rupee value, back to India.

How to do it:

- Begin the trading of rupee derivatives on exchanges in the GIFT IFSC.
- To allow banks in the GIFT IFSC to trade in rupee non-deliverable forwards.

Latest News

- RBI announced banks in India will be allowed to participate in the rupee NDF (Non-deliverable Forward) market from June 1, 2020.
- RBI has permitted Indian banks which operate banking units in the GIFT IFSC (IFSC Banking Unit - IBUs) and have the licence to act as an authorised forex dealer to participate in the NDF market from June.
- Banks can trade through their branches in India, their foreign branches or through their IBUs.

Way Ahead

Important Concern: Liquidity.

- Platforms with large volumes can execute transactions with minimal impact cost.
- **Required:** An initial pool of traders or hedgers are needed who consistently execute big transactions.

How it can be done:

- Give easy access to FPIs registered in India and NRIs.
- RBI should allow individuals from opening bank accounts in IBUs.
- This will attract Indian HNIs (high net-worth individuals) from participating in the GIFT IFSC.
- **Another Important Concern that needs to be addressed:** Dispute resolution System or Arbitration Process.

4.13. Globalisation & COVID-19

There will be greater push for

- Economic insularity
- Efforts at localisation of supply chains
- Stricter immigration controls

Unemployment

Unemployment has surged in the Western world. There are around:

- 16 million jobless claims in the US
- One million jobs lost in March in Canada
- A few millions unemployed in Europe
- Most job losses will be at the lower end of the skills hierarchy.
- Immigrant workers will be impacted.
- MSMEs in emerging economies enormously depend on export orders.

ILO:

- The pandemic will potentially wipe out the equivalent of 195 million jobs worldwide.
- In India, MSMEs — which account for more than 45 per cent of total exports and employ more than 110 million people — face cancelled orders and a freeze in new orders from buyers in the US and Europe.

Commodities and Raw Materials

- Africa will lose billions of dollars in export revenue in commodities and oil.
- Capital-intensive industries, including in commodities and extractives, mean that economic slowdown looms large on the continent.
- China — the epicentre of Covid-19 — is a key trading partner for Africa.

Services and Global tourism

- Global tourism accounts for 8 per cent of services trade worldwide.
- There will be millions of jobs threatened in Asia Pacific and Africa, two of the fastest growing tourism hubs in the world.
- Restrictions on travel may continue, until Covid has fully run its course.

WTO

- World Trade Organisation (WTO) estimates international trade to steeply decline by up to 32 per cent.
- It is much greater than the impact felt during the 2008 financial crisis.

Some Initiatives

- Japan has earmarked \$2.2 billion of its stimulus package.
- It is to help manufacturers move production units out of China.
- This attempts to reduce dependence on Chinese supplies and inputs.

4.14.Monetary Policy Report

Released by

- RBI.
- **Key Takeaway:** Unanticipated Downward Surprises.
- **Causing:** Decreased GDP growth rates

Reasons

- Weak private consumption
- Collapse in fixed capital formation
- External demand impacted by prospect of global recession
- Domestic output impacted by the lockdown

Expectations:

- Weak demand and the crude oil collapse to moderate CPI inflation.

Past predictions and Reality

- MPC estimated CPI at 3.5 per cent for Q3 FY20 and 3.7 per cent for Q4 FY20.
- The committee found actual rates overshooting at 5.8 per cent and 7.1 per cent respectively.

Reason for slip-up

- Unseasonal rains that disrupted the kharif crop
- Spike in onion prices
- Cost-push factors such as higher mobile tariffs

The basis for MPC's Predictions

- MPC relies heavily on the RBI's:
 - ✓ Forward-looking surveys of households on inflation expectations
 - ✓ Industries on output
 - ✓ Professional forecasters on growth.

Problem with this:

- Such surveys capture prevailing sentiment far more than fundamentals.
- They are subject to change at short notice.

4.15. IMF & Debt Relief

What's the News?

- IMF: It would provide immediate debt relief to 25 member countries.

Under:

- Catastrophe Containment and Relief Trust (CCRT)
- It will help focusing more financial resources on fighting the coronavirus pandemic.

About CCRT

Established: February 2015.

- Then, the IMF transformed the Post-Catastrophe Debt Relief (PCDR) Trust to create the Catastrophe Containment and Relief (CCR) Trust.
- It broadened the range of situations covered by IMF disaster assistance to include fast-spreading epidemics.
- It allows IMF to provide grants for debt relief for the poorest and most vulnerable countries that are hit by catastrophic natural disasters or public health disasters.
- The relief on debt service payments frees up additional resources to meet exceptional balance of payments needs created by the disaster, and for containment and recovery efforts.
- The new trust complements donor financing and the Fund's concessional lending through the Poverty Reduction and Growth Trust (PRGT).

Structure of the CCRT

The CCR Trust has two windows:

1. A Post-Catastrophe Relief window, to provide exceptional assistance in the wake of a catastrophic natural disaster
2. A Catastrophe Containment window, to provide assistance in containing a public health disaster.

The windows have different purposes, qualification criteria, and assistance terms.

4.16. Helicopter Money

Meaning

- Coined by American economist **Milton Friedman**.
- An **unconventional** monetary policy tool.
- It attempts to bring a flagging economy back on track.
- It involves **printing large sums of money and distributing it to the public**.
- It basically denotes a **helicopter dropping money** from the sky.
- Under such a policy, central banks directly increase the money supply and, via the government, distribute **the new cash to the population** with the aim of boosting demand and inflation.

www.YouTube.com/SleepyClasses

www.SleepyClasses.com



- This **money** remains in their hands, and **is never pulled away**.
- It basically means **non-repayable money transfer** from the central bank to the government.

Modern Monetary Theory

- Helicopter Money is similar to MMT.
- It argues that **countries that issue their own currencies can never “run out of money”** the way people or businesses can.
- It is supported by economists such as Stephanie Kelton, L Randall Wray, Bill Mitchell and Warren Mosler.
- It states that countries that have the sovereign right to print their own currency can never run out of money and default.
- A default would have to mean that they do not have any more money to pay their creditors.
- But this can never be the case as long as countries are free to print as much money as they want.

Are they put to use normally

- MMT and Helicopter money are seldom put in use.
- Instead of this Quantitative Easing is often used to infuse liquidity.

In QE

- Central banks purchase government or other securities from the secondary market and attempt to infuse liquidity in an environment where the rates are already touching zero.

Mechanism of HM or MMT

- Since the central bank is an arm of the government, when the balance sheets of the government and the central bank are consolidated, the bonds held by the central bank on the asset side will be cancelled by the same bonds held on the liability side of the government.
- There is also this hope that the future cash flows to the government through higher tax revenue, with demand getting stimulated, will enable it to repay the debt.

Any alternative to this

- Yes, Centre can also get money transferred from the RBI's existing reserves or equity.

Any country using HM or MMT

- The US Federal Reserve is not directly using helicopter money in the original sense.
- Because most of their liquidity infusion is through secondary market.
- Fed is printing money to buy securities from market.
- Bank of Japan is also accused of using Helicopter Money to stimulate a sleeping economy.

Concerns

Inflation:

It may not arise in the current scenario, because:

- Demand is very low and there are deflationary trends coming in.
- Individuals are postponing their discretionary purchases.
- Capex plans are postponed for unknown duration.
- Government is likely to use reserved money for capital expenditure on healthcare spends.
- Weak credit growth.

Impact on currency value:

- Indian currency is not a hard currency like that of US, Canada or EU.
- India uses hard currencies to settle international transactions.
- Excess of INR can cause its serious devaluation, significantly pushing up import bill.
- It will dissuade foreign portfolio investors as well.

What could be done

Government can continue with conventional tools such as:

- Cash handouts to poor families
- Cutting government expenditure under various heads
- Using unclaimed balances under various heads
- Borrowing more from the markets.

4.17.RBI's Monetary Policy & TLTRO

What is the News

- RBI has reduced the reverse repo rate further by 25 basis points to 3.75 per cent.

What is Reverse Repo Rate

- It is the rate at which the banks earn for parking funds with the RBI.
- It is followed by a 90-basis point cut in the reverse repo rate as recently as March 27.

RBI and TLTRO

- In the wake of the COVID-19 crisis and as a tool to enhance liquidity in the system, RBI introduced the Targeted Long Term Repo Operations (TLTROs), particularly the corporate bond market.

What are LTROs

- LTRO are repo operations but only Long Term in nature.

- Liquidity provided in Repos or through tools such as liquidity adjustment facility (LAF) and marginal standing facility (MSF) are usually for short durations (up to 28 days).
- LTRO is a tool that lets banks borrow one to three-year funds from the central bank at the repo rate.
- Banks provide government securities with similar or higher tenure as collateral.
- When LTROs are Targeted, they become TLTROs.
- Here, the RBI wants banks opting for funds under this option to be specifically invested in investment-grade corporate debt such as in investment grade bonds, commercial paper, and non-convertible debentures of NBFCs.

Why have them

- Because of the pandemic, there are large sell-offs in the domestic equity, bond and forex markets.
- It is leading to a rise in the demand for liquidity premium on instruments such as corporate bonds, commercial paper and debentures.
- It was making it difficult for these instruments to access working capital through bank credit.

Other important Benefits of LTROs or TLTROs

- LTROs provide banks with access to cheaper capital from the RBI.
- It encourages them to lend more and spur economic activity.
- Banks can also invest these long-term funds in assets that yield better returns to improve profitability.
- Since banks provide government securities as collateral, the demand for such government bonds increases and helps in lowering yield.

Concerns

- Whether institutions servicing the needs of tiny businesses will benefit from bank funding.
- TLTRO funds are likely to reach only the high-rated NBFCs, which in turn lend to the better-off.
- Further, RBI has excluded HFCs/NBFCs/MFIs from the loan repayment moratorium and these institutions will be under pressure to pursue loan repayments from small businesses which are in crisis today.

Way Ahead

- The RBI should extend the three-month moratorium on working capital payments to all institutions.
- Relaxing the NPA norm for accounts availing of the moratorium will help banks and customers.
- SBI has suggested that it is worth considering whether the 90-day rule itself should be extended to 180 days.
- Fiscal stimulus has to be put in to spur the appetite to consume and invest, which has drastically collapsed.

Where else has LTRO been used

- LTRO were introduced by the European Central Bank during its sovereign debt crisis that began in 2008.
- LTRO in ECBs language stood for Long-Term Refinancing Operations.

4.18.COVID-19, China & FDI

News

- There were concerns that Chinese organisations could mount takeovers of Indian companies during the Covid-triggered market rout.
- Central government took a decision to regulate Foreign Direct Investment (FDI) from neighbouring countries, including China.

What was the order

- That all inbound FDI, even into non-strategic sectors would henceforth be subject to Central approvals for entities from countries that share land borders with India.

What was the concern

- There are worries about hostile entities gaining a back-door entry into sectors with strategic or national security implications at a vulnerable time like this when the market valuation of various big corporations is at an all time low.

Some Immediate Concerns

- Indian businesses are in dire need of capital
- The note makes no distinctions between existing and new investments
- It treats greenfield and brownfield investments alike.
- It could also lead to re-opening of past deals.

Some Long Term Concerns

- It could also lead to re-opening of past deals.
- India's start-up ecosystem, which offers one of the few bright spots in the economy, is heavily dependent on Chinese risk capital, with 18 of India's 30 tech unicorns said to feature China-linked investments.
- It can impact economic activity and job creation.

Important to Note

- Allowing Chinese FDI that facilitates some local value-addition appears to be vastly preferable to allowing a flood of finished goods imports that worsen the trade balance.
- A large proportion of FDI flowing into India tends to be routed through multi-layered structures housed in low-tax jurisdictions such as Singapore, Hong Kong and Mauritius.

After the Crisis

It is important to note that:

- Because of low oil prices, remittances economy will be under siege
- Domestic corporates will be debilitated by the lockdown
- Portfolio investors are already in flight mode

India will rely heavily on FDI flows to re-fire its investment engine.

4.19.Draft National Renewable Energy Policy

Proposed by

- Ministry of Power

Proposed in

- Draft Electricity (Amendment) Bill, 2020.

Primary Ideas

- To promote generation of electricity from renewable sources of energy
- To prescribe a minimum percentage of purchase of electricity from renewable and hydro sources of energy.

Other important proposals in Electricity (Amendment) Act, 2020

- The National Load Despatch Centre shall be responsible for optimum scheduling and despatch of electricity across different regions.
- Cross-border trade of electricity to be taken up.

4.20.Oil Futures

- Covered in 2-Minute series [video](#)

5. Environment

Click on the following links, to watch the topics given below on YouTube

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)

5.1. Himalayan Ibex

- A recent study by scientists of the Zoological Survey of India (ZSI) has proved that Himalayan Ibex, distributed in the trans-Himalayan ranges of Jammu and Kashmir, Ladakh and Himachal Pradesh, is a distinct species from the Siberian Ibex.
- The paper, 'Genetic evidence for allopatric speciation of the Siberian Ibex (*Capra sibirica*) in India,' has recently been published in *Endangered Species Research*, an international peer-reviewed journal.
- In Asia, Ibex is distributed in the Montane habitats, ranging in elevations from 500 m to 6,700 m in countries like India, Kazakhstan, Tajikistan, Mongolia, Pakistan, Southern Siberia and China.
- In India, the Ibex is distributed mainly in the trans-Himalayan ranges of the Union Territories of Ladakh and Jammu and Kashmir and Himachal Pradesh up to the river Sutlej.
- Siberian Ibex is a species of wild goat and is distributed in diverse habitats, ranging from cold deserts, rocky outcrops, steep terrain, high-land flats and mountain ridges to low mountains and foothills.
- The study revealed that Siberian Ibex was estimated to have diverged from Alpine Ibex during the Pleistocene epoch (2.4 million years ago) rather than during the Miocene-Pliocene boundary (6.6 million years ago).
- To unravel the complexity in species recognition of Indian Ibex, the researchers, under a project funded through the National Mission on Himalayan Studies implemented by the Ministry of Environment, Forest and Climate Change, undertook field surveys and collected faecal samples from Lahaul and Spiti, Himachal Pradesh.
- The scientists behind the discovery are now working to understand how the mountain oscillations might have led to this allopatric speciation with the inclusion of sophisticated tools of genomics and GIS.
- They presumed that the 'montane systems', formed by a series of climatic oscillations and temporal topographic metamorphosis, have broken up the contiguous distribution of widespread species and accelerated allopatric speciation (speciation because of geographic and reproductive isolation).



5.2. Earth Hour

- Even as the world battles the novel coronavirus which continues to claim lives, Earth Hour, observed annually on the last Saturday of March, will still be celebrated on 28th March, albeit digitally.

- As per WWF India's Earth Hour kit, there are many things that people can do while being at home, besides switching off non-essential lights and posting switch-off pictures on social media.
- People are encouraged to take up the Give Up pledge by posting what they would give up to reduce their carbon footprint, and as a result be the 'voice for the planet'.
- This includes a pledge to give up single use plastics or paper wastage or water wastage or food wastage.
- Earth Hour is a worldwide movement organized by the World Wide Fund for Nature (WWF) since 2007.
- The event is held annually encouraging individuals, communities, and businesses to turn off non-essential electric lights for one hour, from 8:30 to 9:30 pm as a symbol of commitment to the planet.
- It was started as a lights-off event in Sydney, Australia, in 2007.
- Since then, it has grown to engage more than 7,000 cities and towns across 187 countries and territories.

5.3. Air Quality Improves

- According to the Centre-run System of Air Quality and Weather Forecasting and Research (SAFAR), the measures against COVID-19 have led to a drop in PM2.5 (fine particulate pollutant) by 30% in Delhi and by 15% in Ahmedabad and Pune, respectively.
- The level of Nitrogen Oxide (NOx) pollution, which can increase the risk of respiratory conditions, has also reduced.
- NOx pollution is mainly caused due to high motor vehicle traffic.
- Local factors like shutting down of industries and construction and traffic have contributed in improving the air quality.
- Rain is also helping, but the curbs on local emissions are playing a significant role.
- The low AQI and the blue skies proved beyond doubt that a lot of the polluted air was anthropomorphic, that is, man-made.

5.4. Urban Wildlife

- Urban wildlife is a broad term that includes animals such as the Small Indian Civet, mongoose, jackal, jungle cat, toddy cat, (Asian Palm Civet), squirrel in addition to a number of amphibians, reptiles and birds, which have learned to coexist with humans.
- The lockdown would definitely have impacted the urban wildlife.
- All of a sudden, noise pollution has reduced, air quality has improved and traffic has practically come to a standstill.
- This change would certainly have impacted them in a positive way.

5.5. Pench Tiger Death Raises Covid-19 Fears

- A 10-year-old ailing male tiger, in the Pench Tiger Reserve (PTR), died due to respiratory illness.
- The National Tiger Conservation Authority (NTCA) is investigating whether the tiger should be tested for the novel coronavirus disease.
- However, swabs from the throat and nose to test for rhino tracheitis, a viral infection that afflicts cats and causes respiratory illness were collected.
- An advisory by the Ministry of Environment, Forest and Climate Change
- It has asked all Chief Wildlife Wardens (CWLWs) of all States/UTs to take immediate preventive measures to stop the transmission and spread of the virus from humans to animals and vice versa, in National Parks/Sanctuaries and Tiger Reserves.
- Both the Central Zoo Authority (CZA) and the NTCA have issued guidelines that require zoos to be on the “highest alert” and monitor animals on closed-circuit cameras 24/7 for “abnormal behaviour and symptoms.”
- The CZA has also directed zookeepers to approach sick animals wearing personal protective equipment and isolate and quarantine them.
- Pench Tiger Reserve or Pench National Park is one of the premier tiger reserves of India and the first one to straddle across two states - Madhya Pradesh and Maharashtra.
- The Reserve lies in the southern lower reaches of the Satpura Range of hills on the southern border of Madhya Pradesh.
- It derives its name from its life line-the River Pench.
- The forests found in Pench Tiger Reserve are divided into three parts -
- Southern tropical wet dry forest, southern tropical dry deciduous teak forest and southern tropical dry deciduous mixed forest.



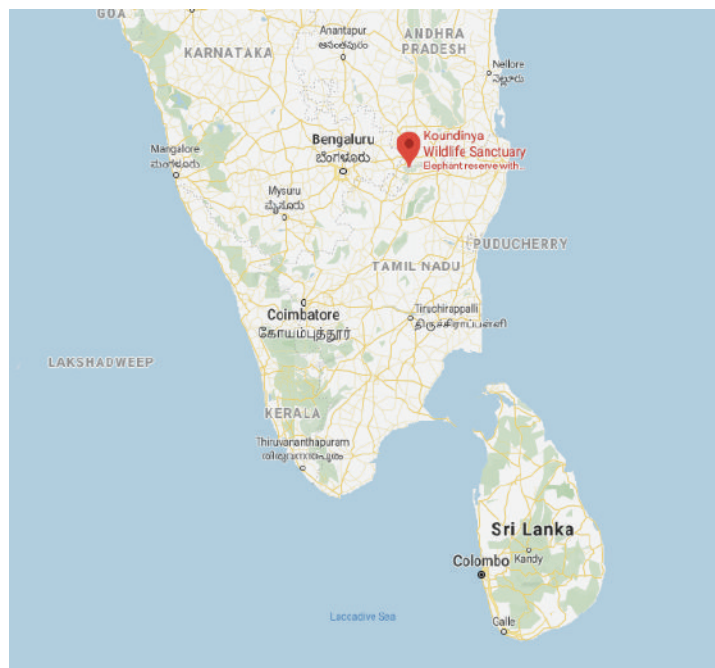
5.6. National Board for Wildlife

- The Standing Committee of the National Board for Wildlife had its first ever video-conferencing meet recently where infrastructure projects in 11 States were cleared.
- Projects that encroach into forests or protected reserves require NBWL approval as part of the government’s environmental clearance process.
- Most of the projects were given in-principal approval.
- National Board for Wild Life is a “Statutory Organization” constituted under the Wildlife Protection Act, 1972.
- Theoretically, the board is “advisory” in nature and advises the Central Government on framing policies and measures for conservation of wildlife in the country.

- However, it is a very important body because it serves as apex body to review all wildlife-related matters and approve projects in and around national parks and sanctuaries.
The NBWL is chaired by the Prime Minister.

5.7. Koundinya Wildlife Sanctuary

- Kaundinya Wildlife Sanctuary is a wildlife sanctuary and an elephant reserve situated in Andhra Pradesh, India.
- It is the only sanctuary in Andhra Pradesh with a population of Asian elephants, which migrated after 200 years from neighbouring regions. (from the forests of Anekal-Hosur in Tamil Nadu and Bannerghatta in Karnataka)
- The sanctuary has dry deciduous forests with thorny scrubs interspersed with trees.
- These forests have small ponds, tanks and the Kaundinya and Kaigal tributaries of Palar River.



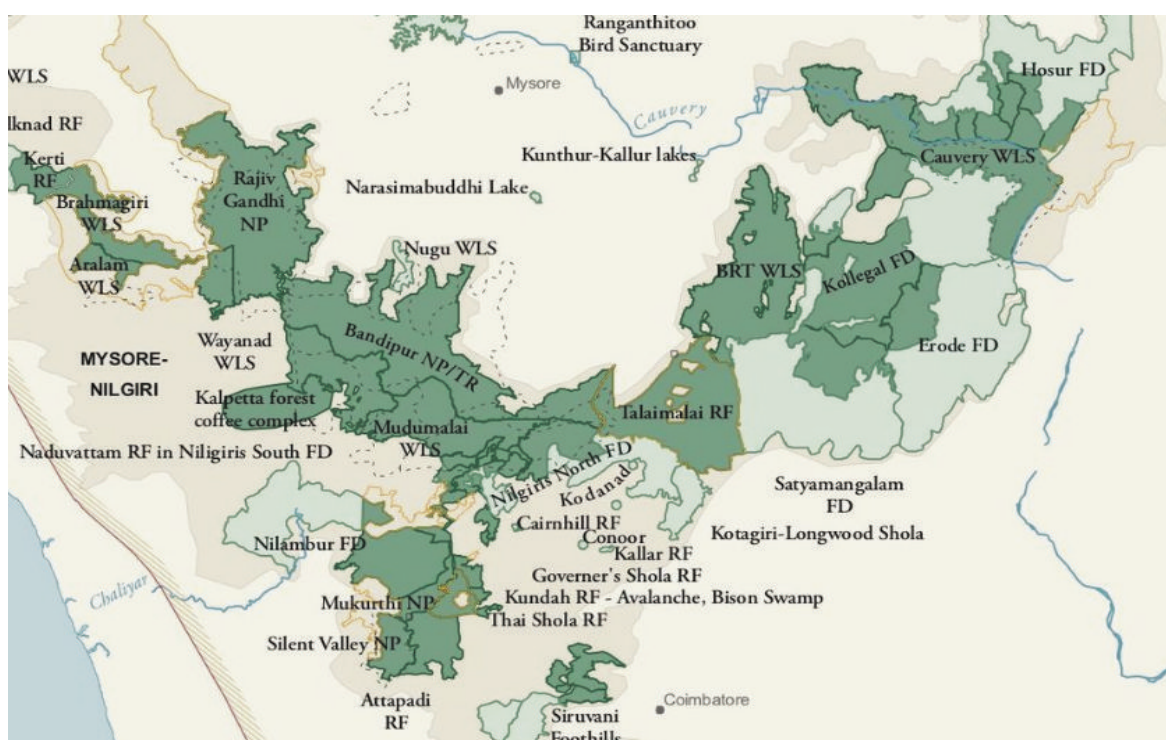
5.8. Renewable Energy Certificates

- Sales of renewable energy certificates rose over 79 per cent to 8.38 lakh units in March compared to 4.68 lakh in the same month a year ago owing to good supply, according to official data.
- Renewable Energy Certificates (RECs) are a type of market-based instrument.
- One REC is created when one megawatt hour of electricity is generated from an eligible renewable energy source.
- It helps to promote renewable sources of energy and development of the market in electricity.
- In India, RECs are traded on two power exchanges — Indian Energy Exchange (IEX) and Power Exchange of India (PXIL).
- The price of RECs is determined by market demand, and contained between the 'floor price' (minimum price) and 'forbearance price' (maximum price) specified by the Central Electricity Regulatory Commission (CERC).

- Under the renewable purchase obligation (RPO), bulk purchasers like discoms, open access consumers and capacitive users are required to buy certain proportion of RECs. They can buy RECs from renewable energy producers to meet the RPO norms.
- The proportion of renewable energy for utilities is fixed by the central and state electricity regulatory commissions.
- The REC mechanism is a market-based instrument to promote renewable sources of energy and development of market in electricity.
- It provides an alternative voluntary route to a generator to sell its electricity from renewable sources just like conventional electricity and offer the green attribute (RECs) separately to obligated entities to fulfil their RPO.

5.9. Wayanad Wildlife Sanctuary

- It is located in Wayanad, Kerala, India.
- Established in 1973, the sanctuary is now an integral part of the Nilgiri Biosphere Reserve.
- It is bounded by protected area network of Nagarhole and Bandipur of Karnataka in the northeast, and on the southeast by Mudumalai of Tamil Nadu.
- It is part of the Deccan Plateau and the vegetation is predominantly of the south Indian moist deciduous teak forests.
- Also, the sanctuary has pastures of the west-coast semi-evergreen trees.
- The wildlife sanctuary comes under Protect Elephant and one can spot herd of elephants roaming in the area
- Wayanad Wildlife Sanctuary is one of the safest havens for different species of vultures like the White-rumped Vultures and the Red-headed Vultures.



5.10. Egyptian Vultures

- Until a few years ago, Egyptian Vultures were sighted all over Tamil Nadu.
- Now, their population is in single digits.

Reasons for decrease in population

- Use of Diclofenac as veterinary drug
- Besides carcass, this species also feeds on worms in cow dung, and other insects and bugs.
- The use of de-worming drugs in cattle and pesticide-laden insects could have also wreaked havoc on the diet of Egyptian vultures.
- Vultures often congregate around tanneries looking for food.
- The use of chemicals laden with chromium, sodium and ammonium in tanneries might have also affected the population.
- At a recently concluded meeting of the Vulture Conservation Working Group - South India at Salim Ali Centre for Ornithology and Natural History at Anaikatti, near Coimbatore, the importance of establishing Vulture Safe Zones (VSZs) in Tamil Nadu was discussed.
- The concept of Vulture Safe Zones (VSZs) were developed in South Asia as an in-situ approach to remove the threat to Vultures from diclofenac, and other toxic NSAIDs used in veterinary practice and to ensure free from carcass poison.
- The VSZ, usually set up in a 100km radius, focusses on engaging local authorities and communities.
- They are motivated to ensure a safe zone for vulture by removing threats to its survival.
- The International Union for Conservation of Nature (IUCN) lists White-backed Vulture, Long-billed Vulture, Red-headed Vulture and Slender-billed Vulture as Critically Endangered species, which is the penultimate stage before which they go extinct.
- If one goes by the numbers of Egyptian vultures in Tamil Nadu, the needle points to its Critically Endangered status, but IUCN lists it as Endangered as it is not yet 'critical' in other parts of the world

5.11. New Pit Viper in Arunachal Pradesh Named After Harry Potter Character

- A new species of green pit viper found in Arunachal Pradesh, *Trimeresurus salazar*, is the fifth variety of reptile to have been discovered in Arunachal Pradesh in a little more than a year.
- A group of researchers who recorded this serpent has named it Salazar's pit viper.
- The name was inspired by Salazar Slytherin, the co-founder of J.K. Rowling's fictional Hogwarts School of Witchcraft and Wizardry.
- Pit vipers are venomous snakes distinguished by their heat-sensing pit organs between the eye and the nostril.

5.12. Earth Day

- Google marked the 50th anniversary of the Earth Day with a special interactive doodle dedicated to one of the smallest and most critical organisms - the bees.
- Every year, April 22 is celebrated as Earth Day to raise public awareness about the environment and inspire people to save and protect it.
- The year 2020 marks 50 years since the start of this modern environmental movement in 1970.
- The theme of Earth Day 2020 is "Climate Action".
- As people have to stay inside their homes amid Covid-19 lockdown, World Earth Day 2020 was celebrated digitally.
- People could join '24 hours of action'.
- One could also take 22 challenges that include measuring your carbon footprint, doing a plastic audit, skype a scientist, work for the earth, zero waste for one day and consume 1 meal per day this week on a plant-based diet.
- It was first celebrated in 1970, and is now coordinated globally by the Earth Day Network and celebrated in more than 193 countries each year.
- The idea of commemorating such a day was propounded by Gaylord Nelson, an American environmentalist and politician.
- The Earth Day also recognizes a collective responsibility, as called for in the 1992 Rio Declaration (Earth Summit), to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.
- The Paris Agreement was also opened for signature on 22 April 2016 - Earth Day - at UN Headquarters in New York.
- World Earth Day encourages people to take more steps for the protection of nature and to thank mother earth for the rich environment.

5.13. Yamuna Water Quality Improves During Lockdown

- The quality of water in the Yamuna has improved along the Delhi stretch during the nationwide lockdown, compared to April last year, according to a report by the Delhi Pollution Control Committee (DPCC).
- DPCC, along with the Central Pollution Control Board (CPCB) carried out the study after being asked by a National Green Tribunal (NGT) appointed monitoring committee.
- An increased flow of water in the river has also contributed to less pollution, the report said.
- But the report noted that the Yamuna has still not met the "water quality criteria".
- DPCC collected water samples from nine locations along the Yamuna and twenty locations of drains and compared the different parameters with values from April 2019.
- According to the report, the pollution has reduced between 18% to 21% at various places.

- Five locations have shown 18%-33% reduction in Biochemical Oxygen Demand (BOD) levels.
- The rest of the locations have shown slight to considerable increase in BOD levels.
Four of the nine locations where dissolved oxygen (DO) was nil in 2019 showed DO levels of 2.3-4.8 mg/l in 2020.

5.14.Devanahalli Pomelo

- Devanahalli pomelo or *chakota*, a citrus variety almost on the brink of extinction, is now set to receive a new lease of life.
- Bangalore International Airport Limited (BIAL) which owns and operates Kempegowda International Airport (BLR-Airport), as part of the 50th anniversary of World Earth Day, hopes to conserve the endangered fruit by cultivating it within the airport campus.
- The Devanahalli pomelo, which comes with a Geographical Indication (GI) tag, has a unique, sweet taste, unlike other varieties.
- Hectares of pomelo plantation, which once dotted Devanahalli region, have now all but vanished.
- Devanahalli is cool and has moderate humidity, producing agro-climatic weather conditions which are conducive to the growth of the Devanahalli pomelo.
- The soil is generally red soil consisting of gravel, loam, and clay with high drainage conditions, favourable for the growth of this tree.
- Rainfall in the area varies from 300–807 millimetres (11.8–31.8 inches) per year.

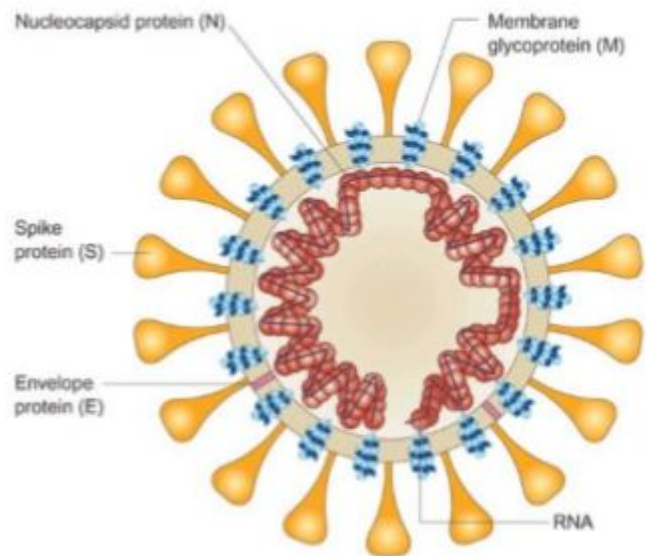
6. Science & Tech

Click on the following links, to watch the topics given below on YouTube

- [Video 1](#)
- [Video 2](#)
- [Video 3](#)
- [Video 4](#)

6.1. Alcohol and Soap on Coronavirus

- The coronavirus can stay alive in surfaces for some time but it replicates only when within the cell
- Like other corona viruses, SARS-CoV-2 particles are spherical and have proteins called spikes protruding from their surface
 - ✓ These spikes latch onto human cells, then undergo a structural change that allows the viral membrane to fuse with the cell membrane
 - ✓ The viral genes can then enter the host cell to be copied, producing more viruses
- Like the virus that caused the 2002 SARS outbreak, SARS-CoV-2 spikes bind to receptors on human cell structure called angiotensin-converting enzyme 2 (ACE2)
- All of this is held together by a fatty layer called an envelope
 - ✓ Disruption of the envelope causes the virus to come undone and kills it
- Alcohol's function on killing the virus is much the same as that of the common soap
- Novel coronavirus has a lipid envelope
 - ✓ Soap being a detergent destroys the envelope and the same is true for alcohol



6.2. Virus from Bats

- WHO says SARS-CoV was transmitted to humans from civet cats and MERS-CoV from dromedary camels
 - ✓ Both the viruses are believed to have originated from bats and subsequently passed on to other animals
- Studies have shown that bats are natural reservoir for a large number of viruses
 - ✓ Rabies, Marburg, Nipah and Hendra viruses
- Bats are able to carry a host of viruses without becoming ill, except for rabies, which affects them

- ✓ bats make up a quarter of all mammal species, have developed stronger immune systems through the process of evolution which enabled them to fly
- ✓ When bats fly, the energy requirement in their bodies cause cells to break down into bits of DNA which are then released. While most organisms would treat such DNA particles as foreign invading bodies, in bats such responses are more muted
- ✓ Due to this weakened response, bats do not develop inflammations, which can cause a considerable toll on the body's energy. This is the reason so many viruses can exist in their bodies
- Coronaviruses are well known to undergo genetic recombination which may lead to new genotypes and outbreaks

6.3. DRDO and War against Corona

- DRDO is ready with four different items to be deployed in 'war against coronavirus'
 - ✓ Hand sanitiser
 - ✓ Critical care ventilator
 - ✓ N99 masks: Five-layer mask with two layers of nano mesh
 - ✓ Bodysuit: Critical requirement for doctors, medical staff, sanitation workers
- ❖ Earlier DRDO had developed the body suit for medical and paramedical staff to manage and evacuate the casualties in the event of radiological emergencies. These are right now converted as a full body suit to stop contamination. These suits are washable

N95

- N95 masks are basic anti-pollution masks that filter 95 per cent of the pollutants
- It filters the particle pollutants including PM2.5
- It is designed in such a way that its multiple layers of filters ensure that the air you breathe is 95% free from dust particles and pollutants
- They are designed for regular use and will not protect from harmful chemical vapours, gases and more
- They can be used a number of times but only till the filter is not clogged
- These are recommended by doctors as a precautionary measure against swine flu, common cold and other viral infections

N99 and N100

- They filter PM2.5 like fine pollutant particles with 99-99.97 per cent accuracy
- But these are not resistant against oil-based pollutants
- An N99 mask is more effective in terms of filtration as compared to N95 mask
- ✓ Since the breathing resistance in an N99 mask is high, it is not recommended for those who are already having some trouble in breathing

6.4. DRDO Develops Casualty Evacuation Bags

- DRDO has designed it to transport or isolate persons infected with Covid-19
 - ✓ The bag is water and air-proof and treated to deal with biological agents
- The bag is in the shape of a rigid cylinder and is made of non-woven, water-repellant fabric with air and waterproof zippers as well as ventilator
- It is coated with a film to cater to a chemical, biological, radiological and nuclear (CBRN) environment with requisite protection against blood and viral penetration.

6.5. Bhilwara Model

- It is a textile town in Rajasthan
- Its strict lockdown, strategic containment plan and dedicated healthcare work has resulted in no new coronavirus infection in the last six days
 - ✓ Before the clampdown it was worst-hit district of Rajasthan
- Actions taken
 - ✓ Sealing of borders of the city
 - ✓ Screening of out-patients and in-patients in hospitals, 10 lakh households
 - ✓ People identified and put under isolation
 - ❖ Dedicated beds for COVID-19 patients, isolation facilities at hotels and such establishments
 - ✓ Curfew imposed but supply of food and essentials sustained
 - ✓ Community leaders and religious gurus roped in to motivate people to stay indoors
 - ✓ Legal action against unwanted social elements

6.6. Diamond Princess Model

- Researchers drew this model to predict an outbreak in the cramped neighbourhoods
 - ✓ Diamond Princess was a cruise ship which was quarantined off the coast of Japan
- The study's Diamond Princess model portrayed a closed-setting scenario, forecasting 26 per cent of infections among populations in congested neighbourhoods
 - ✓ It warned that one in every 450 patients could succumb
 - ✓ It estimated that five per cent of affected patients in India would need intensive care. Of them, half require mechanical ventilator support
 - ✓ In severe cases, one among eight to ten patients might die
 - ✓ One casualty might also occur among 40-50 non-severe COVID-19 cases

Recommendations

- Early identification and training for frontline healthcare workers
 - ✓ Use of personal protective equipment, screening of symptomatic contacts, isolation measures and management of cases
 - ✓ Emergency crews should be given health and life insurance
- Building bio-security wards
- Public health measures should be initiated at multiple levels, including but not limited to, public messaging

6.7. Samadhan Challenge

- Innovation Cell of the Ministry of Human Resources Development (MHRD) and All India Council for Technical Education (AICTE) in collaboration with Forge and InnovatioCuris launched a mega online challenge - SAMADHAN - to test the ability of students to innovate
- Students participating the challenge will search and develop such measures that can be made available to the government agencies, health services, hospitals and other services for quick solutions to the Coronavirus epidemic and other such calamities
- It will also work to make citizens aware, to motivate them, to face any challenge, to prevent any crisis and to help people get livelihood
- Under the "Samadhan" challenge, the students and faculty will be motivated for doing new experiments and new discoveries and provide them with a strong base leading to spirit of experimentation and discovery

6.8. Patents

- China was the biggest source of applications for international patents in the world in 2019
 - ✓ United States was at the top spot since the global system was set up more than 40 years ago
- World Intellectual Property Organisation (WIPO) oversees the system (Patent Cooperation Treaty System) for countries to share recognition of patents
- China filed 58990 applications which is a 200-fold increase in just 20 years
- United States had filed the most applications in the world every year since the Patent Cooperation Treaty system was set up in 1978
 - ✓ More than half of patent applications - 52.4% - now come from Asia, with Japan ranking third, followed by Germany and South Korea
- Ownership of patents is seen as a sign of economic strength and industrial know-how of a country
- India is among the top 15 countries and three middle income countries
 - ✓ China, Turkey (2058) and India (2053)

WIPO

- It is a global forum for intellectual property policy, services, information and cooperation
- It is a specialized agency of the United Nations

6.9. Contact Tracing

- It is the process of identifying, assessing and managing people who have been exposed to a disease to prevent transmission
- People who may have been exposed to the virus from affected countries are to be traced and monitored for 28 days

Who is a Contact?

- Any person who had contact with patients under treatment for suspected, probable or confirmed case of coronavirus
- Any person who provided care for the patient suspected or confirmed with the disease, including a health care worker or family member

6.10. Arogya Setu and Sahyog App

Arogya Setu

- It is a government endorsed application that helps trace the contacts of those who may have been infected by COVID-19
 - ✓ Survey of India has made public a trove of maps
- The app is a coronavirus tracker of sorts works on the basis of contact tracing and can help a user identify possible coronavirus 'hotspot' around a person's area
- It can help people stay safe and adopt necessary precautions, thus help prevent community transmission to an extent
- By the basis of geo tagging, it can also alert a specific user about their proximity to a nearby infection case or hotspot
- It also helps users self-identify their risk and monitor their health assessment, considering the times when it can get difficult (and most of all, is not particularly safe to step out and visit health clinics)
- Arogya Setu app also helps people identify the symptoms, alert them about the best safety precautions and other relevant information concerning the spread of COVID-19

Sahyog App

- Survey of India has developed a mobile application named Sahyog for its users viz Government (Centre/State) departments, Organisations, Institutions, Govt employees. Academic Institutions, Students and citizens of India, to voluntarily support and contribute in preparing updating and enriching the national database of the country
 - ✓ Survey of India is the National Mapping Agency of the country under Department of Science & Technology

6.11.Herd Immunity

- It is the indirect protection from a contagious infectious disease that happens when a population is immune either through vaccination or immunity developed through previous infection
 - ✓ Enough people are immune to a disease that it stops spreading
- Even people who aren't vaccinated, or in whom the vaccine doesn't trigger immunity, are protected because people around them who are immune can act as buffers between them and an infected person
- Once herd immunity has been established for a while, and the ability of the disease to spread is hindered, the disease can eventually be eliminated
 - ✓ This is how the world eradicated smallpox
- Natural herd immunity (achieved through infection rather than vaccination) can be challenging to induce through unchecked infection as there would be a very high rate of serious illness and death
- Even when vaccines are available, it is not always possible to achieve herd immunity for very long. Some viruses, such as seasonal flu, mutate frequently, evading the body's immune response

COVID-19 & Herd Immunity

- The more infectious a disease, the greater the population immunity needed to ensure herd immunity
- COVID-19 has a lower infection rate than measles, with each infected person passing it on to two or three new people, on average
 - ✓ It means that herd immunity should be achieved when around 60% of the population becomes immune to COVID-19

6.12.SATYAM

- Department of Science and Technology (DST) has invited proposals to study appropriate intervention of yoga and meditation in fighting COVID-19 and similar kinds of viruses
 - ✓ Proposals have been invited under the Science and Technology of Yoga and Meditation (SATYAM) programme of the DST, a department under the Ministry of Science and Technology
- The project may address improving immunity, improving respiratory system and interventions to overcome respiratory disorders and other dimensions like stress, anxiety and depression-related issues due to isolation, uncertainty and disruption in normal life
- SATYAM is a cognitive science programme
- COVID-19 has three dimensions
 - ✓ Stress (worry sitting at home)
 - ✓ Respiratory
 - ✓ Immune System

6.13.Noor Satellite

- Iran claimed it has put its first military “Noor” (Light) in a 425 km high orbit
- Iran launched its first civilian satellite in 2009
- It was launched by a three-stage rocket powered by a combination of solid and liquid fuels
- Earlier in Feb 2020, Iran’s satellite named ‘Zafar’ (Victory) failed to reach orbit

UN Resolution 2231 (2015)

- Iran is called upon not to undertake any activity related to ballistic missiles designed to be capable of delivering nuclear weapons, including launches using such ballistic missile technologies

6.14.Types of Coronavirus Treatments

- Antivirals: Attempt to stop the virus from reproducing by attacking the machinery that hijacks cells and forces them to replicate the virus’ genome
- Antibodies/vaccines: Vaccines currently in development are targeting a protein on the virus’ surface called ‘spike’, which helps it break into cells. Vaccine would train the body to recognise and destroy the specific protein in the spike
- Anti-inflammatories: New coronavirus doesn’t destroy cells but overstimulates the immune system’s inflammatory response. Anti-inflammatories target molecules that cause inflammation

6.15.Chitra Gene LAMP-N

- Sree Chitra Tirunal Institute for Medical Sciences and Technology has developed a much cheaper and faster diagnostic test kit which is high confirmatory for the diagnosis of COVID-19
- The test kit can detect the ‘N Gene’ of SARS COV2 using reverse transcriptase loop-mediated amplification of viral nucleic acid (RT-LAMP)
- This technology can check 100 percent matching with PCR (Polymerase chain reaction) and accuracy
- The test kit can detect two regions of the gene which will ensure that the test does not fail even if one region of the viral gene undergoes mutation during its current spread
- ICMR will approve the kit following which license need to be obtained from CDSCO for manufacture
- Current PCR kits in India enable detection of E gene for screening and RdRp gene for confirmation.
 - ✓ Chitra Gene LAMP-N gene testing will allow confirmation in one test without the need for a screening test and at much lower costs

Proteins in Coronavirus

- COVs are enveloped, positive-stranded RNA viruses possessing a comparatively large genome and comprising of four structural proteins
 - ✓ Spike (S): Responsible for virus attachment to the receptor and fusion with cell membrane
 - ✓ Nucleocapsid (N): Interacts with the viral RNA to form the ribonucleo protein

- ✓ Envelope (E): Helps in virions assembly and comprises ion channel actions
- ✓ Membrane (M): Shares in the assembly of new virus particles
- The four structural gene i.e., S, N, E and M, and two non-structural gene, RNA dependent RNA polymerase (RdRP) and main protease (Mpro) genes were studied recently

6.16.Reverse Vaccinology

- The process of antigen discovery starting from genome information
- It uses informatics and computer modelling to study the novel coronavirus and to identify all its proteins
- Since the genome sequencing of the virus is already known, the work is made easier and the computer with the special software reveals the nature of all its proteins. Once the nature of the proteins are known, then the molecules that can block them can be developed after a series of experiments
- Earlier, researchers had to do a viral culture in the laboratory to develop a vaccine
 - ✓ This was time consuming (to find the protein in the virus)
- In reverse vaccinology, we now have the facility to unwrap the entire genome sequence
- Using 'reverse vaccinology', vaccinations were developed for meningococcal and staphylococcal infections all through the world
- The researchers have identified a synthetic polypeptide which can bind the viral genome

6.17.OIC and Islamophobia

- Organisation of Islamic Countries has criticised the Indian government, calling it to take steps to tackle the growing Islamophobia in India
- Earlier in April 2020, US Commission on International Religious Freedom criticised India, Pakistan and Cambodia for failure to protect vulnerable religious communities and increased stigmatisation

OIC

- It is a 57-member organisation whose mission statement says "collective voice of the Muslim world"
- It was established in 1969 and first met at Morocco
- It is the second largest intergovernmental organisation in the world after the UN, with population reaching over 1.8 billion
- It has non-Arab members like Turkey, Iran and Pakistan and five observers including Russia and Thailand