



News Analysis (18 Jan, 2021)

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Russia Pulls Out Of Open Skies Treaty

Why in News

Recently, Russia pulled out of the **Open Skies Treaty (OST)** citing earlier withdrawal of the USA from the treaty.

- According to Russia, provisions of the pact that allows unarmed surveillance flights over member countries had been seriously compromised by the withdrawal of the United States.
- This move was made after the **USA pulled out of the Open Skies Treaty** in November 2020, arguing that Russian violations made it untenable for the United States to remain a party.

Note:

This is different from the **Open Sky Agreements** which are **bilateral agreements** that the two countries negotiate to provide rights for airlines to offer international passenger and cargo services. It expands international passenger and cargo flights. Recently, the **United Arab Emirates (UAE)** has expressed interest to have an **Open Sky Agreement with India**.

Key Points

- **Reasons for USA Withdrawal:**
 - **Russia’s continuous non compliance:** The USA had for over a decade accused Russia of non-compliance with OST protocols, blaming Moscow of obstructing surveillance flights on its territory, while misusing its own missions for gathering key tactical data.
 - **OST misused to claim Ukrainian region:** The USA also accused Russia of designating an airfield in the annexed Crimean Peninsula as an Open Skies refueling base as an illegal attempt by Russia to cement its claim to the Ukrainian region.
 - **Risk to critical infrastructures:** Russia misused its flights over the USA and Europe to identify critical infrastructure for potential attack in a time of war.
- **Reasons for Russia Withdrawal:**
 - **USA limiting OST:** Russia defends its non compliance with the OST to allow flights over Kaliningrad (Russian exclave in Eastern Europe that lies between NATO allies Lithuania and Poland) citing the example of the US imposing similar limits on flights over Alaska.
 - **No assurance from NATO members:** After USA withdrawal from OST, Russia did not get the sought assurance from **North Atlantic Treaty Organization (NATO)** allies who continued to remain on the treaty that they would not transfer data collected by their flights over Russia to Washington (USA).
- **Significance:**
 - **For European NATO members:**

Russia’s departure could adversely impact Washington’s European allies, which rely on OST data to track Russian troop movements in the Baltic region.
 - **Departure from Arms control treaties:**
 - The failure of the Open Skies Treaty follows the demise of another significant arms control accord, the **Intermediate-Range Nuclear Forces (INF) Treaty**, after both the US and Russia left it in 2019. This treaty aimed at eliminating their stocks of intermediate-range and shorter-range (or “medium-range”) land-based missiles which could carry nuclear warheads.
 - Withdrawal of the USA and Russia from OST has further deepened doubts on extension of the **New START treaty**, which expires in February, 2021.
 - **For India:**

Growing mistrust between global powers could make it difficult for India to maintain good mutual relationships with both the countries if the hostility escalates in future.

Open Skies Treaty (OST)

- **Background:**
 - It was first **proposed by USA in 1955** to deescalate tensions during the **Cold War**.
 - This treaty was eventually signed in 1992 **between NATO members and former Warsaw Pact countries** following the demise of the Soviet Union. It finally came into effect in 2002.
 - The **Warsaw Pact (1955)** was signed between Russia and her satellite states shortly after West Germany was admitted to NATO.
 - The Pact was a mutual defense agreement, which the Western countries perceived as a reaction against West Germany's membership of NATO.
- **Aim:**

Building confidence: The OST aims at building confidence among its 34 signatories countries through mutual openness, thus reducing the chances of accidental war.
- **Terms:**
 - **Open surveillance:** Under the treaty, a member State can undertake surveillance **on any part of the host nation**, with the latter's consent.
 - Only **approved imaging equipment** is permitted on the surveillance flights.
 - Officials from the host state **can also stay on board** throughout the planned journey.
 - **Sharing strategic information:** The information gathered, such as on **troop movements, military exercises** and missile deployments, **has to be shared with all member States**.
- Both **US and Russia were signatories** of the treaty.
- India is **not a member** of this treaty.

Source: TH

47th G7 Summit

Why in News

The **United Kingdom** has invited Indian Prime Minister as a guest to attend the 47th **G7 summit** that is scheduled to be held in **June 2021**.

Key Points

- **Other Guest Countries:**

Apart from India, **Australia and South Korea** are also invited to participate in the proceedings of the summit as “**guest countries**”.

- **UK, India & G7:**
The UK was the first **P5 member** to support a permanent **UN Security Council seat for India** and the first G7 member to invite India to a **G7 Summit in 2005**.
- The proposed summit will be the **first in-person G-7 summit in almost two years**.
- **Objective:**
Unite leading democracies to help the world **build back better** from the coronavirus and create a **greener, more prosperous future**.

Group of Seven (G-7)



- **About:**
 - It is an intergovernmental organisation that was formed in **1975**.
 - The bloc **meets annually to discuss issues of common interest like global economic governance, international security and energy policy**.
 - The G-7 does not have a formal constitution or a fixed headquarters. The decisions taken by leaders during annual summits are non-binding.
- **Members:**
 - G-7 is a bloc of **industrialized democracies i.e. France, Germany, Italy, the United Kingdom, Japan, the United States, and Canada**.
 - The G7 was known as the 'G8' for several years after the original seven were joined by **Russia in 1997**.
 - The Group returned to being called G7 after Russia was expelled as a member in 2014 following the latter's annexation of the **Crimea region of Ukraine**

- **Summit Participation:**

- Summits are held annually and hosted on a rotation basis by the group's members.
- The groundwork for the summit, including matters to be discussed and follow-up meetings, is **done by the “sherpas”**, who are generally personal representatives or members of diplomatic staff such as ambassadors.
- The leaders of important international organizations like **European Union**, **IMF**, **World Bank** and the **United Nations** are also invited.

- **Challenges and Concerns:**

- **Policies:**

- Internally the G7 has a number of disagreements, e.g. clash of the USA with other members over taxes on imports and action on climate change.
- The organisation has also been **criticised for not reflecting the current state of global politics or economics.**

- **Not Representative:**

- There are no G7 members from Africa, Latin America or the southern hemisphere.
- It is also facing a challenge from fast-growing emerging economies, like **India and Brazil are not members of the G7.**
- However, G-20 was formed in 1999, in response to a felt need to bring more countries on board to address global economic concerns.

- **India and G-7**
 - **Previous Participation:**
 - The participation of India at the **45th summit in Biarritz, France, in August 2019** is a reflection of deepening strategic partnership and recognition of India as a major economic power.
 - India was also invited for the 2020 summit **hosted by the USA** which could not take place due to the **pandemic**.
 - Previously India had attended the G-8 summit (it became G-7 from G-8 with the expulsion of Russia in 2014) five times between **2005 and 2009**.
 - **Important Platform for Deliberations:**

India's ability to **safeguard its core sovereign concerns** such as trade, Kashmir issue and India's relations with Russia and Iran can be discussed with G7 members.
 - **Taking on Global Stage:**

India raised issues on **climate change** and at meetings which **signaled India's growing willingness to lead on issues** that are points of contention for countries like China and the USA.
 - **Significance of India at G7:**

As current president of **Brazil-Russia-India-China-South Africa (BRICS)** and G20 president in 2023, India will play a **key role driving in multilateral cooperation helping to build back better** around the world.

Source:TH

K-Shaped Economic Recovery

Why in News

Recently, the latest readings of the **Nomura India Normalization Index (NINI)** suggested the impact of **Covid-19** on Indian Economy and the **K-Shaped Recovery** through which the Indian Economy is recovering.

Nomura Services India Private Limited (Nomura Holdings Inc) is a consumer services company.

Key Points

- **Effect of Covid-19 on Households:**
 - Households **at the top of the pyramid are likely to have seen their incomes largely protected, and savings rates forced up** during the lockdown, increasing ‘fuel in the tank’ to drive future consumption.
 - Households **at the bottom are likely to have witnessed permanent hits to jobs and incomes.**
- **Effect of the Current Monetary Policy:**
 - A long lasting period of **ultra-accommodative monetary policy** has led to a fall in real lending rates and spreads for corporates and households that should eventually come as lagged relief to the interest-sensitive sectors.
 - An **economic spread** is a measure of a company's ability to make money on its capital investments.
- **Impact of Vaccination:**

Lagging sectors such as travel, tourism and hospitality will finally emerge out of the effect of **Covid-19.**
- **Economic Recovery after Covid-19:**
 - As the **fiscal deficit** in FY 2020-21 has widened to roughly 7% of GDP, which is double the pre-pandemic target of 3.5 % of GDP. The government may, therefore, feel encouraged to **rely on higher fuel taxes, disinvestment, and sin taxes to bolster coffers.**
 - India is going through a **K-shaped recovery**, wherein corporates and households with stronger balance sheets have recovered more robustly, while smaller firms and poorer households probably remain **trapped in a vicious cycle of poverty and indebtedness** instigated by the **pandemic.**

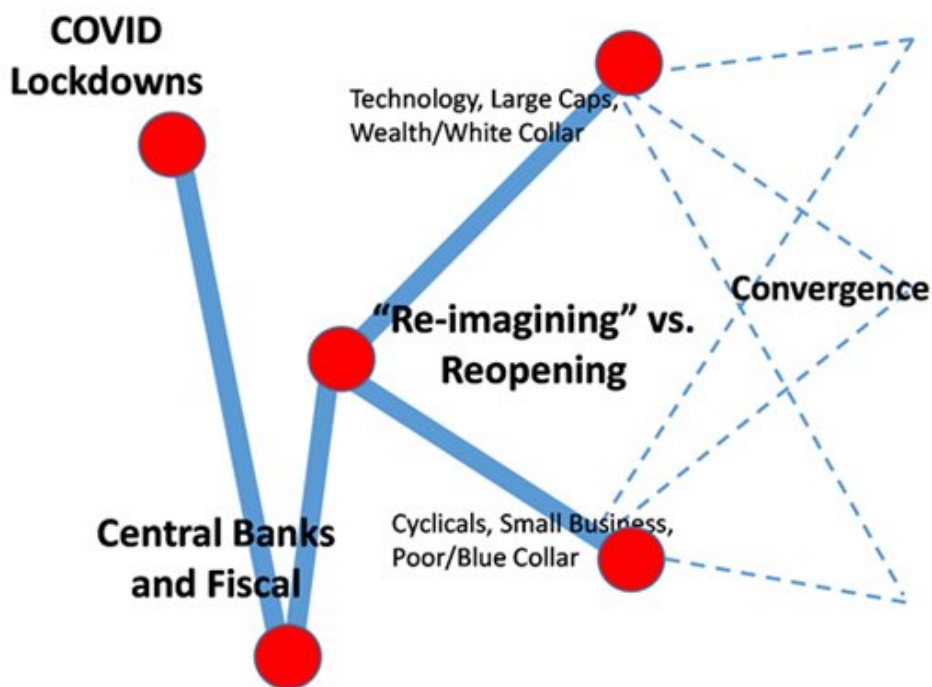
Economic Recovery

- **About:**
 - It is the **business cycle stage** following a **recession** that is characterized by a sustained period of improving business activity.
 - Normally, during an economic recovery, **GDP** grows, incomes rise, and unemployment falls and as the economy rebounds.
- **Types:**

Economic recovery can take many forms, which is depicted using alphabetic notations. For example, a **Z-shaped recovery, V-shaped recovery, U-shaped recovery, elongated U-shaped recovery, W-shaped recovery, L-shaped recovery** and **K-shaped recovery.**

- **K-Shaped Recovery:**

- A K-shaped recovery occurs when, following a recession, **different parts of the economy recover at different rates, times, or magnitudes.** This is in contrast to an even, uniform recovery across sectors, industries, or groups of people.
- A K-shaped recovery **leads to changes in the structure of the economy** or the broader society as economic outcomes and relations are fundamentally changed before and after the recession.
- This type of recovery is called K-shaped because the path of **different parts of the economy when charted together may diverge, resembling the two arms of the Roman letter "K."**



Implications of a K-Shaped Recovery after Covid:

- Households at the bottom have experienced a permanent loss of income in the forms of jobs and wage cuts, this will be a **recurring drag on demand, if the labour market does not heal faster.**
- To the extent that Covid has triggered an effective income transfer from the poor to the rich, this **will be demand-impeding because the poor have a higher marginal propensity to consume (i.e. they tend to spend-instead of saving) a much higher proportion of their income.**
- If Covid-19 reduces competition or increases the inequality of incomes and opportunities, **it could impinge on trend growth in developing economies by hurting productivity and tightening political economy constraints.**

Way Forward

Given the **K-shaped recovery** and the new “**pandemic poor**”, the budgets for spending heads such as **subsidies, employment generation, rural development and other social sector programmes** are likely to remain large. The **vaccination costs** add to the bill. The government will also have to sharpen its focus on **capital spending** to contain damage to potential growth.

Source: IE

India's Trade Deficit with China at Five-year Low in 2020

Why in News

The **trade deficit**, between India and China, declined to a **five year-low of 45.8 billion USD** in 2020, the **lowest since 2015**.

Trade Deficit: A trade deficit is an amount by which the **cost of a country's imports exceeds its exports**.

Key Points

- **Bilateral Trade in 2020:** Two-way trade in 2020 reached **87.6 billion USD**, down by **5.6%** from 2019, according to new figures from **China's General Administration of Customs (GAC)**.
 - **India's imports from China** accounted for **66.7 billion USD**, declining by 10.8% year-on-year and the lowest figure since 2016.
 - **India's exports to China**, however, **rose to the highest figure on record**, crossing the 20 billion USD mark and growing 16% in 2020.
- **Analysis:**
 - India's **overall imports declined**, due to slump in domestic demand in 2020.
 - There is, yet, no evidence to suggest India has **replaced its import dependence on China** by either sourcing those goods elsewhere or **manufacturing them at home**.
- **India's Biggest Import from China (2019 data):**
 - Electrical machinery and equipment, organic chemicals fertilisers etc.
- **India's Top Exports to China (2019 data):**
 - Iron ore, organic chemicals, cotton and unfinished diamonds.
 - Further, the year 2020 saw a surge in demand for **iron ore in China** with a slew of **new infrastructure projects** aimed at **reviving growth** after the **Covid-19** slump.

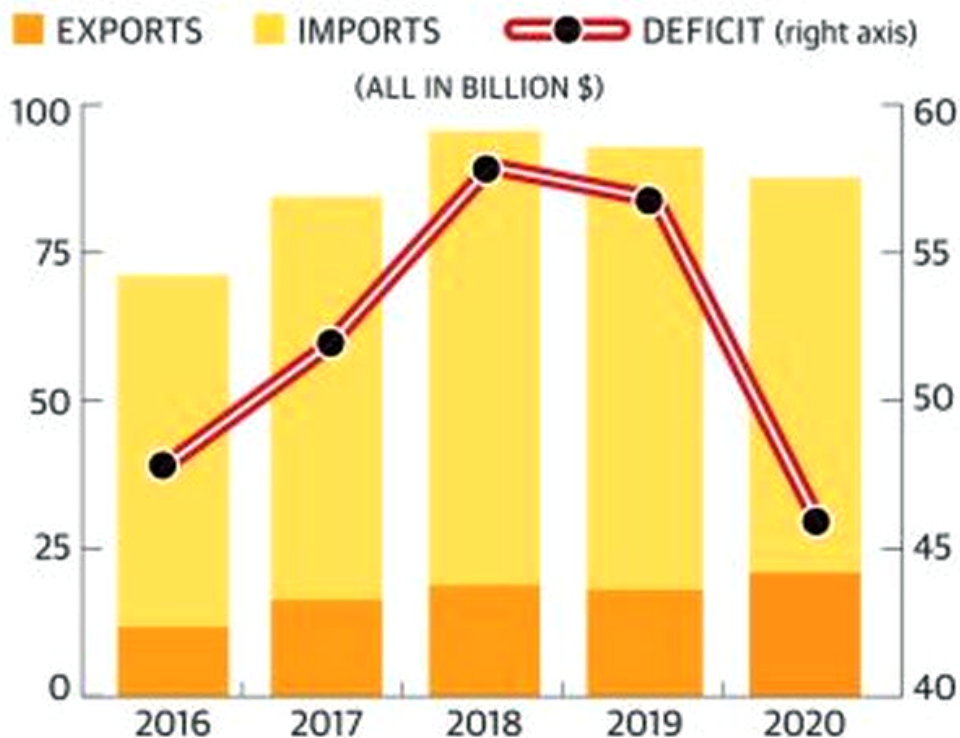
- **Trade Deficit with China:**

- The **balance of trade between India and China** is hugely **tilted in the favour of the latter**. India's trade deficit with China was 45.8 billion USD in 2020 and 56.77 billion USD in 2019.
- The huge trade deficit with China could be **attributed to two factors: narrow basket of commodities**, mostly primary, that **India exports to China** and **market access impediments for most of Indian agricultural products** and the sectors where India is competitive in, such as pharmaceuticals, IT/IteS, etc.
- Over time, India's raw material-based commodities have been overshadowed by Chinese exports of machinery, power-related equipment, telecom, organic chemicals and fertilisers.

- **Measures Taken to Reduce Import Dependence on China:**

- The **ban on more than 100 Chinese apps**, amidst **border tensions** between the two countries in eastern Ladakh.
- It has increased scrutiny of **Chinese investments in many sectors**, and is weighing a decision to keep Chinese companies out of **5G trials**.
- The government recently put **import restrictions on tyres**, while also making its **prior approval mandatory for foreign investments from countries that share land border** with India to curb "opportunistic takeovers" of domestic firms - a move which will **restrict FDI from China**.
- The Ministry of Commerce and Industry has **also identified 12 sectors** - food processing, organic farming, iron, aluminium and copper, agro chemicals, electronics, industrial machinery, furniture, leather and shoes, auto parts, textiles, and coveralls, masks, sanitisers and ventilators - to make India a global supplier and cut import bill.
- To **cut import dependency on China for APIs** (Active Pharmaceutical Ingredients), the government in March **approved a package** comprising four schemes with a total outlay of Rs. 13,760 crore to boost domestic production of bulk drugs and medical devices in the country along with their exports.

Trade deficit with China narrows



Source:TH

Government's Disinvestment Plans

Why in News

Recently, the Ministry of Finance has extended the bidding deadlines for the strategic **disinvestment** of **Pawan Hans** by a month, citing logistical challenges faced by interested bidders due to the **Covid-19 pandemic**.

Pawan Hans Limited is a **helicopter service company** based in New Delhi. It is a **Mini Ratna-I** category Public Sector Undertaking.

Key Points

- **Background:**
 - **Government's Disinvestment Target for 2020-2021:** Government **plans to raise Rs. 2.1 lakh crore** through disinvestment in 2020-21, with just about **Rs. 14,000 crore raised** so far through minority stake sales.
 - **New Public Sector Policy:** As part of the 'Aatmanirbhar Bharat Abhiyan' package, the government in May 2020 had announced that there will be a maximum of four public sector companies in the strategic sectors, and state-owned firms in other segments will eventually be privatised.
 - Under the policy, **a list of strategic sectors will be notified** where there will be **at least one and a maximum of four public sector enterprises**, apart from private sector companies.
 - **In other sectors, central public sector enterprises (CPSEs) will be privatised**, depending on the feasibility.
- **Current Situation:**
 - The **Bidding deadline** for the disinvestment of **Pawan Hans** has been **extended by a month**.
 - Strategic sales of public sector firms like Air India and **Bharat Petroleum Corporation Limited (BPCL)** are unlikely to conclude this year.
 - Further amendments are needed to the LIC Act of 1986 to list the Life Insurance Corporation of India on the markets.
- **Need for Disinvestment Proceeds:**
 - There is a pressure on the government to raise resources to **support the economic recovery** and meet expectations of higher outlays for healthcare.
 - The increase in public **spending in the upcoming Budget** will have to be financed to a large extent by garnering disinvestment proceeds and monetising assets.
 - To **eliminate the need for the government's involvement in non-strategic areas**.

Disinvestment

- Disinvestment means **sale or liquidation of assets by the government**, usually Central and state public sector enterprises, projects, or other fixed assets.
- **The government undertakes disinvestment to reduce the fiscal burden** on the exchequer, or **to raise money** for meeting specific needs, such as **to bridge the revenue shortfall from other regular sources**.
- **Strategic disinvestment** is the **transfer of the ownership and control of a public sector entity to some other entity** (mostly to a private sector entity).
Unlike the simple disinvestment, strategic sale implies a kind of privatization.
- The **disinvestment commission defines strategic sale as the sale of a substantial portion of the Government shareholding of a central public sector enterprises (CPSE) of upto 50%**, or such higher percentage as the competent authority may determine, along with transfer of management control.

- The **Department of Investment and Public Asset Management (DIPAM)** under the Ministry of Finance is the nodal department for the strategic stake sale in the Public Sector Undertakings (PSUs).
- Strategic disinvestment in India has been guided by the basic economic principle that the **government should not be in the business to engage itself in manufacturing/producing goods and services in sectors where competitive markets have come of age.**

The economic potential of such entities may be better discovered in the hands of the strategic investors due to various factors, **e.g. infusion of capital, technology up-gradation and efficient management practices etc.**

Source:TH

5G Technology

Why in News

Recently, the **Department of Telecommunications (DoT)** has sought inputs from telecom companies and other industry experts on the sale and use of **radio frequency spectrum** over the next 10 years, including the 5G (Fifth Generation) bands.

Key Points

- **Features of 5G Technology:**

- **Millimeter wave spectrum:** The 5G networks will operate in the **millimeter wave spectrum** (30-300 GHz) which have the advantage of sending large amounts of data at very high speeds because the frequency is so high, it experiences little interference from surrounding signals.

- **Upgraded LTE:** 5G is the latest upgrade in the **long-term evolution** (LTE) mobile broadband networks.

- **Internet speed:** In the high-band spectrum of 5G, internet speeds have been tested to be as high as **20 Gbps** (gigabits per second) as compared to the maximum internet data speed in 4G recorded at 1 Gbps.

5G network speeds should have a **peak data rate of 20 Gb/s** for the downlink and **10 Gb/s** for the uplink.

- **Bands in 5G:** 5G mainly work in 3 bands, **namely low, mid and high frequency spectrum** — all of which have their own uses as well as limitations.

- **Low band spectrum:** It has shown great promise in terms of coverage and speed of internet and data exchange however the maximum speed is **limited to 100 Mbps** (Megabits per second).

- **Mid-band spectrum:** It offers higher speeds compared to the low band, but has limitations in terms of coverage area and penetration of signals.

- **High-band spectrum:** It has the highest speed of all the three bands, but has extremely limited coverage and signal penetration strength.

- **Hurdles in Rolling Out 5G Technology:**

- **Enabling critical infrastructures:** 5G will require a **fundamental change to the core architecture** of the communication system. The major flaw of data transfer using 5G is that it can't carry data over longer distances. Hence, even 5G technology needs to be augmented to enable infrastructure.

- **Financial liability on consumers:** For transition from 4G to 5G technology, one has to upgrade to the latest cellular technology, thereby creating financial liability on consumers.

- **Capital Inadequacy:** Lack of flow of cash and adequate capital with the suitable telecom companies (like Bharti Airtel and Vodafone Idea) is delaying the 5G spectrum allocation.

- **Utility of 5G Applications:** Combined with **IoT**, cloud, **big data**, **AI**, and **edge computing**, 5G could be a critical enabler of the **fourth industrial revolution**.

For India: 5G networks could improve the accessibility of services such as **mobile banking and healthcare**, and enable exponential growth in opportunities for unemployed or underemployed people to engage in fulfilling and productive work. For this Government has rolled out enabling policies.

- **5G Enabling Policy:**

India's National Digital Communications Policy 2018 highlights the importance of 5G when it states that the convergence of a cluster of revolutionary technologies including 5G, the cloud, Internet of Things (IoT) and data analytics, along with a growing **start-up** community, promise **to accelerate and deepen its digital engagement**, opening up a new horizon of opportunities.

It aims to reach 100% teledensity, high-speed internet highways and delivery of citizen-centric services electronically.

- **Global Progress on 5G:**

Global telecom companies have already started building 5G networks and rolling it out to their customers in many countries:

- 5G had been deployed in 50 cities in the United States.
- South Korea has rolled out 5G to 85 cities.
- Japan and China have too started 5G mobile service on a trial basis.

Source:IE

Rapid Blood Test to Predict Covid-19 Disease Severity

Why in News

Scientists at **Washington University School of Medicine in St Louis (WUSTL)** have published a paper showing that **a relatively simple and rapid blood test can predict which Covid-19 patients are at highest risk of severe complications or death.**

Key Points

- **About the Blood Test:**

- It **measures levels of mitochondrial DNA**, a unique type of DNA molecule that normally resides inside the energy factories of cells.
- Mitochondrial DNA spilling out of cells and into the bloodstream is **a sign that a particular type of violent cell death** is taking place in the body.

- **Study Conducted:**

- The team **evaluated 97 patients with Covid-19**, measuring their mitochondrial DNA levels on the first day of their hospital stay.
- They found that **mitochondrial DNA levels were much higher in patients who eventually were admitted to the ICU**, incubated or died.

This association was **independent of a patient's age, sex and underlying health conditions.**

- **Significance:**
 - The test **could serve as a way to predict disease severity** as well as a tool to **better design clinical trials**, identifying patients who might, for example, benefit from specific investigational treatments.
 - The test **could serve as a way to monitor the effectiveness of new therapies**. Presumably, effective treatments would lower mitochondrial DNA levels.
 - Further, the test **predicted outcomes as well as or better than existing markers of inflammation** currently measured in Covid patients.
 - Most other markers of inflammation measured in patients with Covid-19, including those still under investigation, are **general markers of systemic inflammation, rather than inflammation specific to cell death**.
 - **Inflammation is the body's innate response to injury or infection** (including trauma, surgery, burns, and cancer).

Certain proteins are released into the bloodstream during inflammation; if their concentrations increase or decrease by at least 25%, they can be used as systemic inflammatory markers.

Mitochondrial DNA

- It is the **small circular chromosome found inside mitochondria**.
The mitochondria are **organelles found in cells that are the sites of energy production**. They **produce cellular energy** in the form of **adenosine triphosphate (ATP)**, hence they are called '**power houses**' of the cell. The mitochondria **divide by fission**.
- It is **different in a way from the DNA (Deoxyribonucleic Acid) that's in the nucleus**.
 - Mitochondrial DNA is **small and circular**. It has **only 16,500 or so base pairs** in it. It encodes different proteins that are specific for the mitochondrial.
 - The **nuclear genome is linear** and is made of **3.3 billion DNA base pairs**.
 - The mitochondrial genome is not enveloped, and it is **not packaged** into chromatin.
 - Mitochondrial DNA, unlike nuclear DNA, is inherited from the mother, while nuclear DNA is inherited from both parents.
- If there's a **defect in some of those mitochondrial DNA bases**, that is to say a **mutation**, one will have a **mitochondrial disease**, which will involve the inability to produce sufficient energy in things like the muscle and the brain, and the kidney.

Source: IE

Western Disturbance

Why in News

According to the **India Meteorological Department (IMD)**, a **western disturbance is likely to affect the Himalayan region** soon.

The disturbances will result in fairly widespread **light to moderate snowfall and rains** in the **plains of Jammu**.

Key Points

- Western Disturbance (WD), labelled as **an extra-tropical storm originating in the Mediterranean**, is **an area of low pressure** that brings sudden showers, snow and fog in northwest India.
- The **meaning of WD lies in its name**.
 - The **disturbance travels from the “western” to the eastern direction**. These travel eastwards on high-altitude **westerly jet streams** - massive ribbons of fast winds traversing the earth from west to east.
 - **Disturbance** means **an area of “disturbed” or reduced air pressure**. Equilibrium exists in nature due to which the air in a region tries to normalise its pressure.
- In the term **“extra-tropical storm”**, **storm refers to low pressure**. **“Extra-tropical”** means **outside the tropics**. As the **WD originates outside the tropical region**, the word “extra-tropical” has been associated with them.
- A **WD is associated with rainfall**, snowfall and fog in **northern India**. It arrives with rain and snow in Pakistan and northern India. The **moisture which WDs carry with them comes from the Mediterranean Sea and/or from the Atlantic Ocean**.
- **WD brings winter and pre-monsoon rain** and is important for the development of the **Rabi crop** in the Northern subcontinent.
- The WDs are not always the harbingers of good weather. Sometimes **WDs can cause extreme weather events** like floods, **flash floods**, **landslides**, dust storms, hail storms and **cold waves** killing people, destroying infrastructure and impacting livelihoods.

Expert opinion on western disturbances is divided regarding the **2013 floods in Uttarakhand** in which over 5000 people were killed, after three days of incessant rainfall.

Semeru Volcano of Indonesia

Why in News

Recently, **Semeru volcano** erupted in **Indonesia's East Java province**. Other volcanoes, such as the **Merapi volcano (Java)** and **Sinabung volcano (Sumatra)**, also erupted recently.

Key Points

- **Semeru Volcano:**

- Semeru - also known as "The Great Mountain" - is the highest volcano in Java and one of the most active.
- It previously erupted in December, 2019.
- Indonesia, with the maximum number of active volcanoes in the world, is **prone to seismic upheaval** due to its location on the **Pacific's Ring of Fire**.
- Semeru volcano is also the part of the **Island arcs** formed by the subduction of the **Indo-Australian plate** below **Sunda Plate** (part of Eurasian Plate). The trench formed here is called Sunda trench whose major section is the Java Trench.

- **Pacific Ring of Fire:**

- **The Ring of Fire**, also referred to as the **Circum-Pacific Belt**, is a path along the Pacific Ocean characterized by **active volcanoes and frequent earthquakes**.
- It traces boundaries between several tectonic plates—including the Pacific, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates.



Island Arcs:

- They are long, curved chains of **oceanic islands** associated with **intense volcanic and seismic activity and orogenic** (mountain-building) processes.
 - An island arc typically has a **land mass or a partially enclosed, unusually shallow sea** on its concave side.
 - Along the convex side there almost invariably exists a long, **narrow deep-sea trench**.
 - The greatest ocean depths are found in these depressions of the seafloor, as in the case of the **Mariana (deepest trench in the world) and Tonga trenches**.
- Prime examples of this form of geologic feature include the **Aleutian-Alaska Arc** and the **Kuril-Kamchatka Arc**.

Source: IE
