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EU Digital Covid Certificate

- Covishield is not among the vaccines which have been approved by the European Medicines Agency (EMA) for its "vaccine passport" programme that allows free movement of people in and out of Europe.
- Four vaccines that are approved by EMA for this purpose - Vaxzevria (Oxford-AstraZeneca), Comirnaty (Pfizer-BioNTech), Spikevax (Moderna) and Janssen (Johnson & Johnson).
- The EU Digital Covid Certificate or the "**green pass**" has been created to ensure that restrictions currently in place due to the pandemic can be lifted in a coordinated manner.
- This document, which is valid across all EU countries, is a digital proof that a person has either been,
    1. Vaccinated against Covid-19, or
    2. Received a negative test result, or
    3. Recovered from the viral infection.
- This new passport system is coming into effect across EU from July 1, 2021. National authorities are in charge of the programme.
- The document can be issued by test centres or health authorities, or via an eHealth portal.
- The certificate has a digital signature which is verified when the QR code is scanned and it is available in both digital and paper formats.
- The "green pass" is **not compulsory**. However, those who don't possess the certificate will be subject to the usual travel restrictions and quarantine rules which are in effect in every country.

Heat Dome

- The temperatures being reported from the Pacific Northwest and some parts of Canada are part of a "historic" heat wave that lasted over a week, a result of a phenomenon referred to as a "heat dome".
- Temperatures of the western Pacific Ocean have increased in the past few decades and are relatively more than the temperature in the eastern Pacific.
- This strong change in ocean temperature from the west to the east is the reason for the heat dome, which is when the atmosphere traps heat at the surface, which encourages the formation of a heat wave.

- To compare, the reason that the planet Venus is the hottest in the Solar System is because its thick, dense cloud cover traps the heat at the surface, leading to temperatures as high as 471 degree Celsius.
- A heat wave is a period of unusually hot weather that lasts for more than two days. It can occur with or without high humidity and have the potential to cover a large area, exposing many people to hazardous heat.
- To know about the US Heat Wave, click here.

Filoviruses

- In 2019, the Union Health Ministry began an inquiry into an Indian study that looked at filoviruses.
- It said that this study conducted by the National Centre for Biological Sciences (NCBS) and Tata Institute of Fundamental Research (TIFR) didn't get the appropriate permissions from the ICMR.
- **Filovirus** is any virus belonging to the family Filoviridae. They have enveloped virions appearing as variably elongated filaments.
- Virions are pleomorphic (varying in shape) and contain a helical nucleocapsid, which has a protein shell and contains the viral nucleic acids.
- The filovirus genome is made up of a single strand of negative-sense Ribonucleic Acid (RNA), and an endogenous RNA polymerase.
- Filoviridae consists of two genera, Marburgvirus and Ebolavirus.
    1. The first strain of Marburgvirus was discovered in 1967, when it was transported with imported monkeys to Marburg, Germany, and caused a fatal outbreak.
    2. The first strain of Ebolavirus was discovered in 1976, taking its name from the Ebola River in the northern Congo basin of Central Africa, where it first appeared.
- Filoviruses are confined primarily to regions of central, eastern, and western Africa.
- They are among the most dangerous human pathogens known, causing highly fatal hemorrhagic fevers; some strains of Ebolavirus cause death in 50 to 90% of victims. The filoviruses may cause disease in primates.
- Marburg and Ebola strains have been found in different species of fruit bats.

Last Ice Area

- A new study has found that the "Last Ice Area," may be more vulnerable to climate change than suspected.
- The Last Ice Area, an Arctic region known for its thick ice cover, spans more than 2,000 kms, reaching from Greenland's northern coast to the western part of the Canadian Arctic Archipelago.

- It earned its dramatic name because though its ice grows and shrinks seasonally, much of the sea ice was thought to be thick enough to persist through summer's warmth.
- But during the summer of 2020, the Wandel Sea in the eastern part of the Last Ice Area lost 50% of its overlying ice, bringing coverage there to its lowest since record-keeping began.
- **New study** - The study looked at the Wandel Sea north of Greenland, which is inside what's known as the "last ice area" of the Arctic Ocean.
- Researchers found that weather conditions were driving the decline, but climate change made that possible by gradually thinning the area's long-standing ice year after year.
- This hints that global warming may threaten the region more than prior climate models suggested.
- If the area is changing faster than expected, the Last Ice Area may not be the refuge for ice-dependent species in a future ice-free summer Arctic.
- **Anamoly 1 -** In recent decades, ocean currents have bolstered ice cover in the Last Ice Area with chunks of floating sea ice.
- But, northward winds transported ice away from Greenland and created stretches of open water that were warmed by the sun.
- The heated water then circulated under sea ice to drive even more melting.
- Scientists first suspected something might be amiss in the Last Ice Area in 2018, when a stretch of ice-ringed open water, known as a polynya.
- **Anamoly 2 -** In 2020, another sea ice anomaly in the Wandel Sea was gathered from an Arctic research expedition called The Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAiC).
- The research vessel was taking "a strange-looking route" through areas that normally were covered in thick ice.
- Satellite observations and climate models revealed that in 2020, unusual northward-moving winds broke up sea ice and pushed it away from the Wandel Sea.
- Approximately 20% of the 2020 ice loss could be directly attributed to climate change, while 80% was linked to the wind and ocean-current anomalies, the researchers wrote.

Movements of Earth

- As Earth zooms around the sun, it also turns on its own axis about once every 24 hours (precisely, every 23 hours, 56 minutes and 4 seconds).
- Earth measures 40,070 kilometers in circumference, so when you divide distance by time, that means the planet is spinning 1,670 kmph.
- Meanwhile, Earth orbits the sun at about 110,000 km/h. It is determined by taking the distance Earth travels around the sun and dividing it by the length

of time Earth takes to complete one orbit (about 365 days).
- Earth is about 149.6 million km away from the sun, and it is assumed to travel in a generally circular path (it's actually more elliptical).
- The solar system is also moving; it's located within the Milky Way, which orbits around the galaxy's center. The solar system orbits the Milky Way's galactic center at about 720,000 km/h.
- Then there's the entire Milky Way, which is pulled in different directions by other massive structures, such as other galaxies and galaxy clusters.
- For humans standing on the surface of our planet, they don't feel Earth hurtling around the sun because they're also hurtling around the sun at the same speed. There's no relative motion.

Global Cybersecurity Index

- India has ranked as the tenth best country in Global Cybersecurity Index (GCI) 2020 by the International Telecommunication Union (ITU).
- The US topped the chart, followed by the UK and Saudi Arabia tied on the second position, while Estonia was ranked third in the index.
- **Calculation** - GCI assessment is done on the basis of performance on five parameters of cybersecurity.
- The parameters include legal measures, technical measures, organisational measures, capacity development, and cooperation.
- The performance is then aggregated into an overall score.
- For each of the five aspects, all the countries' performance and commitment were assessed through a question-based online survey.
- Through in-depth consultations with a group of experts, the questions were then weighted and assessed, to arrive at the overall scores.
- **India's performance** - The GCI results for India show substantial overall improvement and strengthening under all parameters of the cybersecurity domain.
- India scored a total of 97.5 points from a possible maximum of 100 points, to make it to the tenth position worldwide in the GCI 2020.
- India has also secured the fourth position in the Asia Pacific region, underlining its commitment to cybersecurity.

International Telecommunication Union

- It is the United Nations specialized agency for information and communication technologies (ICTs).
- It was found in 1865 as the International Telegraph Union, making it among the oldest international organizations still in operation
- Headquartered in Geneva, Switzerland, it aims to facilitate international connectivity in communications networks.

- It allocates global radio spectrum and satellite orbits, develops the technical standards that ensure networks and technologies interconnect, and strives to improve access to ICTs to underserved communities.
- India has remained a regular member since 1952. India got elected as a member of ITU Council for another 4-year term (2019-2022).

Source: PIB, The Hindu, The Indian Express, Live Science