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Integrated Theatre Command

- An integrated theatre command envisages a unified command of the three Services, under a single commander, for geographical theatres (areas) that are of strategic and security concern.
- The commander of such a force will be able to bear all resources at his disposal from the Army, the Indian Air Force, and the Navy with seamless efficacy.
- The integrated theatre commander will not be answerable to individual Services.
- Integration and jointness of the three forces will avoid duplication of resources.
- The resources available under each service will be available to other services too.
- The services will get to know one another better, strengthening cohesion in the defence establishment.
- The Shekatkar committee has recommended the creation of 3 integrated theatre commands at

1. Northern for the China border,
2. Western for the Pakistan border,
3. Southern for the maritime role.

- As part of defence reforms after the appointment of the Chief of Defence Staff (CDS), the government is working on the formation of integrated theatre commands.

INS Kavaratti

- “INS Kavaratti” an indigenously built Anti-Submarine Warfare (ASW) stealth corvettes under Project 28 (Kamorta class) is scheduled to be commissioned into the Indian Navy.
- Kavaratti is indigenously designed by the Indian Navy's in-house organisation, Directorate of Naval Design(DND), and built by Garden Reach Shipbuilders & Engineers (GRSE), Kolkata
- Kavaratti has a state-of-the-art weapons and sensor suite capable of

detecting and prosecuting submarines.
- In addition to its anti-submarine warfare capability, the ship also has a credible self defence capability and good endurance for long-range deployments.

Geo-Tagging component of PMKSY

- Geo-tagging is the process of adding geographical identification data to various media such as websites, SMS messages, QR Codes.
- This data usually consists of latitude and longitude coordinates.
- It can also include altitude, bearing, distance, accuracy data, and place names, and perhaps a time stamp.
- A GIS is a framework for gathering, managing, and analyzing geography related data.
- Recently, Ministry of Jal Shakti launched a mobile application for geo-tagging of the components of projects under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).
- The mobile application has been developed with the help of Bhaskaracharya National Institute of Space Applications & Geo-informatics (BISAG-N).
- It aims to track the pace of work and actual status of the projects.
- The mobile application can be used to capture the image of the project component along with other details such as location, type of canal/ structure, completion status, etc.
- The captured information can be submitted by the user for geo-tagging on the geographic information system (GIS) portal developed for this purpose.
- The mobile application can be operated in both online & offline mode depending on the network availability in the region.

BISAG-N

- BISAG-N is an autonomous scientific society registered under the Societies Registration Act, 1860.
- It comes under the Ministry of Electronics and Information Technology.

COVIRAP Testing

- Recently, Indian Council of Medical Research (ICMR) has approved a new low-cost Covid-19 diagnostic method named COVIRAP.
- It is developed by the Indian Institute of Technology (IIT), Kharagpur.
- COVIRAP has an automated pre-programmable temperature control unit,

a special detection unit on genomic analysis, and a customised smartphone app for results.
- The machine has an isothermal nucleic acid amplification method, which did away with the need for a thermocycler.
- Thermocyclers are instruments used to amplify DNA (deoxyribonucleic acid) and RNA (ribonucleic acid) samples by the polymerase chain reaction.
- Once the sample is processed in the machine after being mixed with solutions developed by the IIT team, treated paper strips (similar to the pregnancy strips) are dipped into it, and the emergence of coloured lines will depict the presence of the virus.
- It is better than the FELUDA test because the FELUDA employs a gene editing technology called CRISPR-cas9, which requires a lab testing environment.
- It is reusable technology the same unit can be used for a large number of tests on replacement of the paper cartridge after each test.
- The COVIRAP testing machine can also perform tests other than Covid-19.
- It can be used in influenza, malaria, dengue, Japanese encephalitis, TB etc, which are under the category of isothermal nucleic acid-based tests.

Isothermal Amplification

- Isothermal amplification of nucleic acids is a process that rapidly and efficiently accumulates nucleic acid sequences at constant temperature.
- The Isothermal Amplification Techniques have been developed as alternatives to Polymerase Chain Reaction (PCR).

State of Global Air 2020 (SoGA 2020)

- Recently, a global study, State of Global Air 2020 (SoGA 2020) has been released by the Health Effects Institute (HEI).
- It highlights that air pollution is the largest risk factor for death among all health risks and it is the first-ever comprehensive analysis of air pollution's global impact on new-borns.
- HEI is an independent, non-profit research institute funded jointly by the USA's Environmental Protection Agency and others.
- Highlights of the report are as follows

1. India, Bangladesh, Pakistan and Nepal are among the top ten countries with the highest PM2.5 (particulate matter) exposures in 2019 and all of these countries experienced increases in outdoor PM2.5 levels between 2010 and 2019.

2. India is also among the top ten countries with highest ozone (O3) exposure in 2019.
3. Also, among the 20 most populous countries, India recorded the highest increase (17%) in O3 concentrations in the past ten years.
4. Long-term exposure to outdoor and household (indoor) air pollution contributed to over 1.67 million annual deaths from stroke, heart attack, diabetes, lung cancer, chronic lung diseases, and neonatal diseases, in India in 2019.
5. Although the link between air pollution and Covid-19 is not completely established, there is clear evidence linking air pollution and increased heart and lung disease.
6. Average pollution levels in India are declining over the past three years but these have been marginal, particularly in the Indo-Gangetic plains which see extremely high PM pollution especially during winter.
7. After a decline in pollution due to the nationwide lockdowns after March, pollution levels are again rising and air quality is dipping to the 'very poor' category in several cities.

The Cat Geoglyph

- Recently, a giant cat geoglyph was discovered on a hill at the famous Nazca Lines site in Peru.
- It dates from 500 BC – 200 AD (Paracas age). The cat geoglyph is believed to be older than the ones previously found at Nazca.
- The Paracas culture was an Andean society existing between approximately 800 BCE and 100 BCE, with an extensive knowledge of irrigation and water management.
- It was in present day Peru in the Paracas Desert region.
- Representations of felines of this type are frequent in the iconography of ceramics and textiles of the Paracas society.

Nazca Lines

- Nazca Lines are a group of geoglyphs known for the depictions of larger-than-life animals, plants and imaginary beings.
- Geoglyphs are the large designs made on the ground by creators using elements of the landscape such as stones, gravel, dirt or lumber.
- These are believed to be the greatest known archaeological enigma, owing to their size, continuity, nature and quality.
- The site is around 450 km away from capital Lima.
- Drawn more than 2 millennia ago on the surface of southern Peru's arid

Pampa Colorada, the geoglyphs feature different subjects, but mainly plants and animals.

- The figures include pelicans (the largest ones sized around 935 feet long), Andean Condors (443 feet), monkeys (360 feet), etc.
- Variety of geometric shapes such as triangles, trapezoids and spirals, and some have been associated with astronomical functions.
- The Lines were first discovered in 1927, and were declared a World Heritage Site by UNESCO in 1994.

Source: PIB, the Hindu, AIR News, Indian Express

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