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MINISTRY OF SCIENCE AND TECHNOLOGY

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THE HINDU Page 1

REMOTE ELECTRONIC VOTING MACHINE

(Syllabus: GS Paper 2 - Polity & Governance)

Remote EVM ready to help migrants vote outside States: EC

The machines can handle multiple constituencies from a single remote polling booth; panel to demonstrate prototype's functioning on Jan. 16

The Hindu Bureau
NEW DELHI

The Election Commission (EC) on Thursday announced the development of a prototype of a multi-constituency remote electronic voting machine (RVM) to enable remote voting by migrant voters.

The machines can handle multiple constituencies from one remote booth.

The EC invited all recognised political parties – eight national and 57 State parties – to a demonstration of the prototype on January 16. The panel has already shared a concept note with them on the legal, operational, administrative and technological challenges. The commission urged the parties to submit their views by January 31.

Opposing the proposal, the Congress said the move could seriously "undermine trust in the electoral system".

CONTINUED ON » PAGE 12

What is an RVM?

The machine allows migrant voters living outside their home constituencies to vote from their current residence

- The remote voter must **register online/offline within a pre-notified time before the elections** with their home constituency Returning Officer
- After **successful verification** at their home constituency, the **voter will be approved** for the remote voting facility
- Booths will be set up near their current homes



EVMs being sealed after an election

- In an RVM, a single ballot unit **can cater to many constituencies at a single polling station by using dynamic ballot display** instead of the usual printed paper ballot sheet

Context: The Election Commission of India has developed a prototype for a Multi-Constituency **Remote Electronic Voting Machine** which would enable remote voting by migrant voters.

Remote Electronic Voting Machine (RVM)

- **About**: A technology which relies on the creation of a robust electoral roll and identification mechanisms (to stop duplicate voting), and **allow voters to vote remotely,** in a safe and controlled environment.
  - The RVMs are **"stand alone, non-networked systems,"** effectively providing the voter the same experience as currently used EVMs.
  - They will be set up in remote locations outside the state under s**imilar conditions as current polling booths.**
- **Developed by**: The RVM was developed by **ECI with the assistance of Bharat Electronics Limited (BEL) and the Electronics Corporation of India Limited (ECIL).**
  - It is based on the currently used **EVM system.**
- **Key Features:** The unique feature of RVMs is that a **single Remote Ballot Unit (RBU)** will be able to cater to multiple constituencies (as many as 72) by using a "dynamic ballot display board" instead of the usual printed paper ballot sheet on EVMs.
  - The **Ballot Unit Overlay Display (BUOD)** will show the requisite candidates based on the constituency number read on the voter's Constituency card.
  - A **barcode scanning system** will be used to read these cards.
- **Voting process:**
  - After verifying a voter's identity, their constituency card will be read with a **public display** showing the constituency details and candidates.
  - This will also be **displayed privately**, on the BUOD in the RVM's RBU.
  - The voter will then vote and each vote will be **stored constituency-wise** in the control unit of the voting machine.
  - The **Voter verifiable paper audit trail (VVPAT) system** is expected to work along the same lines with the new technology.

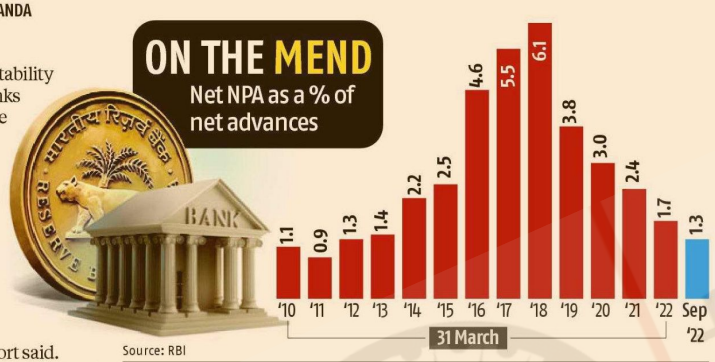
BUSINESS STANDARD

Page 1

Banks' net NPA ratio lowest in 10 yrs: RBI

FSR shows lenders can absorb shocks without capital infusion

MANOJIT SAHA & SUBRATA PANDA
Mumbai, 29 December



Source: RBI

The rise in profitability that aided banks to improve their provisions has resulted in net non-performing assets (NPAs) to net advances ratio falling to 1.3 per cent in September 2022 – the lowest in 10 years — the Reserve Bank of India's (RBI's) Financial Stability Report said.

Net NPAs were at similar levels back in March 2012.

As of end-September, net NPAs of private banks had fallen to 0.8 per cent, as against 1.8 per cent for public sector banks (PSBs).

"The quarterly slippage ratio, which had been rising since December 2021, cooled off during Q2, 2022-23, with considerable improvement recorded by PSBs," the report said. The provision coverage ratio, which has been increasing steadily since March 2021, has reached 71.5 per cent in September 2022.

However, the write-offs to gross NPA ratio increased in the first half of 2022-23 on an annualised basis, after declining for two consecutive years.

Gross NPAs also continued their downward journey to reach 5 per cent at the end of September — a seven-year low — and is expected to trend down further to 4.9 per cent by September 2023. This was achieved on the back of decrease in slippages, increase in write-offs, and pick up in credit growth.

"Reduction in slippages, or fresh accretions to NPAs, was a major contributor to the reduction in overall NPAs," the report said.

"The declining tendency in the GNPA ratio is likely to continue — under the baseline scenario of the stress testing framework, it is projected to fall further to 4.9 per cent in September 2023," it said.

Turn to Page 3

Extraterritorial regulatory reach weakens domestic stability: RBI

Amid a tussle over supervisory powers with European regulators for domestic central counterparties, the Reserve Bank of India (RBI) said such extraterritorial reach could undermine domestic financial stability. In its bi-annual Financial Stability Report, the central bank said that to prevent a possible logjam there had been 'positive dialogue' with relevant stakeholders, including the European Securities and Markets Authority (ESMA) and the European Commission.

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P4 'BANKS USE QUALITY LIQUID ASSETS TO FUND CREDIT GROWTH'

FINANCIAL STABILITY REPORT

(Syllabus: GS Paper 3 - Economy)

Context: The rise in profitability that aided banks to improve their provisions has resulted in net non performing assets (NPAs) to net advances ratio falling to 1.3 per cent in September 2022 - the lowest in 10 years - the **Reserve Bank of India´s (RBI´s) Financial Stability Report** Net NPAs were at similar levels back in March 2012.

- NPA refers to a classification for loans or advances that are in default or are in arrears on scheduled payments of principal or interest.
- In most cases, debt is classified as non-performing, when the loan payments have not been made for a minimum period of 90 days.

Key Findings of the report

- **Net NPAs** were at similar levels back in March 2012.
- As of end-September, net NPAs of private banks had fallen to 0.8 per cent, as against 1.8 per cent for public sector banks (PSBs).
  - **Net non-performing assets** are the amount that is realized after provision amount has been deducted from the gross non-performing assets.
- **Gross NPAs** also continued their downward journey to reach 5 per cent at the end of September - a seven-year low - and is expected to trend down further to 4.9 per cent by September 2023.
- The **write-offs to gross NPA ratio** increased in the first half of 2022-23 on an annualised basis, after declining for two consecutive years.
  - **Gross non-performing assets are** the sum of all the loans that have been defaulted by the individuals who have acquired loans from the financial institution.
- Under the baseline scenario, the aggregate **capital adequacy ratio (CAR)** of 46 major banks is projected to slip from 15.8 per cent in September 2022 to 14.9 per cent by September 2023.
  - **CAR is the ratio of a bank's capital in relation to its risk weighted assets** and current liabilities. It is also known as Capital-to-Risk Weighted Asset Ratio (CRAR).
  - It is **decided by central banks** to prevent commercial banks from taking excess leverage and becoming insolvent in the process.

Financial Stability Report

- The FSR which is **published biannually** reflects the collective assessment of the Sub-Committee of the Financial Stability and Development Council **(FSDC - headed by the Governor of RBI)** on risks to financial stability and the resilience of the financial system.
- The Report also discusses issues relating to **development and regulation of the financial sector.**

INDIAN EXPRESS

Page 1

Theatre commands only after defence strategy and higher body: Gen Naravane

To right-size force, may shut or scale down some legacy units: Gen Pande

PAVNEET SINGH CHADHA
NEW DELHI, DECEMBER 29

IN SIGNIFICANT remarks on future integration of the capabilities of the Indian armed forces, former Army chief General M M Naravane said Thursday that unless a national security strategy is in place, talk of theaterisation is "actually putting the cart before the horse".

Army chief General Manoj Pande said that as part of restructuring and "right-sizing" the force, some legacy units may be done away with or scaled down.

Speaking at the 4th General K V Krishna Rao Memorial Lecture in New Delhi, General Naravane said, "Theaterisation is not an end, it is only a means to an end and that end has to be specified first in the form of a national defence strategy and that defence strategy has in turn to flow out of a national security strategy. Britain had a national security strategy that they should be able to tackle two navies at one time, not unlike a two-front war theory. Unless there is a national security strategy in place, to just keep talking

CONTINUED ON PAGE 4

INTEGRATED THEATRE COMMANDS

(Syllabus: GS Paper 3 - Internal Security)

Context: In significant remarks on future integration of the capabilities of the Indian armed forces, former Army chief said that unless a national security strategy is in place, talk of **theatralisation** is "actually putting the cart before the horse".

Integrated Theatre Commands

- **About**: 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.
  - This is **different from the current model** followed by the military in India, wherein service-specific commands are there.
  - The Indian Army, Navy and the Air Force have their own commands all across India.
- **Objectives**: This system aims to **put the resources of the three Services at the disposal of the theatre commander**, keeping in mind the tasks assigned to him, and thereafter leaves him free to train his command to make it a cohesive fighting force capable of achieving its designated charter in the shortest possible time frame.
- **Key Features:** The commander of such a force will **bear all resources at his disposal,** from the Army, the Navy and the Indian Air Force, with harmonious efficacy.
  - The commander of an integrated theatre will **not be answerable to individual Services** and will have the freedom to equip, train and exercise his command to make it a cohesive fighting force capable of attaining assigned targets.
  - In the event of a war, each of the Service Chief of Staff will control the operations of his Service through individual commands, while they **operate jointly**.
  - The Theatre Commander would be s**olely responsible for integrated planning and coordinated application.**
- **Shekatkar Committee(2015):** The Shekatkar Committee had r**ecommended the formation of three integrated theatre commands** namely, western for the Pakistan border, northern for the China border and southern for the maritime role.
  - The **Kargil Review Committee (1999),** which was set up after the end of the Kargil War, also recommended the creation of joint theatre commands.
  - Ideally, considering India's geographic characteristics, the largest ITC configurations could be two theatres - Continental and Maritime.
- **Chief of Defence Staff (CDS):** In 2019, the government created the post of the Chief of Defence Staff (CDS) to act as the **principal point of contact between the tri-services and the executive leadership** of the country.

LIVEMINT Page 2

NATIONAL GEOSPATIAL POLICY, 2022

(Syllabus: GS Paper 3 - Economy & Infrastructure)

Government introduces national geospatial policy

New Delhi: The ministry of science and technology on Wednesday published the National Geospatial Policy, 2022. After liberalizing the use of geospatial data under the draft Geospatial Data policy in February last year, the central government has now outlined a 13-year guideline for the development of the geospatial data industry in the country, developing a national framework to use geospatial data for improving citizen services, and more. SHOUVIK DAS

Context: The Ministry of Science and Technology published the **National Geospatial Policy, 2022.**

- After liberalizing the use of geospatial data under the draft Geospatial Data policy in February last year, the central government has now outlined a **13-year guideline f**or the development of the geospatial data industry in the country, developing a national framework to use geospatial data for improving citizen services, and more.

Key Points

- The policy will seek to develop a **national geospatial data framework**, and enable "easy availability" of data to businesses and general public.
- By 2025 the government will seek to put in place **a legal framework** that "supports liberalization of the geospatial sector, and democratization of data for enhanced commercialization with Value Added Services."
- The government will also look to i**mprove availability and access of "better location data**" for companies, including private organizations, by 2025.
- by 2030 the government will look to establish an **Integrated Data and Information Framework,** under which a **Geospatial Knowledge Infrastructure (GKI)** will be developed. Alongside, high resolution topographical survey and mapping, as well as a high accuracy Digital Elevation Model for the entire country will be developed.
- By 2035, goals of usage of geospatial data include mapping of subsurface infrastructure in major cities and towns across India, and development of high resolution, accurate bathymetric geospatial data (resources and economy of inland waters, and sea surface topography of shallow and deep seas) to support **India's 'Blue Economy'.**
- To achieve these goals, the National Geospatial Policy, 2022 details the establishment and promotion of "g**eospatial data infrastructure"** through a "well-defined custodianship model and data supply chain".
- The policy also outlines the creation of a national-level apex body, **Geospatial Data Promotion and Development Committee (GDPDC),** which will offer details regarding the use of geospatial data in governance across specific ministries, and enable the development of private startups and companies to work on specific projects.
- It will also promote the use of a **National Digital Twin**, which refers to an ecosystem of high resolution data to promote connected digital twins among private businesses "with secure and interoperable data sharing."
- The policy also details the development of **14 National Fundamental Sectoral Geospatial Data Themes**, which will be used to address various sectors that support the development of commercial geospatial applications in various sectors including disaster management, mining, forestry and more.

Geospatial Ecosystem in India

- The **Indian geospatial economy** is currently valued at Rs 38,972 crore and employs approximately 4.7 lakh people.
- In 2021, the **geospatial marke**t was dominated by defence and intelligence (14.05 %), urban development (12.93 %) and utilities (11 %) segments, cumulatively accounting for 37.98% of the total geospatial market.

Geospatial Technology

- **About**: Geospatial technologies is a term used to describe the **range of modern tools contributing to the geographic mapping and analysis** of the Earth and human societies.
  - The term 'geospatial' refers to a collection of technologies that help to collect, analyse, store, manage, distribute, integrate, and present geographic information.
- **It consists of the following technologies**: Remote Sensing, GIS (Geographic Information System), GNSS (Global Navigation Satellite System), Survey and 3D modelling.

ECONOMIC TIMES

Page 2

India Unlikely to Join Ukraine Grain Corridor, says MEA

Press Trust of India

New Delhi: India is unlikely to join the Ukraine 'grain corridor', the External Affairs Ministry said on Thursday, adding bilateral mechanisms are in place for India to extend food grain assistance to several countries in the global south. "We have been extending assistance to countries from the south bilaterally. I don't have any clarity if we will join, probably not, our focus has been on bilateral south-south mechanisms," MEA Spokesperson Arindam Bagchi said when asked if India is considering joining the grain corridor.

"As of now, I don't have intimation that we are looking to join this initiative," he said. The Initiative on the Safe Transportation of Grain and Foodstuffs from Ukrainian ports, also called the Black Sea Grain Initiative, is an agreement between Russia and Ukraine made with Turkey and the United Nations (UN) during the 2022 Russian invasion of Ukraine.



Following the Russian invasion, there was a complete halt of grain shipments from Ukraine

BLACK SEA GRAIN INITIATIVE

(Syllabus: GS Paper 2 - International Relations)

Context: India is unlikely to join the **Ukraine 'grain corridor, also called the Black Sea Grain Initiative**, and bilateral mechanisms are in place for India to extend food grain assistance to several countries in the global south.

Black Sea Grain Initiative

- **About**: The Initiative on the S**afe Transportation of Grain and Foodstuffs from Ukrainian ports**, also called the Black Sea Grain Initiative, was an agreement between Russia and Ukraine with Turkey and the United Nations (UN) made during the 2022 Russian invasion of Ukraine.
- **Origin**: The deal, b**rokered by the United Nations and Turkey,** was signed in Istanbul in July 2022.
  - Initially it was stipulated for a period of 120 days with an option to extend or terminate after November.
- **Mirror agreement:** It was **not a direct agreement between Russia and Ukraine**.
  - Instead, **Ukraine signed an agreement with Turkey and the UN**, and **Russia signed a separate** "mirror" agreement with Turkey and the UN.
- **Objectives**: The deal was to provide for a **safe maritime humanitarian corridor** for Ukrainian exports (particularly for food grains) from three of its key ports: **Chornomorsk, Odessa and Yuzhny/Pivdennyi.**
- Ukraine is among the largest exporters of wheat, maize, rapeseed, sunflower seeds and sunflower oil, globally.
  - Its **access to the deep-sea ports in the Black Sea** enables it to directly approach Russia and Europe along with grain importers from West Asia and North Africa.
  - Russia's actions in the East European country had disturbed this route which earlier used to **ship 75% of its agricultural exports** - precisely what the initiative sought to address.
- **Achievements**: As per the **UN Office for Coordination of Humanitarian Affairs**, approximately 10.1 million tonnes of grains, which include corn, wheat, rapeseed, and sunflower oil among others, have been shipped since the initiative commenced.
  - About 44% of the shipments reached **high-income countries** (including Spain, Netherlands and Italy among others),
  - About 28% reached **low and lower-middle-income countries** (Egypt, Iran, Sudan and Kenya among others).
  - About 27% reached u**pper-middle income countries** (China and Bulgaria among others).

TIMES OF INDIA

Page 1

DOK-1 MAX

(Syllabus: GS Paper 2 - Polity & Governance)

Centre launches probe into alleged role of syrup in Uzbek deaths

Samples From Noida Plant Sent For Lab Tests

DurgeshNandan.Jha
@timesgroup.com

New Delhi: India has launched an inquiry into the alleged role of Dok-1 Max, a cold and flu syrup manufactured by Noida-based Marion Biotech, in the recent deaths of 18 children in Uzbekistan.

The Uzbek health ministry alleged that the kids died after drinking Dok-1 Max and it contains unacceptable amounts of ethylene glycol.

The Centre said it had received information about the incident on December 27 and an inspection of Marion Biotech's Noida facility was carried out by a joint team of UP drug control facility and Central Drug Standards Control Organisation. Samples of the syrup have been sent to the Regional Drugs Testing Laboratory, Chandigarh.

▶Cong-BJP war of words breaks out, P 24
▶ 'Syrup batch made in May '21, had '24 expiry', P 24
▶Strict action, P 24

Embassy in Tashkent seeks more details

The Indian embassy in Uzbekistan has sought more details about the 18 deaths, the Centre said Thursday. Tashkent, however, is yet to formally raise the issue with New Delhi. India is providing consular assistance to the Noida-based pharma company's local representatives as they are facing legal action. **P 24**

Context: India has launched an inquiry into the alleged role of Dok-1 Max, a cold and flu syrup manufactured by Noida-based Marion Biotech, in the recent **deaths of 18 children in Uzbekistan.**

- **Marion Biotech** is a licensed manufacturer and holds license for manufacturing of Dok1 Max syrup and Tablet for export purpose granted by Drugs Controller, Uttar Pradesh.

Dok-1 Max

- Dok-1 Max **syrup and tablets** are used as **anti-cold medication** in the country.
- The syrup contains **Ethylene Glycol,** which is a toxic substance found in industrial-grade glycerine and is not permitted for medicinal purposes.
- The chemical affects the **circulatory system and causes vomiting,** among other things.
- Consuming ethylene glycol can **lead to convulsions and renal failure.**

Regulations in India

- **Drugs and Cosmetics Act, 1940 and Rules 1945:** It is mandatory for the manufacturers to adhere to the **prescribed requirements for licensing** of manufacturing units & medicines including proof of safety & effectiveness, compliance with the Good Manufacturing Practices (GMP).
- **Central Drugs Standard Control Organisation(CDSCO)**: CDSCO **regulates export of drugs** in India, any manufacturer with the certification from CDSCO can export drugs outside India.
    - Supervises drug imports and approves licences to manufacture the above-mentioned products.
- **Drugs Controller General of India:** It sets standards for **manufacturing, sales, import, and distribution** of drugs in India.

Decoding the regulatory norms

Who can export drugs from India?
Any manufacturer with a certification from the Central Drugs Standard Control Organisation (CDSCO) – the apex regulatory body for cosmetics, pharmaceuticals and medical devices.

Do drugs manufactured in India for export need to be tested domestically?
At the time of issuing license, drugs inspectors assigned by the Indian regulator may lift samples in any phase of manufacturing for quality checks. It is, however, not mandatory; and rarely done

What safety norms need to be adhered to?
First point of testing is at a manufacturer's level, to ensure that the drug adheres to the safety norms prescribed by the Indian Pharmacopoeia, and the regulatory requirement of the country of export. However, generally speaking, destination countries expect nations of origin to strictly follow the norms prescibed by the pharmacopoeia under which the sale is governed.

What are the intn'l drug safety norms?
Drug regulatory norms are usually country-specific and are enforced at the level of individual countries. The US, Japanese, British, European and Chinese pharmacopeias act as reference points for uniform preparations for the most commonly used drugs — with tests to ensure their quality, potency and purity. The WHO's prequalification programme is another criterion wherein the UN body certifies sale of drugs/vaccines under the UN programmes.

Are destination nations responsible for safety?
Some countries do internal testing at the point of entry, but it is not mandatory and varies by the country.

For sale domestically

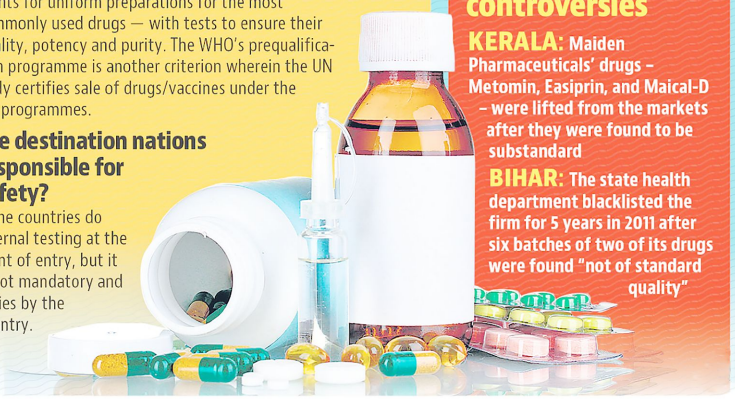
What are the checks in place to ensure the safety of drugs in India?
The CDSCO and state drugs regulators are responsible for ensuring quality of drugs that are manufactured, sold or distributed in Indian markets.



Maiden Pharma controversies

KERALA: Maiden Pharmaceuticals' drugs – Metomin, Easiprin, and Maical-D – were lifted from the markets after they were found to be substandard

BIHAR: The state health department blacklisted the firm for 5 years in 2011 after six batches of two of its drugs were found "not of standard quality"



PIB

Dec 30

IND-AUS ECTA

(Syllabus: GS Paper 3 - Economy)

PM expresses happiness as India-Australia Economic Cooperation and Trade Agreement (IndAus ECTA) comes into force

Context: The Prime Minister has expressed happiness as **India-Australia Economic Cooperation and Trade Agreement (IndAus ECTA)** comes into force.

- Recently, the Australian Parliament approved the India-Australia Economic Cooperation and Trade Agreement (Ind-Aus ECTA).

India-Australia Economic Cooperation and Trade Agreement (IndAus ECTA)

- **About**: **First Free Trade Agreement (FTA)** that India has signed with a major developed country in over a decade.
  - It provides for an institutional mechanism to encourage and improve trade between the two countries.
- **Coverage**: The **Agreement encompasses cooperation across the entire gamut of bilateral economic and commercial relations** between the two friendly countries, and covers areas like:
  - Trade in Goods, Rules of Origin
  - Trade in Services
  - Technical Barriers to Trade (TBT)
  - Sanitary and Phytosanitary (SPS) measures
  - Dispute Settlement, Movement of Natural Persons
  - Telecom, Customs Procedures
  - Pharmaceutical products, and Cooperation in other Areas
- **Key Features**: It c**overs almost all the tariff lines** dealt in by India and Australia respectively.
  - India will benefit from preferential market access provided by Australia on 100% of its tariff lines.
  - This **includes all the labour-intensive sectors** of export interest to India such as Gems and Jewellery, Textiles, leather, footwear, furniture etc.
  - On the other hand, India will be **offering preferential access to Australia** on over 70% of its tariff lines, including lines of export interest to Australia which are primarily raw materials and intermediaries such as coal, mineral ores and wines etc.
- **Post-study work visas**: Under the agreement, Indian graduates from S**TEM (Science, Technology, Engineering and Mathematics)** will be granted extended post-study work visas.
  - Australia will also set up a **programme to grant visas** to young Indians looking to pursue working holidays in Australia.
  - **Annual Visa quota** of 1800 is to be instituted for India Yoga teachers and Chefs.
  - It is also estimated that 10 lakh jobs will be created as a result of ECTA.



PIB

Dec 30

PARKASH PURAB

(Syllabus: GS Paper 1 - Art & Culture)

PM bows to Sri Guru Gobind Singh Ji on the occasion of Parkash Purab

Context: The Prime Minister has paid **tributes to Sri Guru Gobind Singh Ji** on the sacred occasion of Parkash Purab of Sri Guru Gobind Singh Ji.

- The festivities in the Sikh religion revolve around the **anniversaries of the 10 Sikh Gurus.**
- These Gurus were responsible for shaping the beliefs of the Sikhs.
- Their birthdays, **known as Gurpurab,** are occasions for celebration and prayer among the Sikhs.

Sri Guru Gobind Singh Ji

- **About**: The last of the **ten Sikh Gurus**, Guru Gobind Singh was born on 22nd December, 1666 in Patna, Bihar.
  - His birth a**nniversary is based on the Nanakshahi calendar** according to which it will fall on January 20 in 2021 while for the last year, it was celebrated on January 2.
  - He **became the Sikh guru at the age of nine**, following the demise of his father, Guru Tegh Bahadur, the ninth Sikh Guru.
  - He was assassinated in 1708.
- **Contributions**:
  - He is known for his significant contributions to the Sikh religion, including the **introduction of the turban to cover hair.**
    - He also founded the principles of Khalsa or the **Five 'K's.**
      - The Five K's are kesh (uncut hair), kanga (wooden comb), kara (iron or steel bracelet), kirpan (dagger) and kachera (short breeches).
    - These were the **five articles of faith** that a Khalsa must always adorn.
    - He also l**aid down many other rules** for the Khalsa warriors to follow like abstaining from tobacco, alcohol, halal meat, etc. The Khalsa warrior was also duty-bound to protect innocent people from persecution.
    - He named **Guru Granth Sahib,** the religious text of the Khalsas and the Sikhs, as the next Guru of the two communities.
  - He fought against the Mughals in the **battle of Muktsar** in 1705.
    - In the **Battle of Anandpu**r (1704), the Guru lost his mother and two minor sons who were executed. His eldest son also died in battle.
  - His literary contributions include the **Jaap Sahib, Benti Chaupai, Amrit Savaiye, etc.**
    - He also wrote the **Zafarnama** which was a letter to the Mughal Emperor Aurangzeb.

DTE

Dec 30

JAMES WEBB SPACE TELESCOPE

(Syllabus: GS Paper 3 - Sci & Tech)



2022 too short, too far: 5 times James Webb grabbed eyeballs

Telescope helped us understand how stars are born and unfolded Mars' and Neptune's secrets

NEXT NEWS >

By DTE Staff
Published: Thursday 29 December 2022

James Webb Space Telescope (JWST)

- **About**: It is an orbiting infrared observatory that will complement and extend the **discoveries of the Hubble Space Telescope**, with longer wavelength coverage and greatly improved sensitivity.
- **Origin**: **Launched in December 2021,** JWST is a joint venture between the US (Nasa), **European (Esa) and Canadian space agencies (CSA).**
    - Webb was formerly known as the "Next Generation Space Telescope" (NGST) and it was renamed in 2002 after a former NASA administrator, James Webb.
- **Key features**: It is a large infrared telescope with an approximately 6.5 meter primary mirror.

Context: The United States National Aeronautics and Space Administration (NASA) James Webb Space Telescope (JWST) was launched in 2021. Since then, it has captured several groundbreaking images, widening our knowledge base about the space.

Key observations of JWST

- **Galaxy cluster:** In July 2022, NASA released an image of a galaxy cluster taken by JWST as it appeared 4.6 billion years ago.
    - The image is the **"deepest and sharpest infrared image"** of some of the farthest and oldest galaxies that have been observed.
- **Infrared spectrum**: The space agency is closer to unfolding more Mars secrets with the help of JSWT.
    - The telescope captured its first images and **infrared spectrum of the red planet** on September 5, 2022.
    - The spectrum has water, carbon dioxide and carbon monoxide signatures in the planet's atmosphere.
- **Glimpse of Neptune**: The telescope has also provided a **long-awaited glimpse of Neptune** and revealed more information about its enigmatic storms.
    - The clarity of the planet's rings since 1989 stands out most in Webb's latest photograph.
- **Orion Nebula**: JWST released new images on September 12, 2022, **showing the interior of the Orion Nebula,** a star-forming region located 1,350 years away from the Earth.
    - The images show how stars are formed and are similar to how the solar system looked 4.5 billion years ago.
- **Evidence of carbon dioxide**: Scientists also found clear **evidence of carbon dioxide in a faraway world** for the first time with its help.
    - A Jupiter-like exoplanet where the gas was found orbits a star 700 light years away.

DTE

Dec 30

PLASTIC WASTE

(Syllabus: GS Paper 3 - Env & Eco)



No action plan by MoEF&CC to handle plastic waste, finds CAG

Coordination lacking with pollution control boards; Implementation of Plastic Waste Management Rules lacks teeth

NEXT NEWS >

By Zumbish
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Context: The Union Ministry of Environment, Forest & Climate Change (MoEF&CC) has mechanisms to assess the **generation of plastic waste**, but none for its collection and safe disposal, found a compliance audit by the **Comptroller and Auditor General (CAG)** of India on December 21, 2022.

Key Points

- **Plastic Waste Management (PWM) Rules, 2016**, could not be implemented effectively and efficiently due to a lack of an action plan by the MoEF&CC.
- The ministry is also **lacking in effective coordination** with pollution control boards.
- The MoEF&CC stated to have a**dopted a three-pronged strategy** for effective implementation of the rules, which include behavioural change; strengthening of the institutional system for the collection, segregation and recycling of plastic waste; and engagement with producers, importers and brand owners through Extended Producer Responsibility.
- The stakeholders - **MoEF&CC, Central Pollution Control Board (CPCB), State Pollution Control Boards (SPCBs)** - are not working in tandem to control generation, putting effective system for collection and safe disposal of plastic waste.
- The **Plastic Waste Management Rules** framed by MoEF&CC lack comprehensiveness to give thrust to effective implementation and monitoring thereof.
- There is **no uniform method** for assessment of plastic waste generation within a state.

Plastic Waste

- About: Plastic waste, or plastic pollution, is 'the **accumulation of plastic objects** (e.g.: plastic bottles and much more) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans.

Types of Plastic Waste

- **Microplastics** are small plastic pieces of less than five millimeters in size.
  - Microplastic includes **microbeads (solid plastic particles of less than one millimeter** in their largest dimension) that are used in cosmetics and personal care products, industrial scrubbers which are used for aggressive blast cleaning, microfibers used in textiles and virgin resin pellets used in plastic manufacturing processes.
  - **Apart from cosmetics and personal care products** most of the microplastics result from the breakdown of larger pieces of plastic that were not recycled and break up due to exposure to the sun or physical wear.
- **Single-use plastic** is a **disposable material** that can be used only once before it is either thrown away or recycled, like plastic bags, water bottles, soda bottles, straws, plastic plates, cups, most food packaging and coffee stirrers are sources of single use plastic.
  - India has announced its commitment to **eliminate single-use plastic by 2022** at Confederation of Indian Industry's Sustainability Summit in New Delhi.

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