

DAILY CURRENT AFFAIRS

By



SOURCES



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2. 'We are starting talks with India to find a framework to go for CEPA or FTA' - Indian Express
3. Ahead of FATF review, Centre takes measures to implement suggestions - The Hindu
4. 'Oligopolies' control over rare earths is key green transition snag' -The Hindu
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Important News Articles

GS II

1. Free ration scheme to be extended for five more years: PM - The Hindu/ Free ration for 5 more years, can't let people sleep hungry: Modi - Indian Express

Relevance : Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes

News:

- The Union government's scheme to provide **5 kg** of free food grains per month to **81 crore Indians** will be extended for another **five years**.
- The free ration scheme, slated to end in **December, 2023**.

Background of the Scheme

- The Pradhan Mantri Garib Kalyan Anna Yojana was introduced in **2020**.

Features of PMGKAY

- It was
 - initiated as a **pandemic relief measure**.
 - providing **5 kg** of free food grains per beneficiary per month
 - in addition to the **5 kg of subsidized food** grain they were entitled to under the National Food Security Act.
- In **December 2022**, as PMGKAY came to an end after multiple extensions
- The Union Cabinet decided to make NFSA rations free for one year. i.e. **December, 2023**.
- Now, It has been extended for **another five years** in addition to this deadline.
- Its **nodal Ministry** is the Ministry of Finance.
- The benefit of the free ration can be availed through **portability**.
- It can be availed by any migrant labour or beneficiary under the **One Nation One Ration Card (ONORC)**.
- It is covered by the nearly **5 lakh ration shops** across the country.

Prelims Takeaway

- One Nation One Ration Card
- Pradhan Mantri Garib Kalyan Anna Yojana

2. 'We are starting talks with India to find a framework to go for CEPA or FTA' - Indian Express

Relevance: India and its neighbourhood- relations.

News:

- **India and Chile** are working on building a new framework for a **Comprehensive Economic Partnership Agreement (CEPA)** or Free Trade Agreement (FTA).

Scope of CEPA or FTA with Chile

- The agreement **will cover**
 - Goods and services
 - Focus on areas such as energy
 - Commerce facilitation
 - Technology
 - Innovation,
 - Environment.
- A **bilateral trade agreement** between **India** and **Chile** was signed in **2006**.
- The intention of the agreement was progressing towards a **CEPA** or **FTA**.
- Both countries see opportunities for collaboration in areas like
 - lithium **mining**
 - **exploration** of mineral reserves
 - the **pharmaceutical** industry.

Other Developments related to Lithium Diplomacy

- The timeline for the **CEPA** or **FTA** will depend on the **framework** established for the agreement.

Prelims Takeaway

- National Lithium Strategy of Chile
- Comprehensive Economic Partnership Agreement

- The agreement is expected as **Cooperation in Energy Transition**, Specifically on Lithium:
- Lithium cooperation will be used in the production of **batteries**.
- India is **interested in** exploring and mining lithium, and discussions are ongoing.
- Cooperation also extends to other sectors like **agriculture** and the **wine industry**.

Exploration of Lithium Reserves

- Both countries have a working group exploring collaboration on **critical minerals**, including lithium.
- The working group includes **representatives** from both Chile and India.
- Potential collaborations offer **numerous possibilities** for mutual benefit.

Chile's National Lithium Strategy

- Chile's National Lithium Strategy aims at
- to **explore, extract, and produce** lithium
- The production must be in a **sustainable** and **environmentally friendly** manner.
- **Public-private** collaborations and contracts
- contracts with **investors** from around the world

India's Interest in Lithium and EVs

- India's growing demand for **lithium** due to its **electric vehicle (EV) industry**
- This makes the partnership with Chile **strategically important**.
- With China's **growth slowing down**, the India-Chile partnership gains prominence in the context of EVs.

Expansion of Trade Pact

- The trade pact expansion **will encompass**
 - digital services
 - Investment
 - other priority areas.
- The inclusion of sectors **like batteries and EVs** will depend on ongoing conversations.

3. Ahead of FATF review, Centre takes measures to implement suggestions - The Hindu

Relevance : Important International institutions, agencies and fora- their structure, mandate.

News:

- Ahead of India's **mutual evaluations by the FATF** the Union government has taken several measures to implement the intergovernmental body's recommendations.
- Those recommendations were made following the **2010 review**.

Prelims Takeaway

- Prevention of Money Laundering Act
- Financial Action Task Force

FATF's Evaluation and India's Assessment:

- The FATF conducts **reviews to assess** member countries' compliance with measures aimed at
 - curbing **money laundering**
 - **terror financing**.
- India is **scheduled for an on-site assessment** in November , 2023 to evaluate the effectiveness of these measures.

Scope of FATF Review

- India's Finance Ministry **designated** Chartered Accountants, Company Secretaries, and Cost and Management Accountants as
 - "persons carrying on a designated business or profession" under the **Prevention of Money Laundering Act (PMLA)**.
- These professionals are **now considered** reporting entities, with reporting obligations.
- The government **extended the scope** to include various activities related to business entities, such as acting as formation agents, directors, or secretaries of companies, among others.

Reporting Entity Responsibilities:

- Reporting entities **must maintain**
 - records of **transactions**
 - client **identities**

- beneficial **owners**
 - account **files**
 - **business correspondence** for five years.
 - **Section 12AA** of the PMLA outlines additional responsibilities, including
 - client **verification**
 - assessing **financial positions**
 - scrutinizing the purpose and nature of **transactions**.
 - Non-compliance may lead to monetary penalties ranging from **₹10,000 to ₹1 lakh** for each failure.
- Challenges for Lawyers:**
- Lawyers were **also considered for inclusion** as reporting entities per FATF recommendations.
 - Sections 126 and 129 of the **Evidence Act** provide lawyers with privileged communication with their clients, making this inclusion complex.

GS III

4. 'Oligopolies' control over rare earths is key green transition snag' -The Hindu

Relevance : Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

News :

- The **Chief Economic Advisor of India** has expressed apprehension about the oligopolies over the mining and processing of the **rare earth minerals**.
- This structure has created problems for the **energy transition efforts** of India.

Prelims Takeaway

- Rare Earth Minerals
- India's Energy Transition Partnership

Need of Rare Earth Minerals

- Rare earth elements are critical for scaling up **green technologies**.
- Oligopolistic control in mining and processing creates **uncertainty** in energy transition efforts.

Funding of Rare Earth Minerals and their Control

- **External funding** for developing countries' energy transition could be exploited for **strategic** purposes.
- **Investors in green transitions** should prioritize public goods creation over excessive greed.
- Public investment is **indispensable** for the needed expansion in this field.
- **Market-based solutions** to carbon emissions have limitations.
- Focusing on **economic growth** is crucial.
- **Capital market liberalization** should not precede economic evolution.
- **Over-financialization** must be assessed before taking any step.
- Supporting countries in prioritizing economic growth is essential for **climate security**.
- Decentralized control is needed instead of oligopolies.

Rare Earth Elements

- Rare Earth Elements consist of **17 metallic elements** in the periodic table.
- They include 15 **lanthanides, scandium, and yttrium**.
- They are also found in the same **ore deposits**.
- They have **diverse applications** across various sectors, including renewable energy, electronics, and aerospace.
- **Extracting** these elements can be hazardous, and only a few places globally produce them.
- The Rare Earth sector's **estimated size** is between \$10 billion and \$15 billion
- The annual production of about **100,000-110,000 tonnes** worldwide.
- They are called 'rare earth' because earlier it was difficult to extract them from their oxides forms technologically.

5. NICED makes quick detection of drug-resistant *H. pylori* possible - The Hindu

Relevance: Science and Technology- developments and their applications and effects in everyday life.

News:

- Researchers at ICMR-NICED developed a **PCR-based assay for *H. pylori* detection and drug resistance.**

Prelims Takeaway

- *H. pylori*

Helicobacter pylori

- It is a common type of bacteria that **grows in the digestive tract** and tends to **attack the stomach lining.**
- Its infections are **usually harmless**, but they're **responsible for most ulcers in the stomach and small intestine.**
- This bacterium can **change the environment around it** and **reduce the acidity**, so it can survive more easily.
- It is adapted to live in the **harsh, acidic environment of the stomach.**
- The **spiral shape** of *H. pylori* allows it to **penetrate the stomach lining**, where it's protected by mucus and the body's immune cells can't reach it.
- This infection **usually happens during childhood.**
- **Prevalence:** *H. pylori* infection is **common in India** and can lead to various gastric issues.

Cutting down the turnaround time

From three-four weeks in the case of culture, the new diagnostic assay can identify *H. pylori* and tell if the bacteria are drug-resistant or not in just one day

■ The two-step molecular assay helps in detecting *H. pylori* infection and also identify clarithromycin-resistant bacteria in an hour

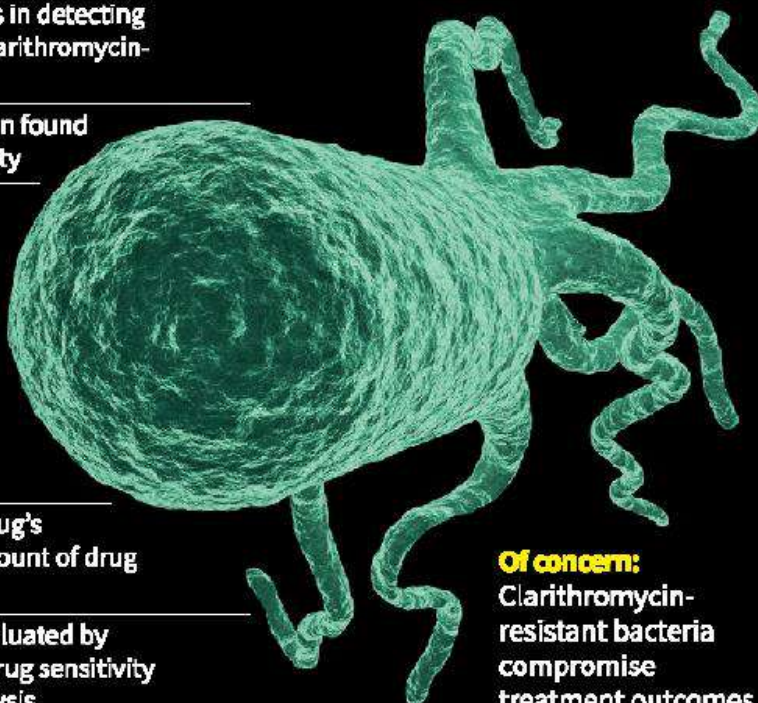
■ The molecular-based assay has been found to have 100% sensitivity and specificity

■ There is an increasing trend of clarithromycin-resistant *H. pylori* bacteria in India affecting treatment outcomes

■ Using genome sequencing, a point mutation in the 23S ribosomal RNA (rRNA) gene of the bacteria was found to be responsible for drug-resistance

■ The point mutation weakens the drug's binding affinity thus reducing the amount of drug that gets into the bacteria

■ The two-steps PCR method was evaluated by comparing it with the conventional drug sensitivity method and also by sequencing analysis



Of concern:
Clarithromycin-resistant bacteria compromise treatment outcomes

Symptoms

- Most people with *H. pylori* infections will **never have any signs or symptoms.**
- When signs or symptoms do occur with *H. pylori* infection, they are **typically related to gastritis or a peptic ulcer** and may include
 - An ache or burning pain in your stomach (abdomen)
 - Stomach pain may be worse when your stomach is empty
 - Nausea, Loss of appetite, unintentional weight loss,

Treatment

- It typically involves a **combination of antibiotics** and a **proton-pump inhibitor** - a drug that reduces the stomach acid for up to 14 days.
- This treatment is sometimes referred to as **triple therapy**.

6. IIT-Kharagpur study: India's surface temp may increase by up to 5.1°C by 2100 - Indian Express

Relevance: Conservation, environmental pollution and degradation

News:

- A recent study by IIT-Kharagpur titled "**Enhanced surface temperature over India during 1980-2020 and future projections: causal links of the drivers and trends**," was published.
- The study was conducted by a team from IIT-Kharagpur in collaboration with the **Indian Institute of Tropical Meteorology** in Pune.
- It assesses the **impact of various factors on temperature changes** and makes future projections.
- It predicts a **temperature increase of 1.1 to 5.1 degrees Celsius in India by 2100**.

Prelims Takeaway

- Paris Agreement
- Kyoto Protocol

The Temperature Trends

- The **actual rise in temperatures** over the Indian region till now has been **significantly lower than the global average**.
- It identifies increasing temperature trends during the **pre-monsoon and post-monsoon seasons in several regions** of India.
- The **post-monsoon season** displayed **increasing temperature trends** across the entire country, with significant values in specific regions.
- Temperature increases in the last four decades ranged from **0.1 to 0.4 degrees Celsius per decade** during different seasons.
- The **western Himalayan region and north-east India** experienced **significant temperature rises**.
 - This further accentuates the urgent need to address rising global temperatures and climate change.

The Projections

- Projections for temperature increases in India **vary based on emissions scenarios**.
- **Moderate emissions scenarios:** Temperatures are likely to rise by about 1.2-2 degrees Celsius by 2100.
- **High emission scenarios:** Temperatures may rise by 3.5-5.1 degrees Celsius by 2100.
- The study suggests that **efforts to reduce emissions may mitigate the high-end temperature increase**.

7. NITI weighs discontinuing key water report launched 5 yrs ago - Indian Express

Relevance: Conservation, environmental pollution and degradation

News:

- **NITI Aayog**, has decided to keep reports on **states' progress in water management for 2018-19 and 2019-20 "internal"**.
- These reports, known as the '**Composite Water Management Index (CWMI)**', were previously publicly released and **brought attention to India's water challenges**.

Prelims Takeaway

- Composite Water Management Index
- Climate Tipping Points
- NITI Aayog

History of CWMI Reports

- The CWMI reports were initiated five years ago and **ranked states based on 28 parameters related to water management**.
- **First Edition:** Released in June 2018, covered data from 2015-16 and 2016-17.
- **Second Edition:** Launched in August 2019, covered data from 2017-18.

- Introduced to **promote data-backed policy decisions** and **foster competitive and cooperative federalism** among states in **water resource management**.

Request to Ministry of Jal Shakti

- In May 2023, NITI Aayog wrote to the Union Ministry of Jal Shakti, seeking perspectives on the "**use and applicability**" of the **CWMI** and whether it should continue.
- There has been **no response from the Ministry**, despite the pending release of the third and fourth editions of the CWMI reports.

Latest Unreleased Report

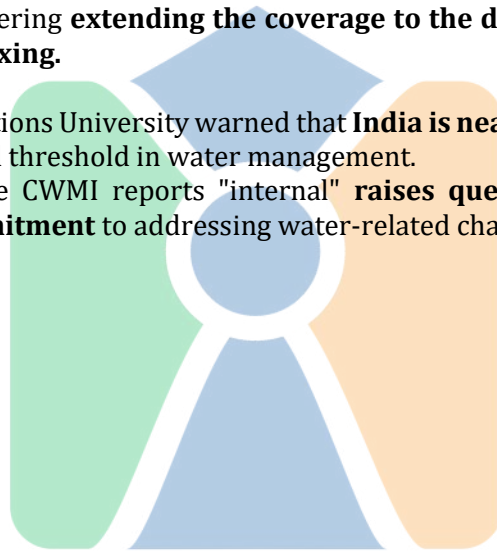
- The latest unreleased report emphasizes that **water scarcity is a national problem in India**.
- It notes a **decline in annual per capita water availability** and identifies regions with **improved water management performance**.

Projections and Delay

- The delay in releasing the third and fourth rounds of the CWMI is attributed to the **unavailability of updated data** due to the COVID-19 pandemic.
- There are discussions about **whether to combine the reports** for 2018-20 with those for 2020-21 and 2021-22.
- NITI Aayog is also considering **extending the coverage to the district level** and **exploring other channels for water indexing**.

Warning on Groundwater

- In October, the United Nations University warned that **India is nearing a groundwater risk tipping point**, indicating a critical threshold in water management.
- The decision to keep the CWMI reports "internal" **raises questions about the government's transparency and commitment** to addressing water-related challenges in the country.



Mentorship
India

Editorials, Gists and Explainers

1. Giving the urban Indian a better life - The Hindu

Relevance: Urbanization, their problems and their remedies.

Context:

- The theme of World Cities Day on October 31 was "**Financing Sustainable Urban Future for All.**"
- There is a critical need for **proper financing and policy shifts** to address the **adverse effects of air pollution in Indian cities**, which are taking a toll on life expectancy.

The Alarming State of Air Pollution

- A report from The Energy Policy Institute at Chicago (EPIC) reveals that 39 out of the 50 most polluted cities in the world are in India.
- Pollution in India has significant health implications, with an average Indian losing 5.3 years of life expectancy due to it.
 - Delhi residents are losing 11.9 years.
- Air pollution leads to various health problems, including respiratory issues and cardiovascular diseases.
- Pollution is no longer limited to the Indo-Gangetic plains and is also impacting coastal cities in India.

Causes of Pollution in Indian Cities

- The urban development strategy in India, which prioritizes real estate development and road expansion while neglecting green spaces, contributes to increased pollution.
- Factors like road dust, concrete batching, industrial pollution, vehicular emissions, and construction activities also play a significant role.
- Motorized transport alone accounts for 60% of urban pollution.

Urban Development and Transportation Changes

- The growth of India's automobile market and the increase in car ownership necessitate a shift in urban development strategies.
- Expanding roads to accommodate more cars without addressing traffic congestion is not a viable solution.
- Construction activities contribute to about 10% of air pollution in the National Capital Region.
- Public participation in urban planning is limited, and residents often have no role in shaping their cities.

Recommendations for a Sustainable Urban Future

- Focusing on public transport and investing in buses for towns and cities.
- Controlling private motorized vehicular movement through measures like congestion taxes and odd-even number plate restrictions.
- Implementing measures like "no car days" and encouraging city leaders and elites to use public transport.
- Transition to green vehicles to reduce emissions.
- Adoption of Graded Response Action Plans (GRAP) in various Indian cities for anti-air pollution measures.
- Ensuring real-time monitoring of industrial pollution and involving residents in street supervision.
- Protecting and expanding urban commons such as ponds, water bodies, urban forests, and parks.
- Promoting afforestation within cities rather than planting trees far away.
- Strengthening governance and empowering people to actively participate in pollution control measures.

2. The Zika genome and insights into the era of emerging outbreaks - The Hindu

Relevance: Science and Technology- developments and their applications and effects in everyday life.

Context:

- The **Zika virus**, along with the **Dengue virus**, affects approximately **400 million** people each year.
- Zika virus became particularly notorious during the **2015-2018 outbreak** in the **Americas**, which saw a rise in microcephaly cases in newborns.
- The **Zika virus's genome** has played a crucial role in
 - understanding the virus
 - tracking outbreaks
 - unraveling its molecular pathogenesis.

About Zika Virus

- Zika is a **mosquito-borne** flavivirus.
- It often **causes** asymptomatic or mild infections, including fever, rash, and joint pain.
- The virus **gained global attention** during the 2015-2018 outbreak when microcephaly cases surged
- This led to a **public health emergency** declaration by the World Health Organization.

Genome of Zika Virus

- The Zika virus has an RNA genome, making it prone to mutations.
- The Zika genome, composed of more than **10,000 bases** of **single-stranded RNA**.

- It has been **sequenced** and studied extensively.
- The genome encodes a large **polyprotein** further divided into
 - capsid
 - membrane precursor (prM), envelope
 - seven non-structural proteins.
- The Genome helps track the virus's evolution, transmission, and pathogenesis.

Diagnosis of Zika Virus

- **Diagnosis** of Zika virus infections relies primarily on **genetic testing**.
- Any **antibody-based tests** can cross-react with antibodies from other viruses like dengue, yellow fever, and West Nile.

Lineages of Zika Virus

- Genomic studies have identified **two primary lineages** of the Zika virus:
 - African
 - Asian.
- The sub-lineage that caused the outbreak in the **Americas** had genomes similar to those from the **French Polynesia** outbreak in 2013-2014.

Microcephaly in Newborn

- Microcephaly in newborns has been a **significant concern** in Zika virus infections.
- The relationship between Zika virus strains and microcephaly remains **complex**.
- This phenomenon starts during **pregnancy** itself.
- Zika and Dengue Virus infections are known to **interact** in intriguing ways.
- These viruses causes growth of specific skin microbes that attract mosquitoes, aiding in virus transmission.
- The administration of **isotretinoin** can reverse this phenomenon.

Conclusion:

- Climate change and global warming impact the spread of **vector-borne diseases**.
- Genomic technologies and insights into **viral pathogenesis** will be crucial in guiding public health efforts to combat these emerging outbreaks.
- Understanding these **interactions** can inform vaccine design and public health strategies.

3. India starts process to adopt National Security Strategy: why this is significant - Indian Express

Relevance: Defence

Context:

- After years of deliberations, India has initiated the process of creating a **National Security Strategy**.
- The **National Security Council Secretariat (NSCS)** is collecting inputs from various ministries and departments.
- This marks India's **first attempt at crafting such a strategy**.

<p>What is a National Security Strategy?</p> <ul style="list-style-type: none"> • A National Security Strategy document outlines the country's security objectives, and the means to achieve them. • It defines traditional, non-traditional threats and opportunities, introducing accountability for agencies responsible for implementation. • It would guide the military as well as critical defense and security reforms with strategic implications, providing a holistic view of the overall national security. <p>Countries with National Security Strategies</p> <ul style="list-style-type: none"> • Most developed countries with advanced military and security infrastructure have such strategies. • Examples include the US, UK, Russia, China and Pakistan. 	<p>India's Need for a National Security Strategy</p> <ul style="list-style-type: none"> • India has long discussed the need for a National Security Strategy. • Urgency arises from rising geopolitical tensions and evolving various traditional and non-traditional threats. • Experts highlight the importance of military reforms stemming from a national security strategy. <p>Why India Didn't Have a National Security Strategy?</p> <ul style="list-style-type: none"> • In the past, three attempts were made to develop a strategy but faced political hesitation. • Accountability in defense management may have been a concern. • Various views exist in the strategic community regarding the reasons for India's delay in creating a strategy. <ul style="list-style-type: none"> ◦ These include lack of a cohesive, whole-of-government effort, the government deliberately not making public its national security objectives etc.
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Quick Look

1. IL-38 Aircraft

- It is a maritime reconnaissance aircraft that was commissioned into the Indian Navy in 1977.
- It remained a formidable air asset throughout its service life for nearly 44 years.
- It is an all-weather aircraft with long endurance and substantial operating range.
- It was with the induction of IL 38 aircraft that the Navy moved into the arena of airborne Long Range Maritime Reconnaissance (LRMR) combined with long range anti-submarine search and strike, anti-shipping strike, electronic signal intelligence and distant SAR.

2. Pradhan Mantri Awaas Yojana- Gramin (PMAY-G)

- To achieve the objective of “Housing for All” by 2022, the erstwhile rural housing scheme Indira Awaas Yojana (IAY) was restructured to Pradhan Mantri Awaas Yojana-Gramin (PMAY-G) w.e.f 1st April, 2016.
- Objectives
 - To provide a pucca house with basic amenities to all rural families, who are homeless or living in kutcha or dilapidated houses by the end of March 2022.
 - To help rural people Below the Poverty Line (BPL) in construction of dwelling units and upgradation of existing unserviceable kutcha houses by providing assistance in the form of a full grant.
- Selection of Beneficiaries: Through a three stage validation - Socio Economic Caste Census 2011, Gram Sabha, and geo-tagging.
- Beneficiaries: People belonging to SCs/STs, freed bonded labourers and non-SC/ST categories, widows or next-of-kin of defence personnel killed in action, ex servicemen and retired members of the paramilitary forces, disabled persons and minorities.
- The cost of unit assistance is shared between Central and State Governments in the ratio 60:40 in plain areas and 90:10 for North Eastern and hilly states.
- Nodal Ministry: Ministry of Rural development.

3. Antimicrobial Resistance

- It is the resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs that are used to treat infections.
- It occurs when a microorganism changes over time and no longer responds to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- The World Health Organisation (WHO) has identified AMR as one of the top ten threats to global health.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as “superbugs”.
- In India, over 56,000 newborn die each year due to sepsis caused by organisms that are resistant to first line antibiotics.
- A study reported by ICMR (Indian Council of Medical Research) from 10 hospitals showed that when Covid patients acquire drug-resistant infections in hospitals, the mortality is almost 50-60%.

4. Commission for Air Quality Management (CAQM)

- A statutory authority that superseded bodies such as the central and state pollution control boards of Delhi, Punjab, Haryana, UP and Rajasthan.
- In 2021, the Parliament approved the Commission for Air Quality Management in the National Capital Region and Adjoining Areas Bill.
- Powers and functions
 - It will have the powers to issue directions to these state governments on issues pertaining to air pollution.
 - It will entertain complaints as it deems necessary for the purpose of protecting and improving the quality of the air in the NCR and adjoining areas.
 - It will also lay down parameters for control of air pollution.
 - It will also be in charge of identifying violators, monitoring factories and industries and any other polluting unit in the region, and will have the powers to shut down such units.
 - It will also have the powers to overrule directives issued by the state governments in the region, that may be in violation of pollution norms.
- Composition
 - Chairperson: To be chaired by a government official of the rank of Secretary or Chief Secretary.
 - The chairperson will hold the post for three years or until s/he attains the age of 70 years.
 - It will have members from several Ministries as well as representatives from the stakeholder States.
 - It will have experts from the Central Pollution Control Board (CPCB), Indian Space Research Organisation (ISRO) and Civil Society.

5. Vitrimer

- Researchers at the University of Tokyo have successfully created “sustainable plastic,” which is based on an epoxy resin vitrimer.
- Vitrimer represents a relatively recent category of plastics known for their impressive strength at low temperatures.
- They also possess the unique ability to be reshaped numerous times when exposed to higher temperatures.
- It is also partially biodegradable.
- However, they do have a notable drawback - extreme brittleness, as they cannot be stretched far before breaking.
- To address this issue, researchers introduced a molecule called polyrotaxane into the plastic synthesis process, resulting in a novel plastic variant they've dubbed VPR, an abbreviation for "vitrimer incorporated with polyrotaxane."

6. Environmental DNA (eDNA)

- Researchers from the Laboratory for the Conservation of Endangered Species (LaCONES) at the CSIR-Centre for Cellular and Molecular Biology (CCMB) in Hyderabad have developed a new eDNA sequencing method to assess biodiversity.
- eDNA is DNA shed by all organisms into their surroundings through natural processes during their lifetime or after death.
- It originates from cellular material shed by organisms (via the skin, excrement, etc.) into aquatic or terrestrial environments that can be sampled and monitored using new molecular methods.
- The new non-invasive method can assess the total biodiversity of any ecosystem by sequencing the DNA fragments found in environmental samples such as water, soil, or air.
- This method can detect all kinds of organisms, including viruses, bacteria, archaea, and eukaryotes such as fungi, plants, insects, birds, fish and other animals.
- This method requires just a few litres of water sample without any direct capture or counting of species.
- The researchers filter out eDNA from environmental samples, read their sequences, and thus identify the source of the eDNA.

7. Pancorius Sebastiani

- Recently, researchers discovered a new species of jumping spider in the Shendurney Wildlife Sanctuary.
- The new species belongs to the jumping spider genus *Pancorius* Simon, 1902, and the Salticidae
- It has been named *Pancorius Sebastiani* after the late spider taxonomist P.A. Sebastian.
- The *Pancorius* genus of Asian jumping spiders is primarily distributed in southeast Asia.
- Its distribution was hitherto limited to the eastern and northeastern regions of
- The new species is the first to be reported from the south.
- The males and females of *Pancorius Sebastiani* exhibit a reddish brown carapace, yellowish abdomen with black patches, and chevron-shaped markings posteromedially.
- An analysis of Salticidae species in the country shows that only two states, West Bengal and Tamil Nadu, have reported high numbers.
- The others, including those harbouring biodiversity hotspots like the Western Ghats and northeastern India, have relatively few numbers of species.

8. Dead Sea

- It is a salt lake bordering Jordan to the east and Israel to the west.
- However, the western shore's southern half belongs to Israel, while the shore's northern half is in the West Bank, an area claimed by both Israel and Palestine.
- It lies to the east of the Mediterranean Sea and south of the Sea of Galilee.
- It lies in the Jordan Rift Valley and is fed mainly by the Jordan River, which enters the lake from the north.
- It does not have an outlet, and so it loses its water mainly through evaporation.
- It is 306 m deep, the deepest hypersaline lake in the world.

- It is almost ten times saltier than ordinary that makes for a harsh environment in which animals cannot flourish, hence its name.
- The Dead Sea seawater has a density of 1.240 kg/L, which makes swimming in its waters similar to floating.

9. ENCORE Software

- The Election Commission of India has designed in-house software, ENCORE, for complete Candidate and election management.
- It provides a seamless facility for Returning Officers to process candidate nominations, affidavits, Voter turnout, counting, results, and data management.
- The ENCORE counting application is an end-to-end application for returning officers to digitize the votes polled, tabulate the round-wise data and then take out various statutory reports of counting.
- Another application called the ENCORE Scrutiny Application allows Returning Officers to do scrutiny of the nominations filed by the candidates online.
- After verification of the nomination the status is marked as Accepted, Rejected or Withdrawn helping the Returning Officer to prepare the final list of contesting candidates and assign the symbols.

10. Maternity leave for women soldiers on par with officers

- A proposal for extending the rules for maternity, child care and child adoption leave for women soldiers, sailors and air warriors has been approved.
- These benefits have been granted at par with their officer counterparts.
- Women soldiers will get the benefits of the new proposal who feature among the 25% of Agniveers inducted into the three services.
- Women officers in the three services currently are eligible for 180 days of maternity leave.
- Women officers are eligible for 180 days of leave in case they adopt a child below the age of one year.
- Permanent commission women officers are also eligible for 360 days of child care leave while short service commission women officers are eligible for 180 days of leave.

11. Kavach System

- The KAVACH is an indigenously developed Automatic Train Protection (ATP) system.
- It has been developed by the Research Design and Standards Organisation (RDSO) in collaboration with the Indian industry.
- It is aimed at achieving safety in train operations across Indian Railways.
- It operates at Safety Integrity Level-4 (SIL-4) standards.
- It is meant to provide protection by preventing trains from passing the signal at Red and avoiding collisions.
- It activates the train's braking system automatically if the driver fails to control the train as per speed restrictions.
- In addition, it prevents the collision between two locomotives equipped with functional Kavach systems

Prelims Track Question

Q1. With reference to the Pradhan Mantri Garib Kalyan Anna Yojana , consider the following statements

1. The nodal Ministry of the Scheme is the Ministry of Agriculture and Farmers Welfare.
2. The benefit of the scheme can be availed by any migrant labour or beneficiary under the One Nation One Ration Card.

Which of the statements given above is/are correct?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Q2. With reference to Lithium Reserves , consider the following statements

1. There are lithium reserves in the Union Territory of Jammu and Kashmir.
2. 50% of the world deposits of Lithium are concentrated in three South American countries i.e.Argentina, Brazil, and Chile.

Which of the statements given above is/are correct?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Q3. With reference to the mandate of the Financial Action Task Force , consider the following statements

1. It develops measures to combat money laundering.
2. It strives to combat terrorist financing.
3. It endeavors to counter the financing of proliferation of Weapons of Mass Destruction.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q4. With reference to Rare Earth Minerals , consider the following statements

1. They consist of 19 metallic elements in the periodic table.
2. Due to their limited deposits in the world, they are called 'Rare'.

Which of the statements given above is/are correct?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Q5. With reference to the Helicobacter pylori, consider the following statements

1. It is a virus that affects the human central nervous system.
2. The infection usually infects a person during his childhood.
3. Most people with H. pylori infections will never have any signs or symptoms.
4. It is treated with a combination of antibiotics and a proton-pump inhibitor sometimes referred to as triple therapy.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. Only three
- D. All four

Q6. Which of the following statements most aptly define the term " Climate Tipping Point" ?

- A. The point at which Earth's climate becomes too unpredictable for long-term climate models.
- B. A point beyond which climate change becomes irreversible, potentially leading to catastrophic consequences.
- C. The point at which greenhouse gas concentrations reach their maximum limit.
- D. A significant but temporary change in the climate system due to natural variability.

Q7. Which of the following releases the “Composite Water Management Index”?

- A. Central Ground Water Authority
- B. Central Pollution Control Board
- C. Central Water Commission
- D. NITI Aayog

Q8. Consider the following statements about Smart Cities Mission

- 1. It has well defined templates for a smart city.
- 2. It is an initiative of the Union Housing and Urban Affairs Ministry.
- 3. Its objective is to promote cities that provide core infrastructure, clean and sustainable environment and give a decent quality of life to their citizens through the application of ‘smart solutions’.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

Q9. With reference to Zika Virus, consider the following statements

- 1. It is a kind of arbovirus.
- 2. It promotes microcephaly in the newborn.

Which of the statements given above is/are correct?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Q10. Consider the following statements with reference to National Security Strategy of India

- 1. A National Security Strategy document outlines the country’s security objectives, and the means to achieve them.
- 2. India has had its National Security Strategy since Independence.

Which of the statements given above is/are correct?

- A. Only 1
- B. Only 2
- C. Both 1 and 2
- D. Neither 1 nor 2

Prelims Track Answer

Ans. 1 Option B is correct

Explanation

- In December 2022, as PMGKAY came to an end after multiple extensions, the Union Cabinet decided to make NFSA rations free for one year. i.e. December, 2023.
- Now, It has been extended for another five years in addition to this deadline.
- The nodal Ministry of PMGKAY is the Ministry of Finance. **Hence, Statement 1 is incorrect.**
- The benefit of the free ration can be availed through portability.
- The benefits of PMGKAY can be availed by any migrant labor or beneficiary under the One Nation One Ration Card (ONORC). **Hence, Statement 2 is correct.**
- It is covered by the nearly 5 lakh ration shops across the country.

Ans. 2 Option A is correct

Explanation

- India has found 5.9 million tonnes of lithium reserves in the Reasi district of Jammu & Kashmir. **Hence, Statement 1 is correct.**
- This may be the seventh-largest deposit of the rare element, accounting for roughly 5.7% of all the reserves in the world.
- 50% of the world deposits of Lithium are concentrated in three South American countries—Argentina, Bolivia, and Chile. **Hence, Statement 2 is incorrect.**
- China, on the other hand, has an advantage over other nations and is in charge of 75% of the world's lithium refining.

Ans. 3 Option C is correct

Explanation

- FATF is the global money laundering and terrorist financing watchdog.
- It was set up in 1989 out of a G-7 meeting of developed nations in Paris.
- Initially, its objective was to examine and develop measures to combat money laundering. **Hence, Statement 1 is correct.**
- After the 9/11 attacks on the US, the FATF in 2001 expanded its mandate.
- It incorporated efforts to combat terrorist financing. **Hence, Statement 2 is correct.**
- In April 2012, it added efforts to counter the financing of proliferation of Weapons of Mass Destruction (WMD). **Hence, Statement 3 is correct.**

Ans. 4 Option D is correct

Explanation

- Rare Earth Elements consist of 17 metallic elements in the periodic table. **Hence, Statement 1 is incorrect.**
- They include 15 lanthanides, scandium, and yttrium.
- They are also found in the same ore deposits.
- They have diverse applications across various sectors, including renewable energy, electronics, and aerospace.
- Extracting these elements can be hazardous, and only a few places globally produce them.
- The Rare Earth sector's estimated size is between \$10 billion and \$15 billion
- The annual production of about 100,000-110,000 tonnes worldwide.
- They are called 'rare earth' because earlier it was difficult to extract them from their oxides forms technologically. **Hence, Statement 2 is incorrect.**

Ans. 5 Option C is correct

Explanation

- Helicobacter pylori is a common type of bacteria that grows in the digestive tract and tends to attack the stomach lining. **Hence, statement 1 is incorrect.**
- Its infections are usually harmless, but they're responsible for most ulcers in the stomach and small intestine.
- This bacterium can change the environment around it and reduce the acidity, so it can survive more easily.
- It is adapted to live in the harsh, acidic environment of the stomach.
- This infection usually happens during childhood. **Hence, statement 2 is correct.**
- H. pylori infection is common in India and can lead to various gastric issues.
- Most people with H. pylori infections will never have any signs or symptoms. **Hence, statement 3 is correct.**
- When signs or symptoms do occur with H. pylori infection, they are typically related to gastritis or a peptic ulcer.
- Treatment typically involves a combination of antibiotics and a proton-pump inhibitor - a drug that reduces the stomach acid for up to 14 days; sometimes referred to as triple therapy. **Hence, statement 4 is correct.**

Ans. 6 Option B is correct**Explanation**

- 'Tipping points' are thresholds where the earth's systems can no longer stabilize. Crossing these points becomes more dangerous with increased warming. **Hence, option B is correct.**
- For example, the melting of Greenland's ice can reach a tipping point where the ice loss accelerates, leading to a significant rise in sea levels.
- Examples of tipping point include Melting of Greenland ice, Collapse of Antarctic glaciers (resulting in sea level rise), Destruction of Amazon forests, Melting of all permafrost, etc.
- Five dangerous tipping points may have already been passed due to 1.1°C of global heating caused by human activity.

Ans. 7 Option D is correct**Explanation**

- NITI Aayog first launched and conceptualized the Composite Water Management Index in 2018 as a tool to instill a sense of cooperative and competitive federalism among the states. **Hence, option D is correct**
- It provided actionable guidance to States on where they were doing well absolutely and relatively and what they needed to focus on to secure their water
- The states are ranked across 9 themes and cover 25 states and 2 union territories.
- It does not include data from West Bengal, Mizoram, Manipur and Jammu & Kashmir.
- It is an attempt to create a pan-India set of metrics that measure different dimensions of water management and use across the lifecycle of water.

Ans. 8 Option B is correct**Explanation**

- The Smart Cities Mission is an initiative of the Union Housing and Urban Affairs Ministry. **Hence, statement 2 is correct.**
- The main objective of the Mission is to promote cities that provide core infrastructure, clean and sustainable environment and give a decent quality of life to their citizens through the application of 'smart solutions'. **Hence, statement 3 is correct.**

- The Mission aims to drive economic growth and improve quality of life through comprehensive work on social, economic, physical and institutional pillars of the city.
- There is no standard definition or template of a smart city. **Hence, statement 1 is incorrect.**
- The Mission is operated as a Centrally Sponsored Scheme.

Ans. 9 Option B is correct**Explanation**

- Zika is a mosquito-borne flavivirus. **Hence, Statement 1 is incorrect.**
- The Zika virus has an RNA genome, making it prone to mutations.
- Microcephaly in newborns has been a significant concern in Zika virus infections. **Hence, Statement 2 is correct.**
- Diagnosis of Zika virus infections relies primarily on genetic testing.
- Genomic studies have identified two primary lineages of the Zika virus:
 - African
 - Asian

Ans. 10 Option A is correct**Explanation**

- A National Security Strategy document outlines the country's security objectives, and the means to achieve them. **Hence, statement 1 is correct.**
- It defines traditional, non-traditional threats and opportunities, introducing accountability for agencies responsible for implementation.
- It would guide the military as well as critical defense and security reforms with strategic implications, providing a holistic view of the overall national security.
- Most developed countries with advanced military and security infrastructure have such strategies.
- Examples include the US, UK, Russia, China and Pakistan.
- After years of deliberations, India has initiated the process of creating a National Security Strategy. **Hence, statement 2 is incorrect.**
- In the past, three attempts were made to develop a strategy but faced political hesitation.

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