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PREMATURE DEATHS RELATED TO PM2.5 EXPOSURE

Context

- A new study (published in Journal Environment International) has found that the fine **Particulate Matter (PM 2.5)** led to **135 million premature deaths worldwide between 1980 and 2020.**

Particulate Matters

- It is a term for a **mixture of solid particles and liquid droplets** found in the air that comes in many sizes and shapes and can be made up of hundreds of different chemicals.
- Some particles, known as **primary particles**, are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires.
- Others form in complicated **reactions in the atmosphere of chemicals** such as **sulphur dioxides and nitrogen oxides** that are emitted from power plants, industries and automobiles.

Size of Particulate Matters

- Particles that are **10 micrometres** in diameter or smaller because those are the particles that **generally pass through the throat and nose and enter the lungs.**
 - ♦ The size of particles is directly linked to their potential for causing health problems.
- **PM10:** inhalable particles, with diameters that are generally 10 micrometres and smaller.
- **PM2.5:** fine inhalable particles, with diameters that are generally 2.5 micrometres and smaller.

PM2.5 and Health Impacts

- When inhaled, **Particulate Matters** can cause a wide range of respiratory disorders. Continuous exposure to these can cause asthma, chronic obstructive pulmonary disease and any type of bronchitis.
- **Particulate matter** can penetrate deep inside the lungs and damage it.
- Any **bacteria or virus** can now attack the lungs and this could even lead to serious life-threatening infections.
- **Particulate Matter** can also cause chest tightening, watery eyes, sneezing, and running nose.

Breakdown of Premature Deaths

- From **1980 to 2020**, a third of premature deaths were associated with **stroke (33.3%)**, another third with **ischemic heart disease (32.7%)** and the remaining deaths were due to **chronic obstructive pulmonary disease, lower respiratory infections and lung cancer.**

Do You Know?

- According to the **WHO**, **almost 3.7 million premature deaths annually** are attributed to outdoor air pollution.
- About **80%** of those deaths are due to **heart disease and stroke**, while another **20%** are from **respiratory illnesses and cancers** related to exposure to PM2.5.

Geographical Disparity in Air Pollution-Related Deaths

- **Asia** is the most affected region, with an estimated 98.1 million premature deaths attributed to PM2.5 pollution **between 1980 and 2020.**
- **China and India** led with 49 million and 26.1 million deaths, respectively.
 - ♦ Other South Asian nations like **Pakistan, Bangladesh, Indonesia and Japan** also suffered significant losses due to PM2.5 exposure.

Indian Scenario

- India, with 18% of the world's population, has a **disproportionately high 26% of the global premature deaths** and disease burden due to air pollution.
- More than 23 lakh people died prematurely due to pollution in India in 2019.
- Of them, 73% of deaths occurred due to air pollution, the largest number of such deaths globally.
- **In Delhi**, the national capital, the number of deaths attributable to PM2.5 was 106 out of 1,00,000 people in 2019, above the **global median 58 per 1,00,000 people.**

Role of Climate Variability Phenomena

- The research highlighted the role of climate variability phenomena like El Nino-Southern Oscillation, Indian Ocean Dipole and North Atlantic Oscillation in **exacerbating PM2.5 pollution levels**, and **collectively** caused approximately 7,000 additional premature deaths annually.

- ♦ The **Indian Ocean Dipole** had the **largest impact** on the number of deaths, followed by the North Atlantic Oscillation and then El Nino.

Effects of Climate Change on Human Health

- Changes in climate patterns can make air pollution worse.
- The effects of climate change and the environment on human health are not lesser than those of **genomics and lifestyle patterns** and they have been increasing over the past decades.

Related Efforts By India

- **National Clean Air Programme (NCAP):** Launched in 2019 with targets to achieve 20% to 30% reduction in concentrations of PM10 and PM2.5 by the year 2024, keeping 2017 as the base year for comparison of concentration.
- **Decarbonisation Efforts:** A report suggests that decarbonising faster can save India 200,000 deaths from particulate matters.
 - ♦ The report analysed health impacts stemming from exposure to particulate matter under various policy pathways to meet Paris Agreement 2015 targets.
- **Green Infrastructure:** Cities are reimagining cityscapes with verdant green corridors and tree-lined boulevards, weaving greenery seamlessly into the urban fabric.
 - ♦ Planting certain species can create a natural air-purifying barrier, absorbing harmful substances such as hydrocarbons and aromatic compounds.
- **Vehicle Scrappage Policy:** It aims to replace old vehicles with modern and new vehicles on Indian roads, and is expected to reduce pollution, create job opportunities and boost demand for new vehicles.
- **Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles (FAME) Scheme:** It aims to reduce pollution caused by diesel and petrol-operated vehicles and to promote electric and hybrid vehicles in India.
 - ♦ The FAME phase II scheme has been extended for two years to drive greater adoption of the scheme.

Source: DTE

PORTABLE OPTICAL ATOMIC CLOCK

Context

- A study recently published in the journal Nature introduced a kind of **portable optical atomic clock** that can be used onboard ships.

Evolution of Atomic Clocks

- Traditional atomic clocks, such as those based on **Caesium-133**, are highly stable and have been used for decades to define the duration of a second.
- These clocks **operate at microwave frequencies**, ticking billions of times per second.
 - ♦ Despite their precision, they are **bulky, power-intensive, fragile, and expensive**, limiting their use to large research facilities.

Optical Atomic Clocks

- It is the **next generation of atomic clocks** that operate at **optical frequencies**, ticking tens of trillions of times per second.
- These clocks can remain **precise to 10 femtoseconds** after a day, or within a second after 50 billion years.
- However, these clocks are even **more complex and delicate** than their microwave counterparts.

Portable Optical Atomic Clocks

- It uses an **iodine-based system**. It uses **molecular iodine**, which has convenient transitions near a frequency-doubled infrared LASER.
- The clock's design revolves around the use of **robust and compact LASERs**, commonly used in **telecommunications and industrial machining**.
- It is **not as accurate as an optical atomic clock** in the laboratory, but it is still accurate enough to **lose or gain a second only every 9.1 million years**.
- A recent breakthrough has led to the creation of a portable optical atomic clock that trades some **degree of accuracy for increased portability and robustness**, making it the most accurate timekeeping device **currently available for maritime use**.

How are Optical Atomic Clocks Different?

- **Optical Atomic Clocks:** These are more accurate than their counterparts due to their working principle. The resonance frequency in these clocks is in the **optical range, which includes visible light, ultraviolet, and infrared radiation**.

- **Role of LASERs in Optical Atomic Clocks:** Researchers use LASERs to stimulate atomic transitions in an optical atomic clock. The light emitted by these lasers is highly coherent, meaning all light waves have the same frequency and their wavelengths are related in a stable manner, resulting in precise properties and great stability.
- **Higher Accuracy through Coherent Light:** Optical atomic clocks achieve higher accuracy in two main ways through the use of coherent light.
 - ♦ **Higher Operating Frequency:** If we compare two clocks, A and B, where A has a higher operating frequency than B, A will complete more oscillations than B in the same time.
 - It allows A to measure smaller increments of time more accurately as it has more cycles to count within that time frame.
 - ♦ **Narrower Linewidths:** Optical atomic clocks have much narrower linewidths, which is the range of frequencies over which the transition occurs.
 - The narrower the linewidth, the easier it is to tune the frequency of the optical light that produces the resonance, leading to **higher accuracy** as it enables more precise changes.
- **Use of Strontium in Optical Atomic Clocks:** The most commonly used atom in optical atomic clocks is strontium (Sr). It is preferred due to its narrow linewidths and stable optical transitions.

Significances of Optical Atomic Clocks

- **Higher Frequency:** Optical clocks use light in the visible spectrum to measure atomic oscillations. The resonance frequency of the light rays is about 50,000 times higher than that of microwave radiation, allowing for a more precise measurement.
- **Greater Stability and Accuracy:** The stability of an atomic clock is proportional to its operating frequency and inversely proportional to the width of the electronic transition. Since light has a frequency roughly **100,000 times higher than that of microwaves** – clocks.
 - ♦ The expected **deviation** of the new optical clock is **1 second in 15 billion years**.
- **Potential Applications:** Optical clocks have many potential applications – from **improved GPS measurements** and better **tracking of deep-space probes** to **fundamental tests of**

general relativity and measurements of the **physical constants**.

- **Maritime Navigation:** Ships at sea have always faced challenges in maintaining **accurate timekeeping** due to the lack of stable reference points. The advent of this portable atomic clock **aims to enable precise maritime navigation**, thereby enhancing **safety and efficiency at sea**.

Source: TH

COUNCIL OF MINISTERS SWORN-IN: POWER AND FUNCTIONS

In News

- President Draupadi Murmu administered oaths to the Central Council of Ministers of the new NDA government .
 - ♦ The COM is larger in strength compared to the previous term, featuring 30 cabinet ministers, five Ministers of State (Independent Charge) and 36 Ministers of State.
- ### About Central Council of Ministers
- The Central Council of Ministers is led by the Prime Minister and plays a vital role in government policy-making.
 - Given the parliamentary system of government in India, it is effectively the real executive authority.
 - While the President of India is the head of the Executive, they must act on the aid and advice of the COM as mandated by the Indian Constitution.

Constitutional Provisions

- **According to Article 75**, “There shall be a Council of Ministers with the Prime Minister at the head to aid and advise the President who shall, in the exercise of his functions, act in accordance with such advice
 - ♦ Article 75 further states that the **President appoints the Prime Minister**.
 - ♦ Based on the PM’s recommendation, the President also appoints other ministers.
 - ♦ Article 75 states: “The Council of Ministers shall be collectively responsible to the House of the People.”
 - ♦ The article mandates that the size of this **council should not exceed 15%** of the strength of the Lok Sabha, or the House of the people.

- **Article 88 empowers the ministers** to speak or otherwise participate in proceedings in both the Lok Sabha and Rajya Sabha, as well as any joint session of both houses or any Parliamentary committee they may be a part of.
 - ◆ However, it does not guarantee them the right to vote.

Role of the Prime Minister in the COM

- The Prime Minister is the head of the Central Council of Ministers in an executive capacity.
- The position he holds is often described as “first among equals”, wherein the PM has a unique role and is considered the primary leader of the COM, but is nevertheless equal to his ministers.
 - ◆ The PM is responsible for decision-making on all important policy issues and other portfolios not allocated to any other minister.
- The Prime Minister additionally serves as head of the Cabinet Secretariat, the government body which supervises the day-to-day administration of the government and the conduct of business between ministries.
 - ◆ Additionally, he heads the NITI Aayog and the Appointments Committee of the Cabinet

Cabinet Ministers

- The cabinet ministers are ranked as the senior-most in the council, second only to the Prime Minister.
- They oversee the strategic and important ministries of the Central government – related to Home Affairs, Finance, Defence, etc. – with the authority to organise and attend meetings and make important policy decisions.

Ministers of State (Independent Charge)

- Ministers of state are junior members of the COM.
- A Minister of State (Independent Charge) is empowered to administer their respective ministry without oversight from cabinet ministers or other members of the Union government.

Ministers of State

- As opposed to a Minister of State (Independent Charge), a Minister of State does not enjoy the foremost ministerial duties over a ministry, but assists a cabinet minister with the same, and is responsible for specific functions as delegated to them by their superior.

- Ministries with crucial mandates such as the Home Ministry, the Ministry of External Affairs, the Health Ministry and the Education Ministry may have two or three ministers of state working with the cabinet minister.

Source:IE

PRADHAN MANTRI AWAS YOJANA

In News

- The Cabinet has decided to further expand the Pradhan Mantri Awas Yojana and construct 3 crore additional rural and urban houses.

About Pradhan Mantri Awas Yojana (PMAY)

- The Government of India has been implementing Pradhan Mantri Awas Yojana since **2015-16** to provide assistance to the eligible rural and urban households for construction of houses with basic amenities.
 - ◆ All the houses constructed under PMAY are provided the other basic amenities such as Household Toilets, LPG connection, Electricity connection, Functional Household Tap Connection etc. through convergence with other schemes of Central Government and State Governments.
- It has two components, PMAY-U for the urban poor and PMAY-G and PMAY-R for the rural poor.

PMAY-Urban:

- **The Ministry of Housing and Urban Affairs** has been implementing **PMAY-U** under ‘Housing for All’ Mission since June, 2015 by giving Central assistance to implementing agencies through States/Union Territories (UTs) for providing all-weather pucca houses with basic civic amenities to all eligible urban beneficiaries.
- It is a demand driven scheme and the Government of India has not fixed any target for construction of houses.
- It is being implemented through four verticals i.e., Beneficiary Led Construction (BLC), Affordable Housing in Partnership (AHP), In-Situ Slum Redevelopment (ISSR) and Credit Linked Subsidy Scheme (CLSS).
- Government of India is providing its fixed share as Central Assistance of ₹1.0 lakh under ISSR, ₹1.5 lakh for AHP and BLC verticals of PMAY-U.

PMAY-Gramin:

- In order to achieve the target of "Housing for All" in rural areas, the Ministry of Rural Development is implementing PMAY-G with effect from 1st April 2016 to provide assistance to eligible rural households with an overall target to construct 2.95 crore pucca houses with basic amenities by March, 2024.
- Under PMAY-G, beneficiaries are provided financial Assistance of Rs.1.20 lakh in plain areas and Rs.1.30 lakh in hilly States (including North-eastern States and UTs of Jammu & Kashmir and Ladakh), difficult areas and Integrated Action Plan (IAP) districts. Additional assistance of Rs.12,000/- is extended for construction of toilets.

Importance and Progress

- In a nation where millions dream of owning a home, the Pradhan Mantri Awas Yojana (PMAY) emerges as a beacon of hope.
- It stands as a testament to the government's commitment to providing affordable housing and improving the quality of life.
- It is not just a housing scheme but a mission to empower citizens with a sense of dignity and security.
- Under PMAY, a total of 4.21 Crore houses have been completed for the eligible poor families under the housing schemes in the last 10 years.

Source:IE

NOTIFIED DISASTERS IN INDIA**Context**

- There have been calls for heat waves to be declared a notified disaster under the Disaster Management Act, 2005.

About the Notified Disasters in India

- India, a country with diverse geographical features, is prone to various types of disasters.
- The **Disaster Management Act (2005)** enacted in the wake of the Orissa super-cyclone (1999) and the Tsunami (2004), defines a **disaster as a 'catastrophe, mishap, calamity or grave occurrence' arising from 'natural or man-made causes'**.
- Currently, there are 12 categories of disasters which are notified under this Act.

- These are **cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, and frost and cold waves.**

Funds under DMA (2005)

- **Disaster Management Act (2005)** allows states to draw money from the **two funds**, namely the **National Disaster Response Fund (NDRF)** and **State Disaster Response Fund (SDRF)** at the national and state level respectively.
 - The **states first utilise the funds** available in the SDRF, and only if the magnitude of the disaster is unmanageable with the SDRF, states seek the money from the NDRF.
- While the **entire money of the NDRF** comes from the Central Government, States contribute **25% of the money in the SDRF (10% in case of special category states)**, the rest comes from the Centre.
 - The money in these funds cannot be used for any purpose other than response and management of notified disasters.

Heatwaves in India

- A Heat Wave is a **period of abnormally high temperatures**, more than the normal maximum temperature that occurs during the summer season in the **North-Western parts of India.**
- The extreme temperatures and resultant atmospheric conditions adversely affect people living in these regions as they cause physiological stress, sometimes resulting in death.

Criteria for Heat Waves (as per the IMD)

- Heat waves need not be considered till the maximum temperature of a station reaches **at least 40°C for Plains and at least 30°C for Hilly regions.**
- When normal maximum temperature of a station is less than or equal to 40°C
 - ♦ **Heat Wave:** Departure from normal is 5°C to 6°C
 - ♦ **Severe Heat Wave:** Departure from normal is 7°C or more
- When normal maximum temperature of a station is more than 40°C
 - ♦ **Heat Wave:** Departure from normal is 4°C to 5°C

- ♦ **Severe Heat Wave:** Departure from normal is 6°C or more
- When actual maximum temperature remains 45°C or more irrespective of normal maximum temperature, heat waves should be declared.

Source: IE

NEWS IN SHORT

LIPULEKH PASS

In News

- Indian traders are demanding the resumption of border trade with China through Lipulekh pass which was closed during Covid-19 pandemic.

About Lipulekh Pass

- Lipulekh Pass is located in the **Kumaon region** of Uttarakhand, India, near the tri junction of India, China, and Nepal.
- The pass serves as a route for pilgrims traveling to Kailash Mansarovar in Tibet. It is also one of the important points connecting India and Tibet, along with other passes like Nathu La and Shipki La.
- Nepal claims that the pass lies within its territory, while India argues that it is part of the Indian state of Uttarakhand.
- In 2020, India inaugurated a road connecting Dharchula in Uttarakhand to Lipulekh Pass.

Source: ET

GENERAL ANTI-AVOIDANCE RULE (GAAR)

Context

- Recently, the **Telangana High Court** has ruled against a taxpayer in the matter of the General Anti-avoidance Rule (GAAR).

About the General Anti-Avoidance Rule (GAAR)

- It is an **anti-tax avoidance law** in India, that was introduced **to address tax avoidance** and ensure that those in different tax brackets are taxed the correct amount.
- The GAAR regulations are **based on the Income Tax Act of 1961**, and it was first introduced in the **Direct Taxes Code Bill 2010**.

Gaar

Rules to prevent tax avoidance will be rolled out as planned from

ON TARGET		
Gaar not to be invoked if tax treaty with a country has anti-avoidance rule	Gaar not be invoked just because investor located in tax efficient jurisdiction	Rules will not apply to investment before April 1, 2017
Taxpayer free to select method of implementation	Gaar not to apply if investor is not located in place just for tax reasons	Gaar not to apply in court-sanctioned arrangements

ADEQUATE SAFEGUARDS

Gaar proposals to be vetted by commissioner/principal commissioner

In second stage, it will go to approving panel headed by a high court judge

- It is a **provision of last resort** that is capable of being invoked by a tax authority to strike down **unacceptable tax avoidance practices** that would otherwise comply with the terms and statutory interpretation of the ordinary tax law.

Key Features

- GAAR investigates the imposition of taxes on those types of arrangements that are primarily aimed to avail a tax benefit or those that don't have any commercial substance.
- It can be **invoked if** some good business principles are **not followed by tax avoidance objectives**.

International Perspective

- Many countries, like Canada and South Africa, have codified the doctrine of '**substance over form**' through a GAAR – type ruling.
- The introduction of GAAR continues to be topical in many other jurisdictions such as India and Poland.

Source: ET

XYLITOL

In News

- Recent study mentioned that the popular **artificial sweetener Xylitol** is linked to higher cardiovascular issues including heart attack and stroke.
 - ♦ In 2023, the study found similar results for another low-calorie sweetener called **erythritol**.

About Xylitol

- Xylitol is a natural sugar alcohol found in plants, including many fruits and vegetables. It has a sweet taste and is often used as a sugar substitute.
- Xylitol is a white crystalline solid that is soluble in water. The artificial sweetener commonly used in toothpaste and sugar-free chewing gum.
- It can be found naturally or artificially produced.

Source: TOI

MICROALGAE

In News

CSIR-Indian Institute of Chemical Technology (IICT) scientists identified **microalgae** as a potential protein supplement.

About Microalgae

- Microalgae are a group of **autotrophic microorganisms** that live in **marine, freshwater and soil ecosystems** and produce organic substances in the process of photosynthesis.
- They are a diverse group of microscopic aquatic organisms.
- They differ from plants in basic ways.
 - ◆ For instance, they grow in water instead of on land and absorb nutrients directly instead of via roots.
 - ◆ While some microalgae are seen as harmful, others provide useful products.

Outcomes of Recent study

- Scientists have spotlighted the potential of **Chlorella Growth Factor (CGF)** as an ideal ingredient for a wide range of food and feed applications.
- CGF presents a promising alternative protein source that can significantly contribute to human and animal diets.
- Its beneficial properties extend beyond basic nutrition, promoting overall health, immunity, and well-being.
- Already, inclusion of CGF in poultry diets has been shown to enhance egg quality, indicating its potential as a superior protein supplement in animal nutrition.

Do you know ?

- CGF is a protein-rich extract derived from the microalgae '**Chlorella sorokiniana**'.
- It is said to be found exclusively in the cell nucleus of '**chlorella**', is produced during **photosynthesis** and is laden with a variety of beneficial components, including peptides, amino acids, nucleotides, polysaccharides, glycoproteins, vitamins, and minerals.
- It is particularly rich in **essential amino acids**, which are vital for human and vertebrate health but cannot be synthesised by their bodies.

Source:TH

VETERINARY COUNCIL OF INDIA

Context

- Recently, the Department of Animal Husbandry and Dairying declared the names of elected members to the **Veterinary Council of India**.

About the Veterinary Council of India

- It is a **statutory body** established under the **Indian Veterinary Council Act 1984**, and was **first constituted** through a Gazette notification in 1989.
- It is a pivotal institution in the field of veterinary science and animal husbandry in India, playing a crucial role in maintaining the health and welfare of animals.
- The **Members of the Council** were nominated as per the provisions of **Section 3 of the Act**.
- It receives **100% grants-in-aid** from the Department of Animal Husbandry and Dairying, Ministry of Fisheries Animal Husbandry and Dairying.

Role and Responsibilities

- The primary role of the VCI is to regulate veterinary practice and maintain the register of veterinarians.
- It is responsible for upholding the standard of **veterinary education in India**, i.e. Bachelor of Veterinary Science & Animal Husbandry (BVSc & AH) Degree course.
- It prescribes minimum standards of veterinary education required for granting recognized veterinary qualifications by veterinary institutions.

Source: PIB

ORIENTAL DESPOTISM

In Context

- The concept of Oriental despotism has shaped the modern European mind and its sense of civic identity and responsibility.

About Oriental despotism

- The concept of Oriental despotism evolved from its origins in Greek thought, through mediaeval adaptations and Enlightenment ideas, to explain power in agrarian societies across Asia.
- It is an idea intertwined with European culture, greatly impacted by travel literature.

- It can be traced back to **Greek** thought, where terms like “despot” and “despotism” were used to establish Greek identity and superiority over “barbarous” nations, notably the Persians.
- It was Aristotle who provided a clearer and more theoretical foundation for the concept in his book Politics.
 - ♦ He regarded despotism as a **legitimate and hereditary** form of monarchy, particularly suitable for societies perceived as more barbarous, such as those in Persia, where the monarch wielded absolute power, due to people’s inclination towards subordination.
 - However, this differed significantly from tyranny, which was illegitimate and against the wishes of the subjects.

Various interpretations

- Mediaeval authors and theorists cited Oriental societies as examples of **tyrannical governments to justify political struggles** in their own countries.
- The **Ottoman Empire**, a centralised monarchical government, became the new example used to explain despotic rule, contrasting with the decentralised European monarchies.
- German philosopher **Georg Wilhelm Friedrich Hegel** used it to understand the Asiatic mode of production.
 - ♦ He viewed Oriental despotism as the initial stage of historical development, where individual autonomy was limited, and the universal spirit was concentrated in a single free person — the despot.
- **German philosopher and socialist Karl Marx** argued that despotism persisted due to the absence of individual property rights in the Asiatic mode of production, where the sovereign alone owned the land and believed that the geography of Asiatic countries reinforced their political systems.

Source:TH

GANDHI SAGAR SANCTUARY

In News

The Madhya Pradesh government has completed preparations for its ambitious **cheetah reintroduction project** at **Gandhi Sagar Wildlife Sanctuary**, which is slated to be the second home for cheetahs in India after Kuno National Park

About Gandhi Sagar Sanctuary

- Gandhisagar sanctuary is located on western border of Malwa plateaus along the banks of the mighty Chambal river.
- Total area of Gandhi Sagar Sanctuary is 368.62 sq. km
- It spreads into two districts Mandsaur and Neemuch
- Its Northern boundary is the Interstate boundary of M.P. and Rajasthan.
- It is known for some rare wildlife species like Wild Dogs (Dholes), Chinkara, Leopard, Otter, Muggur crocodile.

Source:IE

DONANEMAB: A NEW ALZHEIMER’S DRUG

In News

- The FDA unanimously voted that the benefits of **Donanemab** outweigh the risks in treating Alzheimer disease.

About Donanemab

- The drug, made by Eli Lilly is a monoclonal antibody that **targets amyloid beta protein plaques** in the brain, one of the defining features of Alzheimer’s disease.
- Donanemab aims to remove these plaques and slow the **progression of the disease**. However, it has side effects such as **brain swelling or bleeding**.
- Other similar amyloid-fighting drugs approved by the FDA are **Leqembi and Biogen**.

Alzheimer Disease

- Alzheimer’s disease is a **progressive neurodegenerative disorder** that affects millions worldwide.
 - ♦ An estimated **7.4% of adults aged 60 and older in India** live with dementia, translating to approximately 8.8 million individuals.
- It primarily targets the brain, leading to a range of debilitating symptoms that impact memory, cognition, behavior, and overall daily functioning.
- Alzheimer’s disease is the leading cause of **dementia**, accounting for 60-80% of cases. It poses a significant **burden on individuals, families, and healthcare systems**.

- There is **no cure for Alzheimer's disease** at present, there are several treatment options available that can help manage symptoms.

Source: IE

SCHENGEN COUNTRIES

In News

- A 12 per cent hike in the Schengen visa fee comes into effect. The EU attributes the increase to both inflation and growing civil worker wages.

About

- Schengen visa allows the holder to travel freely in the Schengen Area comprising 29 European countries, for short stays of a maximum of 90 days in any 180-day period. The visas are not purpose-bound, but they do not grant the right to work.
- The Schengen Area is a zone of 29 European countries that have abolished passport and other types of border control at their mutual borders. The area is named after the **Schengen Treaty**, which was **signed in 1985** and entered into force in 1995.
- The countries in the Schengen Area have a joint agreement on the free movement of people, goods, and services, and have abolished visa requirements for citizens of other Schengen countries.
- Schengen countries account for around **20 per cent of India's outbound traffic**.

Source: IE

APPLE INTELLIGENCE

In News

- Apple unveiled **Apple Intelligence**, its innovative AI platform, at **Worldwide Developers Conference (WWDC) 2024**.

About

- This personal intelligence system utilizes generative AI and user data to provide personalized responses and features.

- Apple Intelligence prioritizes privacy, utilizing **Private Cloud Compute (PCC)** to balance on-device and server-based processing while ensuring data security.

- This AI platform works with all Apple products, like the iPhone, iPad, and Mac. It is designed to seamlessly integrate with iOS 18, iPadOS 18, and macOS Sequoia.

Source: IE

JIMEX – 24

Context

- The bilateral Japan – India Maritime Exercise 2024 (JIMEX 24) commenced at Yokosuka in Japan.

About

- It is the **eighth edition** of JIMEX, since its inception in **2012**.
- The Indian Navy (IN) is being represented by **INS Shivalik** and the Japan Maritime Self-Defense Force (JMSDF) is being represented by the **Guided Missile Destroyer JS Yugiri**.
- It provides an opportunity to learn from each other's best practices and facilitates operational interactions between India and Japan.
- The exercise also reaffirms their shared commitment towards maritime security in the Indo-Pacific region.

Other exercises between India and Japan

- **Dharma Guardian**: Bilateral exercise between the Indian Army (IA) and the Japan Ground Self Defence Force (JGSDF).
- **Veer Guardian**: Bilateral exercise between the Indian Air Force (IAF) and the Japan Air Self Defence Force (JASDF).
- **Malabar Exercise**: Multilateral exercise between the navy's of India, Japan, USA and Australia.

Source: PIB

