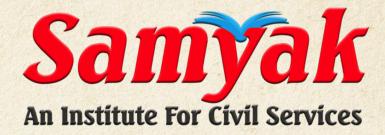


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Geography

- 1. Bangladesh's St Martin's Island Indian Express
- 2. Union Minister Shri C.R. Paatil launches Version 2.0 of 'FloodWatch India' mobile app; to enable extensive and detailed overview of flood conditions across the country PIB

Society

3. Prerana Programme - PIB

Polity

4. Amrit Bharat Station Scheme - PIB

World Affairs

5. The Geneva Conventions at 75 - Indian Express

Sci and Tech

- 6. ISRO's SSLV-D3 successfully launches earth observation satellite EOS-08 into orbit The Hindu
- 7. MICROWAVE OVENS HOST THRIVING COMMUNITIES OF MICROBES: STUDY Indian Express
- 8. Indian astronomers find new method to predict amplitude of next solar cycle The Hindu
- 9. Dengue control: the unrealised promise of Wolbachia-infected mosquitoes The Hindu
- 10. What is the drug Captagon, and how is it linked to Germany? Indian Express
- 11. Hidden dangers of irrational use of antibiotics on microbiome The Hindu
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Environment

- 13. How can traffic which causes air pollution be controlled? The Hindu
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- 16. Earth's oldest, tiniest creatures are poised to be climate change winners The Hindu
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- 18. Corbett Tiger Reserve runs awareness campaign to celebrate World Elephant Day The Hindu
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<u>Miscellaneous</u>

- 20. Why scarce rainfall restricted the passage of ships through Panama Canal Indian Express
- 21. 70th National Film Awards The Hindu



Geography

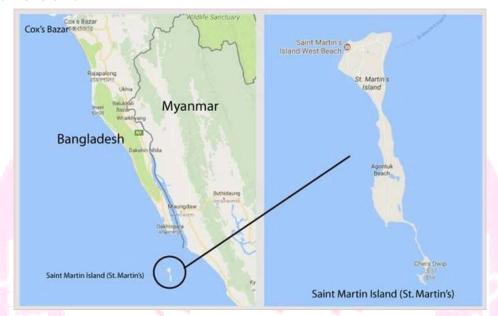
1. Bangladesh's St Martin's Island - Indian Express

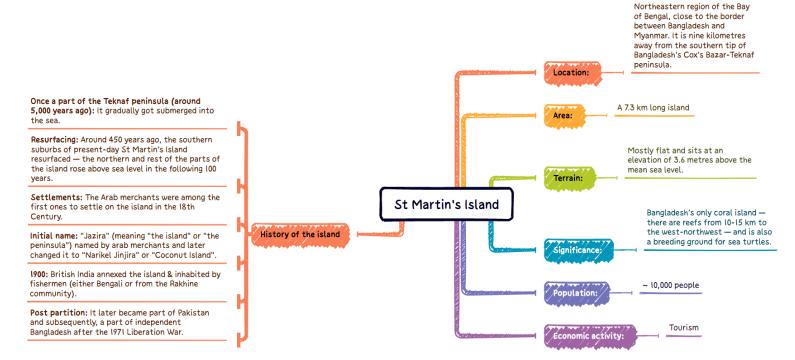
Relevance: Salient features of World's Physical Geography

Context

Hasina recently allegedly said she could have continued to remain in power if she had given Bangladesh's "St Martin's Island and Bay of Bengal to America".

St Martin's Island







With reference to river Teesta, consider the following statements: (2017)

- 1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
- 2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
- 3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

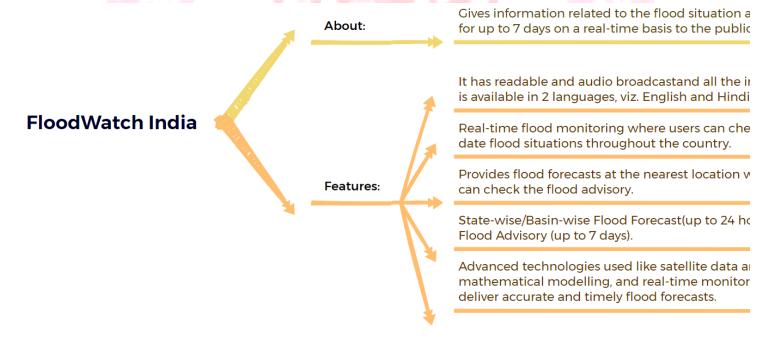
- A. 1 and 3 only
- B. 2 only
- C. 2 and 3 only
- D. 1, 2 and 3
- Union Minister Shri C.R. Paatil launches Version 2.0 of 'FloodWatch India' mobile app; to enable extensive and detailed overview of flood conditions across the country - PIB

Relevance: Important Geophysical Phenomenon

Context

Union Minister for Jal Shakti recently launched the Version 2.0 of the 'FloodWatch India' mobile application developed by the Central Water Commission (CWC), in New Delhi recently.

FloodWatch India





Society

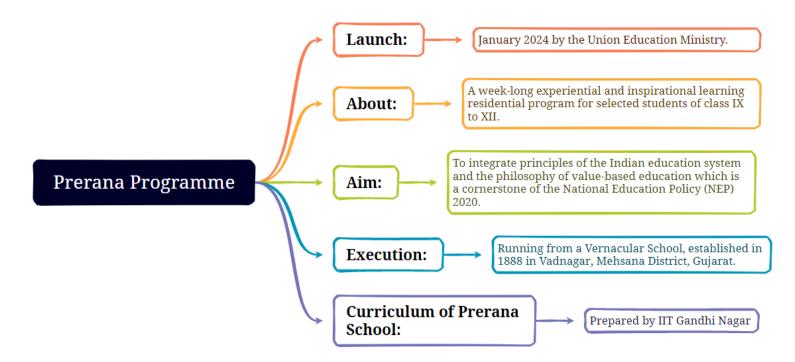
3. Prerana Programme - PIB

Relevance: Salient features of Indian Society

Context

Union Minister for Education recently interacted with the students, teachers, and parents of PM SHRI Schools and alumni of Prerana Programmes who were specially invited to attend the 78th Independence Day Celebrations.

Prerana Programme



Which of the following provisions of the Constitution does India have a bearing on Education? (2012)

- 1. Directive Principles of State Policy
- 2. Rural and Urban Local Bodies
- 3. Fifth Schedule
- 4. Sixth Schedule
- 5. Seventh Schedule

Select the correct answer using the codes given below:

- A. 1 and 2 only
- B. 3, 4 and 5 only
- C. 1, 2 and 5 only
- D. 1, 2, 3, 4 and 5



Polity

4. Amrit Bharat Station Scheme - PIB

Relevance: Government Policies and Interventions for Development in various sectors

Institute for Civil Services

Context

Modern passenger amenities like clean and hygienic waiting areas, restrooms, Special amenities for the disabled, and food and beverage outlets.

Improved traffic circulation creating separate entry and exit points for passengers and vehicles, widening roads and footpaths, and providing adequate parking facilities.

Inter-modal integration- providing seamless connectivity between railway stations and other modes of transport, such as buses, taxis, and autorickshaws.

Upgraded signage - providing clear and visible signage in multiple languages to guide passengers.

Using energy-efficient lighting and appliances.

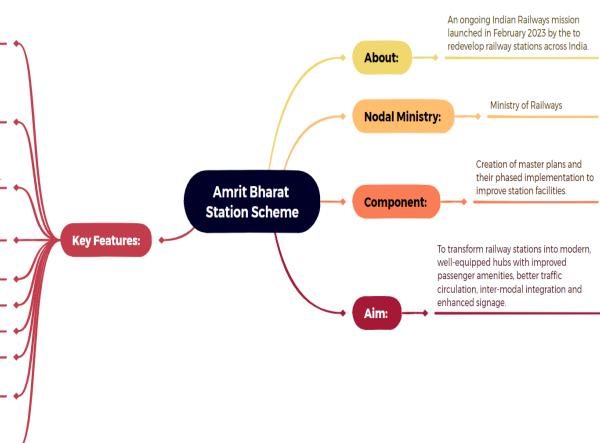
Eco-friendliness:

Rainwater harvesting systems

Green spaces

Ballastless tracks, which reduce noise and vibration

Roof plazas, where available, provide additional space for commercial activities and passenger amenities.





World Affairs

5. The Geneva Conventions at 75 - Indian Express

Relevance: Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests

Context

August 12 marks 75 years since the adoption of the Geneva Conventions in 1949. In theory, these rules of war are universally agreed by every nation. In practice, they are routinely violated everywhere.

Geneva Conventions

- **About:** A set of four treaties which include more than 400 articles, setting out detailed rules for the treatment of prisoners, protecting hospitals and medical staff, allowing humanitarian aid and prohibiting torture, rape and sexual violence.
- Formalisation: 1949 by the United Nations.
- Focus: Treatment of non-combatants and prisoners of war.
- Conventions:

First Geneva Convention	 Protects wounded and sick soldiers on land during war. Applicable on medical and religious personnel, medical units and medical transports. 	
Second Geneva Convention	 Protects wounded, sick and shipwrecked military personnel at sea during war. Replaced Hague Convention of 1907 for the Adaptation to Maritime Warfare of the Principles of the Geneva Convention. 	
Third Geneva Convention	 Prisoners of war. Establishes the principle that prisoners of war shall be released and repatriated without delay after the cessation of active hostilities. 	
Fourth Geneva Convention	 Protects civilians, including those in occupied territory. Concerns the general protection of populations against certain consequences of war, without addressing the conduct of hostilities. 	



Sci and Tech

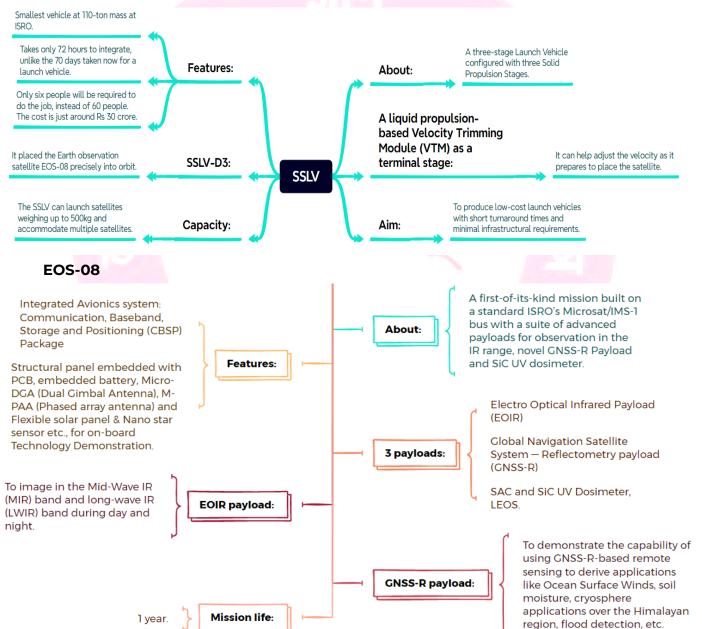
6. ISRO's SSLV-D3 successfully launches earth observation satellite EOS-08 into orbit - The Hindu

Relevance: Achievements of Indians in Science & Technology

Context

The Indian Space Research Organisation (ISRO) successfully launched the third developmental flight of the Small Satellite Launch Vehicle (SSLV) from the Satish Dhawan Space Centre in Sriharikota recently. It also marks the completion of ISRO/Department of Space's SSLV Development Project.

SSLV







Height : 22.7m
Lift-off weight : 17 t
Propulsion : All Solid
Payload mass : 40 kg
Orbit : Low Earth
Orbit



Height :23.5m Lift-off weight : 39 t Propulsion :All Solid Payload mass :150 kg Orbit :Low Earth



Height : 44m Lift-off weight : 320 t Propulsion : 50lid & Liquid Payload mass : 1860 kg Orbit : 475 km Sun Synchronou Polar Orbit

: 475 km Sun Synchronous Polar Orbit (1300 kg in Geosynchronous Transfer Orbit)



Height :49m Lift-off weight :414 t Propulsion :Solid, Liquid & Cryogenic Payload mass :2200 kg

Orbit : Geosynchronous Transfer Orbit



Height : 43.43 m Lift-off weight : 640 t

Propulsion : Solid, Liquid & Cryogenic Payload mass : 4000 kg Orbit : Geosynchronous

Transfer Orbit

PSLVs

- About: Third generation of Indian satellite launch vehicles. first used in 1994.
- **Significance:** It is also called "the workhorse of ISRO" for consistently delivering various satellites into low earth orbits (less than 2,000 km in altitude) with a high success rate.
- Capacity: The PSLV-XL can carry around 1,860 kg of payload.

An Institute fo

GSLVs

- **About:** Instrumental in launching communication satellites in the geosynchronous transfer orbit.
- Higher capacity: It is so because sending satellites deeper into space requires greater power.
- **Engines:** Cryogenic engines consisting of liquid hydrogen and liquid oxygen are used in GSLVs as they provide greater thrust than the engines used in the older launch vehicles.
- Variants:
 - GSLV Mk-II: It can carry satellites weighing up to 2,200 kg
 - **GSLV Mk-III:** It can carry up to 4,000 kg.



7. MICROWAVE OVENS HOST THRIVING COMMUNITIES OF MICROBES: STUDY - Indian Express

Relevance: Science and Technology- Developments

Context

Microwave ovens used in homes, offices, and laboratories host thriving communities of microbes, according to a new study. However, this does not mean that the microbes found in microwaves present a unique or increased risk compared with other parts of kitchens.

Findings of the study

- **747 different genera of bacteria found:** The dominant ones belonged to the Bacillus, Micrococcus and Staphylococcus genera, which commonly live on human skin and surfaces that people frequently touch.
- **Dominance of human-skin bacteria:** They were more abundant in the household and shared-use appliances.
- **Risky bacteria in domestic microwaves:** Klebsiella, Enterococcus, and Aeromonas may pose a risk to human health.
- 8. Indian astronomers find new method to predict amplitude of next solar cycle The Hindu

Relevance: Science and Technology- Developments

Context

Astronomers from the Indian Institute of Astrophysics (IIA) have found a new method to predict the amplitude of the upcoming solar cycle. Besides, their research can also help in space weather forecasting.

Space weather

- Main components: Solar wind, coronal mass ejections, and solar flares.
- **Impact:** They can compress magnetosphere of Earth & trigger geomagnetic storms, which can affect communication & power transmission, damage spacecraft electronics, & threaten lives of astronauts.
- Ways to forecast the strength of the next solar cycle: Theoretical
 calculations based on dynamo models, extrapolations, precursor methods,
 etc.
- **Precursor method:** It uses the value of some measure of solar activity at a specified time to predict the strength of the following solar maximum.

Solar Cycle

• **About:** Our Sun is a huge ball of electrically-charged hot gas. This charged gas moves, generating a powerful magnetic field. The Sun's magnetic field goes through a cycle, called the solar cycle.



- **Impact:** It affects activity on the surface of the Sun, such as sunspots which are caused by the Sun's magnetic fields. As the magnetic fields change, so does the amount of activity on the Sun's surface.
- 9. Dengue control: the unrealised promise of Wolbachia-infected mosquitoes The Hindu

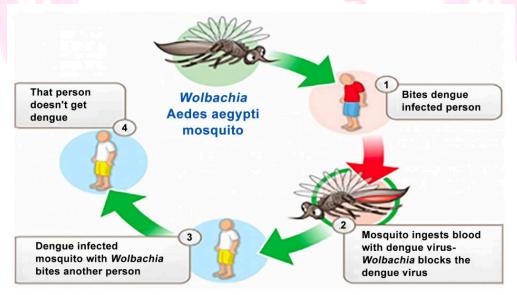
Relevance: Science and Technology- Developments

Context

Innovative vector control methods for Dengue have been studied globally since 2009. This method employs a naturally occurring bacterium (Wolbachia) in fruit flies (Drosophila melanogaster) — many insect species in the wild host Wolbachia, but not the Aedes mosquito.

Wolbachia

- **About:** A bacteria naturally present in many insects.
- Effects:
 - Interfering with the reproduction process of mosquitos through a phenomenon called cytoplasmic incompatibility which reduces the number of viable offspring of the mosquitos.
 - Inhibiting the replication of certain pathogens within the mosquito.
 This reduces the ability of mosquitoes to transmit diseases.
- **Transmission:** As Wolbachia infects the eggs or sperm of its host organism, it is transmitted from one generation of mosquitos to the next. Thus, the bacterium spreads rapidly within the mosquito population.



Wolbachia method

• **Egg Injection:** The bacteria is injected into the eggs of Aedes aegypti mosquitoes & then released into the wild.



- Larval Exposure: The bacteria is introduced into Larvae by exposing it to Wolbachia-infused water.
- Male Releases: It involves releasing Wolbachia-infected male mosquitoes into the wild. These male mosquitos then mate with wild female mosquitos, passing on the bacteria to their offspring.

Pros and Cons

Pros	Cons
 Persistence: Once introduced, this intervention requires minimal intervention to keep it ongoing. Economical: Compared to traditional methods of mosquito control like insecticide spraying, this Method is relatively cost-effective. Limited target: It targets the Aedes aegypti mosquito, and has almost nil impacts on other insect species. Sustainable: By reducing the use of chemicals like insecticides, it protects the environment as well as public health. 	 in controlling all vector-borne diseases. Logistic issues: Implementing and scaling up Wolbachia- based interventions have its own

10. What is the drug Captagon, and how is it linked to Germany? - Indian Express

Relevance: Science and Technology- Developments

Context

Following the record discovery of hundreds of kilos of Captagon tablets in Germany in December 2023, the trial against four men began in Aachen recently. They are alleged to have sold tablets worth more than €58 million (63 million) euros abroad.

Captagon/ Poor man's cocaine

- **About:** A highly addictive amphetamine-type drug, which is produced mainly in Syria.
- Sale: It was commercially sold in several countries until the 1980s and was banned due to fears of its highly addictive nature.
- **Components:** The pill contains fenethylline, a synthetic amphetamine, caffeine, and other stimulants.
- **Ban:** It was made illegal in 1986 in most countries and discontinued in medical markets.
- **Concern:** Addiction issues majorly in Middle East like Jordan, Saudi Arabia, and the United Arab Emirates.



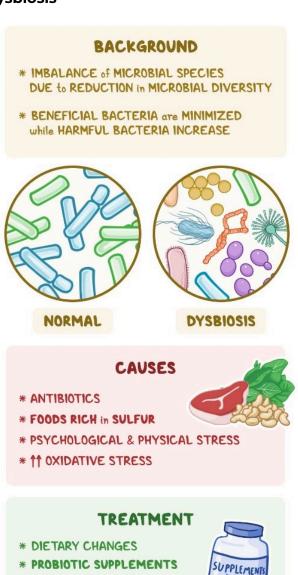
11. Hidden dangers of irrational use of antibiotics on microbiome - The Hindu

Relevance: Science and Technology- Developments

Context

Antibiotics, especially the broad-spectrum ones, can wipe out a large portion of the gut bacteria. This disruption, known as dysbiosis, can have severe and long-lasting effects. Even a single course of antibiotics can produce dysbiosis that lasts for months or even years.

Dysbiosis



* LIFESTYLE MODIFICATIONS

* FECAL MICROBIAL TRANSPLANT

~ HEALTHY DIET ~ EXERCISE

~ QUITTING SMOKING





12. IndiaAl Mission - Indian Express

Relevance: Science and Technology- Developments

project assessment.

A strategic initiative that aims to catalyze AI innovation, democratize computing access, provide startup capital, ensure ethical Al, and About: drive inclusive growth in India's Al ecosystem. IndiaAl Compute Capacity: Creation of a highend Al computing ecosystem with over 10,000 Graphics Processing Units (GPUs). To address the shortage of computing hardware in unlocking opportunities around generative AI IndiaAl Innovation Centre: Development of by subsidizing private companies to establish Al indigenous Large Multimodal Models (LMMs) computing capacity in India and foundational models for various sectors. To establish a comprehensive ecosystem that IndiaAl Datasets Platform: A unified platform catalyzes Al innovation through strategic programs and partnerships across the public to provide seamless access to quality nonpersonal datasets for startups and and private sectors. researchers Drive responsible, inclusive growth of India's Al Aim: ecosystem IndiaAl Application Development Initiative: **IndiaAl Mission** Promotion of Al applications targeting problem statements from various To create highly skilled employment **Key Components:** governmental sectors opportunities to harness the demographic dividend IndiaAl FutureSkills: Expansion of Al To demonstrate the potential of transformative education through undergraduate, master's, technology for societal good. and Ph.D. programs & establishing Data and Al Labs in smaller cities. IndiaAl Startup Financing: Provision of By 'IndiaAl' Independent Business Division **Execution:** streamlined funding access for deep-tech Al under Digital India Corporation. startups to support innovative projects. Safe & Trusted Al: Development of guidelines and frameworks to ensure responsible Al practices, including indigenous tools for





Environment

13. How can traffic which causes air pollution be controlled? - The Hindu

Relevance: Environmental Pollution and Degradation

Context

A recent report stated that India is home to 83 of the 100 most polluted cities in the world. Another report estimated that air pollution led to the deaths of 2.1 million people in India, the second largest numbers after China. Over 99% of the population breathes air that is poorer than the recommended WHO standards.

Estimation: 12% of India's CO2 emissions are due to road transport, of which the vast

Status of air pollution

majority of Particulate Matter (PM) 2.5 emissions are due to heavy vehicles. Impact of PM2.5: Being microscopic, they can reach the deepest parts of our lungs, and spill over to blood, thereby causing a range of Proper implementation of vehicle Status of air pollution respiratory and cardiovascular effects. scrappage policy: This policy is yet to take off in Karnataka for two reasons: Emissions from heavy vehicles: They there are only two scrapyards for the contribute significantly to the emission of entire State and it is voluntary. Nitrogen Oxide (NOx), which contributes to the formation of ground-level ozone, Executive implementation: worsening impacts on air quality and heat. Policymakers must ensure that the guidelines do not remain exemplary in the letter alone. Air pollution Draft Corporate Average Fuel Economy (CAFE) norms: Developed by the Bureau of Proper testing of vehicles at regular Way forward Energy Efficiency's (BEE) for cars in India. intervals to ensure they are within emission limits Commitment to shift from Modified India Driving Cycle (MIDC) to World Light Duty Banning open garbage burning Vehicle Testing Procedure (WLTP): WLTP Measures taken to offers a more accurate & globally harmonised Checking industrial emissions with the combat air pollution measure of a vehicle's actual fuel consumption greatest stringency. and CO2 emissions. Mass transit Vehicle scrappage policy: It mandates that passenger vehicles older than 20 years and commercial vehicles older than 15 years must pass a "fitness and emissions test".

14. Gastrodia indica - Indian Express

Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

Context

A unique orchid species, Gastrodia indica, was recently discovered in Fambonglho Wildlife Sanctuary, Sikkim, which never opens its flower.

Gastrodia indica



- **About:** The first orchid from India that never opens its flower found at an elevation of 1,950–2,100 metres above sea level.
- **Significance:** This is the first cleistogamous species of the genus Gastrodia discovered from India.
- **Sustenance:** Rely entirely on a fungal host for sustenance, lacking chlorophyll and drawing carbon from underground fungi.
- **Distribution:** It thrives in dense, rotten leaf litter and is associated with trees such as Magnolia doltsopa, Acer campbelli, and Quercus lamellose.
- Threats: Limited population and specific habitat requirements.

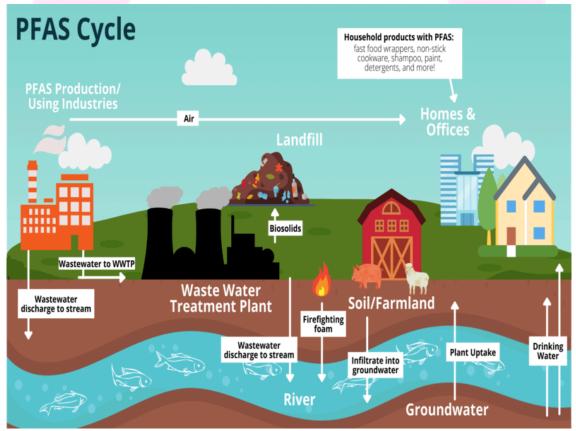
15. Forever chemicals - Indian Express

Relevance: Environmental Pollution and Degradation

Context

In a major breakthrough aimed at managing the long-term environmental impact of anthropogenic activity, American researchers have found a method to be able to trace the origin and the destination of forever chemicals.

Forever chemicals/ Per-and polyfluoroalkyl substances (PFAS)



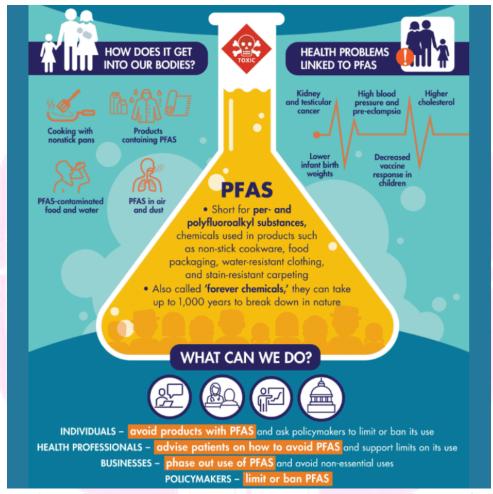
• **About:** Chemicals generally useful in applications such as water-proofing, heat resistance, detergents, food packaging and non-stick technologies.



• **Naming:** They are known to stay in the environment virtually forever and contribute to environmental degradation which adversely impacts the health of all organisms including human beings.

Health risks:

- o Testicular, kidney, liver and pancreatic cancer
- Reproductive problems
- Weakened childhood immunity
- Low birth weight
- Endocrine disruption
- o Increased cholesterol
- o Weight gain in children and dieting adults



16. Earth's oldest, tiniest creatures are poised to be climate change winners - The Hindu

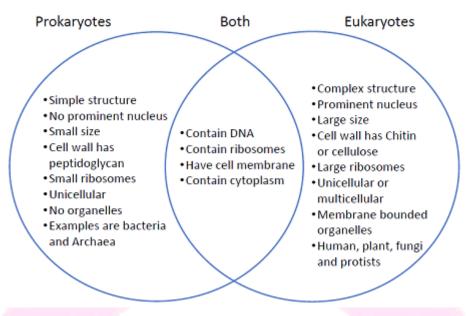
Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

Context

The world's oceans are home to microscopic organisms invisible to the human eye. The tiny creatures, known as "prokaryotes", comprise 30% of life in the world's



oceans. A study found prokaryotes are remarkably resilient to climate change – and as a result, could increasingly dominate marine environments.



17.3 more wetlands added to the list of Ramsar sites - PIB

Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

Context

The three new sites included are Nanjarayan Bird Sanctuary and Kazhuveli Bird Sanctuary in Tamil Nadu and Tawa Reservoir in Madhya Pradesh.

New Ramsar sites

Nanjarayan Bird Sanctuary	Location: North-eastern region of Uthukuli Taluk of Tiruppur District in Tamil Nadu.
Kazhuveli Bird Sanctuary	 About: The 16th bird sanctuary in Tamil Nadu, it is a brackish shallow lake located on the Coromandel Coast in Villupuram district, North of Significance: One of the largest wetlands in peninsular India. Lies in the Central Asian Flyway and is an important stopover site for migratory species of birds.
Tawa Reservoir	About: Largest protected area in the state of Madhya Pradesh constructed at the confluence of the Tawa and Denwa rivers.



18. Corbett Tiger Reserve runs awareness campaign to celebrate World Elephant Day - The Hindu

Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

- **Location:** Foothills of the Himalayas in Uttarakhand, spread over three districts, viz., Pauri, Nainital and Almora.
- Establishment:

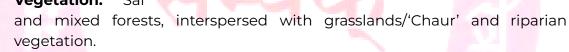
First National Park in India, established in 1936.

- Initial name:
 Hailey National
 Park
 (rechristened in 1957).
- Area: 1288.31 sq. km.
- Rivers:

Ramganga, Pallaen and Sonanadi

Sonanadi

• Vegetation: Sal



• Fauna: Tigers, elephants, co-predators (leopards, small carnivores), ungulates (sambar, hog deer, spotted deer), birds, reptiles (gharials, crocodile), and fishes.

19. Chandaka Wildlife Sanctuary - Indian Express

Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

- Location: Khurda district of Odisha and represents the north-eastern limits of Eastern Ghats.
- Designation: It became a sanctuary in 1982.
- **Climate:** Tropical with three well-marked seasons i.e. summer, Rainy season and winter.
- **Vegetation:** Semi-evergreen forest zone but the interplay of biotic factors has changed the original character of the vegetation.



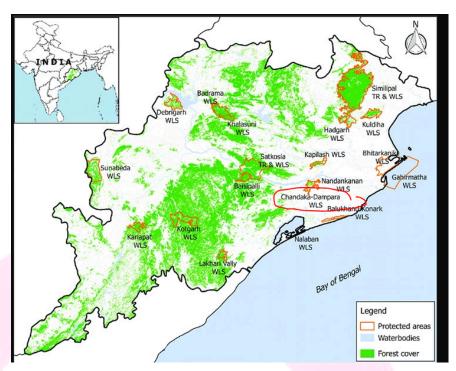


• Flora:

Dhaman,
Bankapasia,
Jamu,
Gandhana,
Kansa,
Kusum,
Marua, Sidha,
Karanja,
Thorny
bamboo etc.

• Fauna:

Elephants,
Chital,
Barking Deer,
Wild Boar,
Rhesus
Monkey,
Pangolin,



Sloth Bear, Indian Wolf, Hyena and other mammals.





Miscellaneous

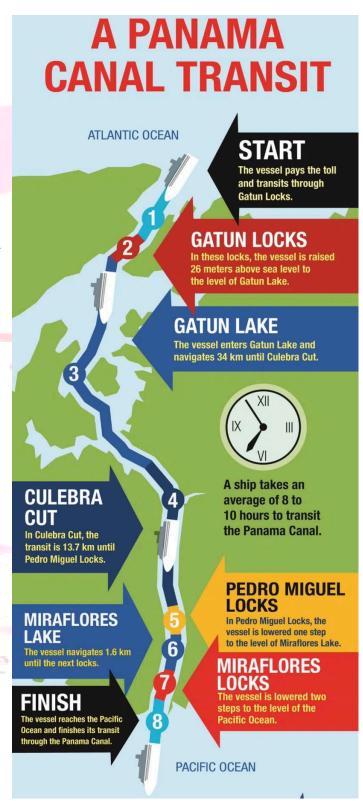
20. Why scarce rainfall restricted the passage of ships through Panama Canal - Indian Express

Context

The Panama Canal, connecting the Atlantic and Pacific Oceans through the Isthmus of Panama, was opened to ships 110 years ago. Today, it faces an existential threat

Panama Canal

- About: shortcut for ships travelling between the Atlantic to the Pacific Oceans by cutting through the Isthmus of Panama in Central America.
- Length: 82-km canal
- **Significance:** It saves approximately 12,600 km in a trip between New York and San Francisco, and is one of the most important shipping lanes in the world.
- Construction: The canal was built by the United States between 1904 and 1914, and it was officially opened on August 15, 1914.
- Ownership: Owned and administered by the Republic of Panama since the oversight of the Canal was transferred from the United States to Panama in 1999.
- **Threats:** While more 36 to 38 ships pass through the canal each day on average, last December,





traffic had dropped to as low as 22 ships a day, with more than 160 ships stuck in anchor on both sides of the canal.

• **Reason:** Drop in the water levels of Lake Gatun, the artificial reservoir key to the Panama Canal system's operation, due to a drought.

Isthmus

- **About:** A narrow strip of land connecting two larger land masses which is bounded by water on two sides.
- Origin: From the Greek word isthmós which means "neck."

21. 70th National Film Awards - The Hindu

Context

The National Film Awards for 2022, announced recently, was dominated by regional movies, with Aattam (The Play) in Malayalam being adjudged the Best Feature Film. Rishab Shetty won the Best Actor award for his role in Kantara (Kannada), and Nithya Menen and Manasi Parekh shared the Best Actress award for Thiruchitrambalam (Tamil) and Kutch Express (Gujarati) respectively.

Major awards given

- Best Direction: Sooraj R. Barjatya for Uunchai: Zenith (Hindi).
- Best Supporting Actor: Pavan Raj Malhotra for Fouja (Haryanvi)
- Best Supporting Actress: Neena Gupta Uunchai: Zenith
- Best debut film: Fouja
- Best Hindi Film: Gulmohar
- Best Lyrics: Naushad Sadar Khan for Fouja.
- Best Music Director (background music): A.R. Rahman for Mani Ratnam's Ponnyin Selvan-Part 1 (Tamil)
- Best Music Director (songs) award: Pritam
- Best Male Playback Singer: Arijit Singh for the song, "Kesariya"
- **Best Female Playback Singer:** Padma Shri awardee Bombay Jayashri for "Chaayum Veyil", a song in Saudi Vellaka CC 225/2009
- Best film in the Animation, Visual Effects, Gaming & Comic category: Brahmastra-Part 1: Shiva
- Best Non-Feature Film: Ayena: Mirror (Hindu/Urdu)

