



## Cooling Earth with Moon Dust

### ❖ Context

- Recently, A group of US scientists proposed an **unorthodox scheme to combat global warming** by creating large clouds of Moon dust in space to reflect sunlight and cool the Earth.

### ❖ Key Highlights:

- In their plan, they would **mine dust on the Moon** and shoot it out towards the Sun.
- The **dust would stay between the Sun and Earth** (Lagrange point) for around a week, making sunlight around 2% dimmer at Earth's surface, after which it would disperse and they would shoot out more dust.
- **Lagrange point**- it's a point in space where the earth's and the Sun's gravitational fields cancel each other out.
- **Solar Radiation Management (SRM)** : Proposed measures to cool Earth by reducing the amount of sunlight reaching the surface are often called "solar geoengineering" or "solar radiation management".
- **Reason for Choosing Moon Dust**
  - The most-discussed method involves **injecting a thin layer of aerosol particles** into Earth's upper atmosphere.
  - It is likely to affect rainfall and drought patterns, & may have other unintended consequences such as damage to the ozone layer.
  - Moon dust in space should avoid these pitfalls, as it would leave our atmosphere untouched.
  - Moon dust is plentiful, and launching dust clouds from the Moon's lower gravity would require substantially less energy than similar launches from Earth.

- **Concerns** : The cool summer will lead to widespread drought across the planet, send crop yields plummeting, leading to disease and starvation.
  - Many climate models have confirmed that dimming the amount of incoming sunlight with stratospheric aerosols will have similar outcomes.
- **Aerosols** : Atmospheric aerosols are **suspensions of liquid, solid, or mixed particles** with highly variable chemical composition and size distribution.
  - Their variability is due to the numerous sources and varying formation mechanisms.
  - **Source** : Aerosol particles are either emitted directly to the atmosphere (primary aerosols) i.e. sea spray, mineral dust, and volcanoes Or.
    - Produced in the atmosphere from precursor gases (secondary aerosols).
  - **Impact** : All atmospheric aerosols scatter incoming solar radiation.
    - It has a **cooling effect**, by enhancing the total reflected solar radiation from the Earth.
    - A few aerosol types can also absorb solar radiation.
    - It has a **warming effect**.

## India's UPI And Singapore's PayNow Integrated

### ❖ Context

- India's Unified Payments **Interface (UPI)**, and its equivalent network in **Singapore called PayNow**, was **integrated** to enable faster remittances between the two countries at a competitive rate.



### ❖ Key Highlights:

- The project to link both the fast payment systems was initiated in **September 2021**.
- Project aimed to **facilitate faster, more efficient and transparent cross-border transactions** relating to trade, travel and remittances between the two countries.
- Reserve Bank of India's Governor and the Monetary Authority of Singapore's (MAS) Managing Director **launched the new linkage**.

### ❖ What Are UPI And PayNow?

- **UPI** is India's mobile-based fast payment system, which facilitates customers to make round-the-clock payments instantly, using a **Virtual Payment Address (VPA)** created by the customer.

#### HOW S'PORE-INDIA UPI WORKS

Indian residents can transfer to and from Singapore residents using UPI with the platform's integration with PayNow. Similarly, users of PayNow in Singapore can transfer funds from India. Such partnerships are likely to be extended to other countries as well. Here's how these global UPI payments will work...

<p><b>1 For what purposes can the remittances be sent or received?</b> Currently, only person-to-person (P2P) remittances for "maintenance of relatives abroad" &amp; "gift" are allowed</p> <p><b>2 Who can send and receive transactions?</b> Accountholders of ICICI Bank, Indian Bank, Indian Overseas Bank and SBI can send and receive funds. Axis and DBS customers can receive funds</p> <p><b>3 Which platforms or apps can be used?</b> Customers can use Axis Pay, Digibank, ICICI iMobile, IndOasis, BHIM IOB Pay and BHIM SBI Pay apps. One can also send money through</p>	<p>net banking in ICICI Bank and IOB, while Indian Bank and SBI have integrated UPI remittances on their apps too</p> <p><b>4 Which are the participating entities in Singapore?</b> DBS Bank and Liquid group customers can receive funds using their mobile number</p>	<p><b>5 Will third-party UPI apps work for remittances?</b> Just the UPI ID registered with the bank where the account is held can be used. Participating banks will be rolling out an update in their respective UPI apps in a phased manner, and customers will have to update their UPI app to enable the global remittances feature</p> <p><b>6 What is the current transaction limit?</b> There is a daily transaction limit of Rs 60,000 (around 1,000 Singapore dollars) currently for undertaking cross-border remittance transactions through the UPI-PayNow linkage</p>
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- It eliminates the risk of sharing bank account details by the remitter. UPI supports both Person-to-Person (P2P) and Person-to-Merchant (P2M) payments and it also enables a user to send or receive money.
- **PayNow is a fast payment system in Singapore.** It enables peer-to-peer funds transfer service, available to retail customers through participating banks and Non-Bank Financial Institutions (NFIs) in Singapore.
- It allows users to send and receive instant funds from one bank or e-wallet account to another in **Singapore by using just their mobile number, Singapore National Registration Identity Card (NRIC)/Foreign Identification Number (FIN), or VPA.**
- ❖ **What is the UPI-Paynow Linkage?**
  - Cross-border retail payments are **generally less transparent** and more expensive than domestic transactions.
  - The UPI-PayNow linkage is a **significant milestone** in the development of infrastructure for cross-border payments between India and Singapore.

### Face to Face Centres



- It closely aligns with the **G20's financial inclusion priorities** of driving faster, cheaper and more transparent cross-border payments.
- India is chairing the G20 on the rotational membership structure this year. **Singapore, although not a G20 member**, has been invited to participate in the G20 Summits and its related processes from 2010 to 2011 and from 2013 to 2023.
- The project to link both the fast payment systems was initiated in September 2021 to facilitate faster, more efficient and transparent cross-border transactions relating to trade, travel and remittances between the two countries.

### ❖ How Will It Benefit The Citizens Of Both Countries?

- The UPI-PayNow linkage will enable users of each of the two fast payment systems to make **instant, low-cost fund transfers on a reciprocal basis** without a need to get on board the other payment system.
- It will also help the **Indian diaspora in Singapore**, especially migrant workers and students, through the instantaneous and low-cost transfer of money from Singapore to India and vice-versa.
- Of the total inward remittances to India in 2020-21, **the share of Singapore stood at 5.7 per cent**, according to the RBI Remittance Survey, 2021.

## News in Between the Lines

### Teja Chilli



#### ❖ Context

- The **Teja Chilli of Telangana** is the most popular chilli in many countries.
- Despite high international demand, the farmers of **Teja Chilli are facing heavy losses**.

#### ❖ About Teja Chilli:

- The chilli is a **sub-variety of Guntur Chillies**.
- Of all the Guntur Chilli varieties, the Teja Chilli is the finest.
- Other Guntur Chilli varieties are **Madhubala, Bedki, Roshni, Ankur, etc.**
- **Khammam district of Telangana** is the largest producer of Teja variety of red chilli.
- Teja variety of red chilli is being **exported to China, Bangladesh and a few other south Asian countries** from Khammam mainly through the Chennai port.
- The Teja Chilli is the **major ingredient of Oleoresin** :
  - Oleoresin is a chilli extract used in food processing units in Asia.
  - Demand for Oleoresin increases the demand for Teja chilli in Asia.
- **Uses** :
  - Teja Chilli is famous for its **culinary, medicinal and other wide-ranging uses**.
  - The paste extracted from the pungent fruit is also in demand for its use as a protective layer beneath ships in some of the Asian countries.

### Autism Spectrum Disorder (ASD)



#### ❖ Context

- Differences in gut microbiome composition have been implicated in several diseases, including autism, Crohn's disease, and celiac disease.

#### ❖ Autism Spectrum Disorder (ASD):

- Autism spectrum disorder (ASD) is a **developmental disability caused by differences in the brain**.
- 'Autism spectrum disorder (ASD) is the term for a group of neurodevelopmental disorders.
- Researchers are yet to fully understand the aetiology of ASD.
  - Aetiology is the study of the factors that cause a condition or disease.
- However, they are beginning to find that a disorder in the gut-brain axis could have a prominent part.
- According to the WHO, **ASD affects one in 100 children**.
- Children with ASD have impaired social interactions, lack verbal and nonverbal communication skills, and display restricted and repetitive behaviours.
- These characteristics **can adversely affect one's cognitive abilities and, over time, diminish one's quality of life**.
- A relatively under-researched aspect of ASD is the gastrointestinal problems associated with a subset of children with ASD.
- Some anecdotal evidence indicate, strongly in some cases, the presence of various gastrointestinal problems, like constipation, diarrhoea, flatulence, and bloating, among others, in children with ASD.
- At present, there are **no known cures and therapeutic interventions available** to treat or reverse ASD.

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## Traditional Knowledge Digital Library



### ❖ Context

- The **Eurasian Patent Organization (EAPO)**, Moscow and the **Council of Scientific and Industrial Research (CSIR)** entered into cooperation on the Traditional Knowledge Digital Library (TKDL) Access.

### ❖ About TKDL:

- The TKDL database, **first of its kind worldwide**, was established in 2001 by the Government of India, through collaboration between **CSIR and Ministry of AYUSH**.
- The key objective of the TKDL is to prevent the erroneous grant of patents on Indian traditional knowledge (TK) & deter misappropriation of the country's traditional knowledge.
- Currently, the TKDL contains information on over **4.4 lakh formulations and techniques of Indian Systems of Medicine** such as Ayurveda, Unani, Siddha, and Sowa Rigpa as well as Yoga from the traditional texts.
- The TKDL information is presented in a **digitized format in five international languages** including English, German, French, Japanese and Spanish, and its database **is available only to patent offices through TKDL Access Agreements**.
- The TKDL has been **impactful towards protecting Indian TK from misappropriation**, with over 283 patent applications world-over being revoked, amended, withdrawn or abandoned.

## INS Sumedha



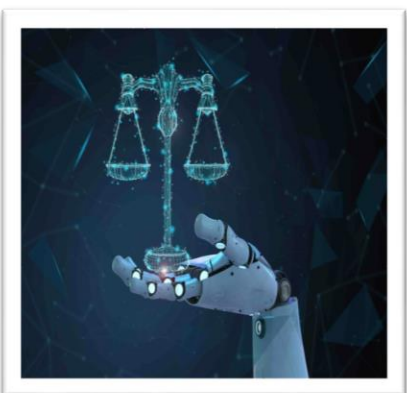
### ❖ Context

- Indian Naval Ship Sumedha arrived at Abu Dhabi, UAE to participate in **NAVDEX 23 (Naval Defence Exhibition) and IDEX 23 (International Defence Exhibition)**.

### ❖ Key Highlights:

- INS Sumedha is the third ship of the indigenously **built Saryu class Naval Offshore Patrol Vessels (NOPV)**.
- Defence relations between India and UAE were **elevated to a 'Comprehensive Strategic Partnership** in January 2017.
- **To enhance interoperability** between the two navies, the inaugural edition of Indian Navy-UAE Navy bilateral exercise, **Zayed Talwar was conducted in 2018**.
- **Indian Naval ships** have made regular port calls at UAE to promote maritime cooperation. **The Deployment of the Sumedha to Abu Dhabi** is a step in the same direction.

## AI Powered Transcription



### ❖ Context

- Recently, The Supreme Court started a first-of-its-kind project to transcribe its proceedings live using Artificial Intelligence (AI).
- The five-judge Bench headed by the CJI is hearing the case related to the political crisis in Maharashtra.

### ❖ AI Powered Transcription:

- AI Transcription is the **use of artificial intelligence to convert speech into a text document, or transcript**.
- The SC transcription is using **Teres**, which is a platform used often for transcribing arbitration proceedings.
- The platform is run by Nomology Technology Private Limited, a Bengaluru based company.
- The transcript will also be shared with lawyers who argued cases for verification, and is likely to be uploaded on the SC website every evening.
- **Significance**
  - The transcribing is the second major decision towards **making the court more transparent** after the SC's decision to livestream its proceedings before Constitution Benches.
- **Side Note**
  - In the US, court transcripts are available to litigants and the public.
  - The US Supreme Court provides audio and text transcripts of the proceedings.
  - In the UK, a litigant can ask for a transcript of the court proceedings for a fee if the hearing is recorded.

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## AFSPA Act



### ❖ Context

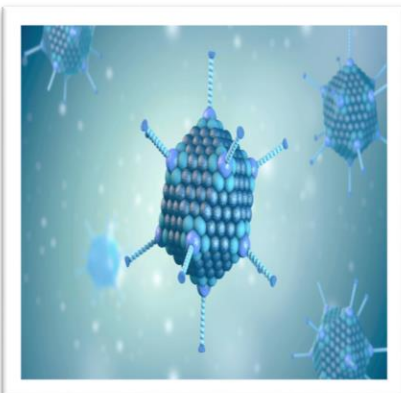
➤ Union Home Minister said that he is hopeful that the **Armed Forces (Special Powers) Act (AFSPA)** will be removed across Nagaland in the next three-four years.

### ❖ About Armed Forces (Special Powers) Act (AFSPA):

- AFSPA allows for armed forces **to be conferred with 'special powers'**, in any region designated as a **'disturbed area'**, either by the Centre or the Governor of a state or the Administrator of a Union Territory.
- Once an area has been designated as a 'disturbed area', the Act provides the armed forces with the following 'special powers' for instance- to **open fire or use force**, to **arrest any person without a warrant**, to enter and search any premises without a warrant and to destroy fortified positions, shelters, structures used as hide-outs.
- Section 6 of the Act, **grants the personnel involved in such operations immunity** from prosecution without sanction.
- It is **currently applicable fully only in 31 districts** and partially in 12 districts of four states in the Northeast Assam, Nagaland, Manipur and Arunachal Pradesh.



## Adenovirus



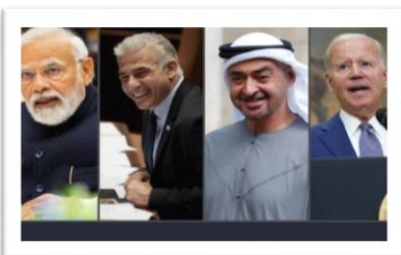
### ❖ Context

➤ Recently, Bengal health authorities have been asked to be vigilant after the state recorded a big spike in adenovirus cases.

### ❖ Adenovirus:

- **About**
  - Adenoviruses are **medium-sized and nonenveloped viruses** that can cause a range of infections mostly, common cold or flu.
  - Researchers have identified around 50 types of adenoviruses that can infect humans.
  - Infections can occur throughout the year but then tend to peak in winter.
- **Symptoms** : Infected people may have relatively mild symptoms like a cold or flu, a fever, and a sore throat, or acute bronchitis, pneumonia, conjunctivitis and acute gastroenteritis, which is an inflammation of stomach.
- **Transmission**
  - The virus is usually transmitted by physical contact with an infected person.
  - It can also be spread through the air (via coughs and sneezes) or a patient's stool; for example, while changing diapers.
- **Treatment**
  - There is currently no specific course of treatment or approved antiviral medication.
  - Since most cases are mild, they are managed by pain-killers or medication to manage symptoms.

## I2U2



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### ❖ Context

➤ UAE to host first I2U2 vice-ministerial meeting. **Senior officials from India, Israel, the United States and the UAE** will meet for the first time to discuss investment opportunities and “pressing issues”.

### ❖ About I2U2:

- **I2U2 is a new partnership** between the governments of India, Israel, the United Arab Emirates and the United States.
- The initiative is considered **a companion project to the Quad**, a four-way partnership joining together Australia, India, Japan and the United States.
- The **evolution of I2U2's goals** is reflective of the US's broader strategy of utilising the G7 to counter China's global geo-economic influence, especially through its Belt and Road Initiative (BRI).
- For India, **the goal is primarily economic**. It lets India bolster trade ties with the Emirates, and gives momentum to negotiations for a trade agreement with Israel.

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