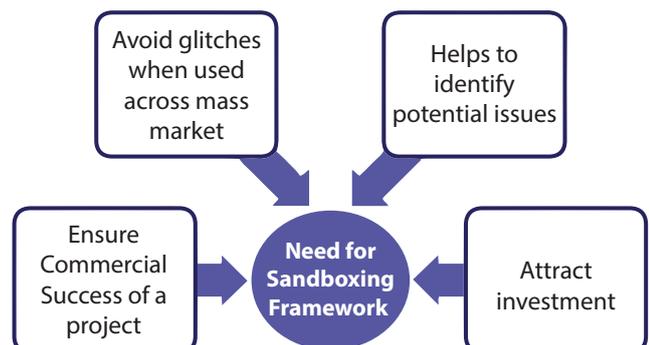## MINISTRY OF AGRICULTURE & FARMERS WELFARE (MOA&FW) LAUNCHES PM KISAN MOBILE APP WITH FACE AUTHENTICATION FEATURE

- **Pradhan Mantri Kisan Samman Nidhi (PM- KISAN)** scheme has **become the first scheme of government to do e-KYC** through facial authentication mobile app.
  - App will **enable farmers to complete their e-KYC process** by scanning their face on mobile phones instead of using OTPs or fingerprints.
  - App **resolve difficulties related to Aadhaar verification and updating bank account details** on PM Kisan Portal through effective use of digital public goods.
- **PM- KISAN scheme,** launched in 2019, is a **Central Sector Scheme with 100% funding from Government of India.**
  - It is one of the world's largest Direct Benefit Transfer (DBT) schemes.
  - Under it, **income support of Rs.6000 per year is provided to all land holding farmer families across country, irrespective of land size, in three equal instalments of Rs.2000** every four months.
- **Face Authentication Process** is used to **uniquely identify a person** based on facial features like distance between eyes, shape of cheekbones etc.
  - It is a **part of a larger biometric security tool** which includes iris scan, fingerprints etc.
  - **Advantages:** Based on facial uniqueness enhances security, Faster process of identification etc.

- Additionally, **Digi Yatra app,** based on **Facial Recognition Technology,** user base crosses the one million marks.
  - Launched by **Ministry of Civil Aviation,** Digi Yatra is conceived to **achieve contactless, seamless processing of passengers at airports.**
  - It facilitates **paperless travel and avoids identity checks** at multiple points in an airport.

TELECOM REGULATORY AUTHORITY OF INDIA (TRAI) RELEASES CONSULTATION PAPER ON ENCOURAGING INNOVATIVE TECHNOLOGIES THROUGH REGULATORY SANDBOX

- Through consultation paper on "Encouraging Innovative Technologies, Services, Use Cases, and Business Models through Regulatory Sandbox in Digital Communication Sector", TRAI proposes a draft sandbox framework.
- Sandbox Framework **allows companies to test and experiment with new products and services in a controlled environment** where they have access to live environment and real time data.
  - It is prominently followed in sectors like FinTech, Banking, Healthcare, Transportation, Energy etc.
  - Countries like **Bahrain, Columbia, and Saudi Arabia have implemented sandboxing frameworks in digital communication sector** to promote innovation and entrepreneurship in sector.
- **Significance of Sandbox Framework**
  - **Helps regulators to obtain first-hand empirical evidence on benefits and risks of emerging technologie**s and their implications.
  - **Provides access to resources under real-time conditions for testing innovative products** and services in digital sector.
  - **Helps in ensuring compliance and identifying potential issues** with the upcoming new product and services before its commercial deployment.
  - **Makes the product more scalable and reliable** when used by mass population.
  - **Helps in minimising capital risks** and encourages investment through trials.

- **Sandboxing framework in digital communication sector in India**
  - **Draft Indian Telecommunication Bill, 2022** promote innovation by facilitating testing through Sandbox.
  - TRAI in **Telecom Commercial Communications Customer Preference Regulations, 2018** set up Regulatory Sandbox for testing implementation of regulatory checks.
  - TRAI in its Consultation Paper on "Leveraging Artificial Intelligence (AI) and Big Data in Telecommunication Sector" emphasized the **importance of Regulatory Sandbox for emerging technologies like AI etc.**

Avoid glitches when used across mass market → **Need for Sandboxing Framework**

Helps to identify potential issues → **Need for Sandboxing Framework**

Ensure Commercial Success of a project → **Need for Sandboxing Framework**

Attract investment → **Need for Sandboxing Framework**

DEFENCE PARTNERSHIPS SIGNED BETWEEN INDIA AND USA

- During India's Prime Minister's first State visit to US, strategic defence partnerships between India and USA were signed namely:
  - ➢ **India - US Defence Acceleration Ecosystem (INDUS-X).**
  - ➢ **MoU** between General Electric (GE) and Hindustan Aeronautics Limited (HAL) **for manufacture of GE F-414 jet engines in India.**
- INDUS-X was launched by U.S. Department of Defense (DoD) and Indian Ministry of Defense (MoD).
  - ➢ INDUS-X **will facilitate joint defence technology innovation,** and co-production of advanced defence technology between industries of two countries, Indo-US joint innovation fund for funding defence start-ups.
  - ➢ It is a **part of US Initiative on Critical and Emerging Technology (iCET)** that opens the door for US to lift existing export control restrictions of defence tech to India.
- **MoU** will **facilitate transfer of critical technologies of GE F-414 jet engine** from GE to HAL and **enable its usage in HAL's Light Combat Aircraft (LCA) Tejas Mk2.**
  - ➢ **It is a 30 years old engine tech that is prominently used in war jets of more than 8 countries.**
  - ➢ So far **only US, Russia, UK, and France have mastered the technology** and with this technology transfer India also gains access to it.

IMPORTANT OUTCOMES OF INDIA USA MEET AT A GLANCE

- Joint statement released by India and USA highlighted the following outcome

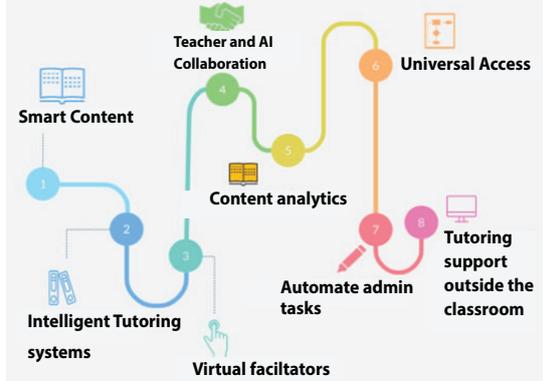|	
Technology Partnership	• NASA and ISRO to develop a **strategic framework for human spaceflight cooperation** by end of 2023. • **MoU on Semiconductor Supply Chain and Innovation Partnership** was signed. US will invest up to $825 million in India over the same. • Introduced **Indo-U.S. Quantum Coordination Mechanism** to facilitate better collaboration among academia and industries.
Clean Energy Transition	• Launched **U.S.-India New and Emerging Renewable Energy Technologies Action Platform** to accelerate cooperation in green hydrogen and other emerging technologies. • U.S Agency for International Development is to **support Indian Railways' to become a "net-zero" carbon emitter** by 2030. • **India joins Mineral Security Partnership (MSP) to advance critical energy minerals** supply chains globally, adhering to environmental and social standards.
Future Generations	• Created new **Joint Task Force of Association of American Universities and leading Indian educational institutions** to expand research and university partnerships.
Consulates	• **US has approved to open two new consulates in Bengaluru and Ahmedabad and India will open its new consulate in Seattle.**

INDIA AGREES TO SIGN ARTEMIS ACCORDS, WORK ON JOINT MISSION WITH NASA

- India has **decided to join Artemis Accords** which **brings like-minded countries together on civil space exploration.**
  - ➢ Also, NASA and ISRO have agreed to launch a joint mission to International Space Station in 2024.
- **NASA,** in coordination with U.S. Department of State, **established Artemis Accords in 2020** together with seven other nations (Australia, Canada, Italy, Japan, Luxembourg, UAE, and UK).
  - ➢ Artemis Accords are a **non-binding** set of principles designed to guide civil space exploration.
  - ➢ **Through Artemis program,** NASA aims to **land first woman and first person of colour on Moon by 2025,** with ultimate goal of **expanding space exploration to Mars and beyond.**
    - ▪ Artemis program means **Acceleration, Reconnection, Turbulence and Electrodynamics of Moon's Interaction with the Sun.**
- **Principles of Artemis Accord:** Use of space for peaceful purposes, transparency, interoperability, Registration of Space objects, Preserving space heritage, De-confliction of space, managing space debris.
- **Significance of move**
  - ➢ Both countries will **share data, technology, and resources, and work together** to ensure safety and sustainability of lunar exploration.
  - ➢ Help in **strengthening the curriculum, facilities, and training designs for Gaganyaan mission.**
  - ➢ India's space companies **could become part of a global supply chain.**

G20 MINISTERS ADVOCATES FOR EQUITABLE, INCLUSIVE USE OF AI IN EDUCATION

- At **G20 Education Ministers' Meet held in Pune**, ministers have agreed to **equitable and inclusive use of Artificial Intelligence (AI) in education and skilling that respects human rights.**
- AI in education refers to the application of AI technologies and techniques to **enhance and improve learning and educational processes.**
- **Significance of AI in Education**
  - **Accelerate progress towards SDG 4** (provide quality education).
  - **Reduce burden from teachers** to focus on pedagogical research.
  - **Reduce regional disparities** in accessibility of education.
  - **Promote innovation and entrepreneurship** from young age.
  - **Facilitate technology assisted learning.**
- **Challenges in adoption of AI in education**
  - **Digital divide due to lack of digital literacy** leads to exclusion of weaker section.
  - **Lack of properly trained human resource** and **training modules** for teachers.
  - **Infrastructure deficit** especially in rural area.
  - **Lack of update in evaluation methodology** in AI based learning.
- **Initiatives taken to promote AI in Education**
  - **YUVAi (Youth for Unnati and Vikas with AI)** for capacity building of students in application of AI.
  - **National Education Policy 2020** recommended introduction of **AI in school curriculum.**

Role of AI in the Education Industry

- Smart Content
- Intelligent Tutoring systems
- Virtual facilitators
- Teacher and AI Collaboration
- Content analytics
- Automate admin tasks
- Universal Access
- Tutoring support outside the classroom

ALSO IN NEWS

Nano Urea

- Indian Farmers Fertiliser Cooperative Limited (IFFCO), multi-state cooperative society, has started **exporting world's first Nano urea** invented and **manufactured indigenously in India to US.**
- **Nano Urea contains nitrogen,** an element **critical for plant development,** in form of granules. It contains nano nitrogen particles of size range (20-50 nm) dispersed in water.
  - **Improved agricultural produce.**
  - **Significant reduction in urea imports,** government subsidies and logistics cost.
  - **Higher shelf life.**
  - **Reduced soil, water and air pollution from urea,** improving quality of underground water and reduction in global warming.

Global Liveability Index 2023

- It was released by **Economist Intelligence Unit's (EIU).**
- Index **ranked 173 cities based on their liveability or living conditions.**
  - **Ranking is based on five factors-** stability, healthcare, culture and environment, education and infrastructure.
  - Most weightage is given to **culture and environment, and stability.**
- **Key findings:**
  - **Vienna, Austria,** has been named the **best city to live** in world for second time in a row.
  - From **India, New Delhi and Mumbai are at 141st position.**

Toolkit to Support Countries After Natural Disasters

- World Bank Group has announced a Comprehensive Toolkit to **help countries respond quickly and effectively** after Natural Disasters.
- **Elements of new comprehensive toolkit include:**
  - **Pausing debt repayments** to focus on meeting urgent needs of rehabilitation.
  - **Redirecting financing** to redirect a portion of their funds for emergency response.
  - **Linking crisis preparedness and financing** to build emergency systems and have quick-disbursing finance available.
  - **Backstopping development projects with private sector support** by providing new types of insurance.
  - **Building enhanced catastrophe insurance without debt** by efficient usage of bond.

Ambubachi mela

- Ambubachi Mela, four day annual fair, begun at **Kamakhya temple** located atop the **Nilachal hills in Guwahati, Assam.**
  - It is celebrated **to mark the annual menstruation of Goddess Kamakhya** (reigning deity).
  - It also marks as an occasion to **promote awareness about menstrual hygiene.**
- **Kamakhya Temple** is **one of the 52 Shakti peeths** or Seat of Shakti followers. It is also considered as **one of the prime seats of Tantric rituals.**

Lab Grown Diamond (LGD)

- Prime Minister LGD to US First Lady during his state visit to US.
- LGD are **developed from a carbon seed placed in a microwave chamber** and superheated into a glowing plasma ball. The process **creates particles that crystallize into diamonds** in weeks.
  - LGDs are **chemically, physically and optically diamond** and thus are difficult to identify as "lab-grown."
  - LGD are **produced through 2 technologies,** namely **High-Pressure High Temperature (HPHT) and Chemical Vapour Deposition (CVD).**
  - **Applications of LGD:** Jewellery, computer chips, satellites, 5G networks etc.
  - Globally, LGD market is **expected to rise to $ 5 billion by 2025** from $1 billion in 2020.

Regenerative Medicine

- Various researches have cast doubt on importance of cord blood in regenerative medicine.
- Regenerative Medicines (Stem Cell Therapy) refers to a **group of biomedical approaches to clinical therapies** that may involve the **use of stem cells.** These approaches **use regenerative capabilities of stem cells.**
  - It is the **process of replacing or "regenerating" human cells, tissues or organs to restore or establish normal function.**
  - Its major examples are **Tissue engineering and Cell therapy.**
  - It has the **potential to solve the issue of huge organ deficit.**

Chiral Bose-Liquid State

- Physicists have discovered a **new phase of matter called "Chiral Bose liquid State".**
- It was discovered **when an engineered quantum machine called 'frustrated machine' with bilayers was brought under the influence of a strong external magnetic field.**
- When quantum matter in chiral bose-liquid state is cooled down to absolute zero (-273.15°C), all electrons present freeze in a very predictable way.
  - There is a **uniformity noticed between all the particles of the state** when disturbed by an external influence.
  - This new state can be used to **understand the quantum world better.**

Personality in news

Florence Nightingale (12 May 1820 – 13 August 1910)

- President of India has **presented National Florence Nightingale awards for 2022 and 2023 to Nurses who provided their exemplary services in each state.**
- **Indian Nursing Council,** a statutory body under Ministry of Health and Family Welfare, **grants Florence Nightingale Award to recognise the contribution of healthcare workers since 1973.**
- Florence Nightingale known as **"The Lady With the Lamp,"** was a British nurse, social reformer and statistician best known as **founder of modern nursing** as she **established first scientific nursing school in London (1860).**
  - She was the **first woman elected as a Fellow of the Royal Statistical Society (1858)**

Places in News

Belize (Capital: Belmopan)

- World Health Organization (WHO) has certified Belize as malaria-free.
- **Political Boundaries**
  - Country located on **northeast coast of Central America.**
  - **Situated south of Yucatán Peninsula.**
  - Bounded by **Mexico** (north), **Guatemala** (west and south), and **Caribbean Sea** (east).
- **Geographical features**
  - **Belize Barrier Reef Reserve System**, inscribed as a UNESCO World Heritage Site in 1996.
  - Belize is a **land of mountains, swamps, and tropical jungle.**
  - **Highest point:** Doyle's Delight.
  - **Major Mountain ranges:** Maya Mountain.
  - **Major Rivers:** Belize River, Hondo River.

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