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INDIAAI FUTURE SKILLS PLATFORM

- It is one of the seven foundational pillars of the **IndiaAI Mission.**
- It aims to **enhance India's AI workforce readiness** by mitigating barriers to entry in AI programs and advancing the AI talent pipeline.
- It will **increase AI courses** in undergraduate, postgraduate, and Ph.D. programs.
- It further aims to foster inclusive access to AI education by establishing Data and **AI Labs in Tier 2 and Tier 3 cities** across India to impart foundational level courses.
- It is **developed in collaboration with industry partners**, to provide cutting-edge training programs tailored to meet evolving industry demands.
- Under this initiative, AI Data Labs are being established in cities such as Gorakhpur, Lucknow, Shimla, Aurangabad, Patna, Buxar and Muzaffarpur. This move aims to spread technological advancements across the country, **ensuring they are not limited to urban hubs**.

What is IndiaAI Mission?

- It aims to build a comprehensive ecosystem that **fosters AI innovation** by democratizing computing access, enhancing data quality, developing indigenous AI capabilities, attracting top AI talent, enabling industry collaboration, **providing startup risk capital**, ensuring socially impactful AI projects and **promoting ethical AI**.

ATHLETE BIOLOGICAL PASSPORT

- It is an **advanced anti-doping tool** that monitors an athlete's biological markers over time.

- By analyzing variations in parameters such as **blood and steroid profiles**, the ABP helps to ensure fair play in sports and to protect clean athletes.
- It works against doping through **enhanced target testing and analysis**, investigations, deterrence and as **indirect evidence for use of prohibited methods** or substances.
    - It can be used to conduct targeted, conventional anti-doping tests on athletes with abnormal profiles.
    - It can also be **used as corroborating evidence** of doping during an anti-doping rule violation case.
- Currently **three modules** were implemented in ABP program:
    - **Haematological Module:** It collects information on markers of blood doping. It aims to identify **the use of prohibited substances and/or prohibited methods** for the enhancement of oxygen transport or delivery.
    - **Steroidal Module:** It collects information on markers of steroid doping measured in urine and/or serum s It aims to identify **Endogenous Anabolic Androgenic Steroids** (EAAS) when administered exogenously.
    - **Endocrine Module:** It collects information on markers of **human growth hormone (hGH)** doping as well as use of hGH analogs.

GENCAST MODEL

- It is a new machine-learning **weather prediction model.**
- It uses a **diffusion model approach** similar to Artificial Intelligence (AI) image generators.
- The system **generates multiple forecasts** to capture the complex behaviour of the atmosphere. It does so with a fraction of the time and computing resources required for traditional approaches.
- It is a part of Google's growing suite of next-generation AI-based weather models.

- It can predict the **weather for 15 days in just 8 minutes**. The traditional way of predicting weather usually takes hours.
- **Working:**
    - The AI-powered program was **trained on four decades of historical data** through 2018, taken from the European Centre for Medium-Range Weather Forecasts' (ECMWF) historical archives.
    - The GenCast model makes predictions of several variables such as **temperature, pressure, humidity and wind speed** at the surface and at 13 different heights, on a grid that divides the world up into 0.25-degree regions of latitude and longitude.
- **Significance:** It outperforms the current leading system, uses probabilistic ensemble forecasting to predict a range of possible weather scenarios, offering a more comprehensive picture of the upcoming conditions.

WHAT INDIA CAN LEARN FROM CHINA'S WAR AGAINST AIR POLLUTION

What can Delhi learn from the Beijing experience?

- **Ideas related to transportation**
    - Implementing an efficient bus-metro integrated transport system, upgrading the DTC bus fleet, and improving last-mile connectivity.
    - Scrapping old vehicles through a subsidy-for-scrap program and creating exclusive cycling and walking lanes.
    - Experimenting with congestion charges, high parking fees, and separate fuel costs to promote public transport and reduce private vehicle use.
    - Developing an urban layout that brings workplaces and residences closer to minimize long-distance travel.
- **Energy Overhaul for Cleaner Air**
    - Delhi's electricity grid, still primarily coal-dependent, needs restructuring.
    - Subsidies for solar rooftops and grid integration, along with electricity bill discounts, could promote cleaner energy alternatives.

- **Regional Cooperation for Pollution Control**
  - Coordination with neighboring regions is crucial, as pollution sources often originate beyond Delhi.
  - A collective effort to reduce regional pollution could benefit all involved.
- **Public Awareness and Accountability**
  - Delhi's residents must demand clean air and hold the government accountable, instead of tolerating poor air quality.
  - Changing the attitude towards air pollution could pressure authorities to take action.
- **Political Will and Government Accountability**
  - The lack of political will is hindering progress in pollution control. Despite years of worsening air quality, the government continues to blame each other while providing insufficient solutions.
  - The public, especially the disadvantaged, is left to cope with the problem.
  - Delhi deserves a more serious and effective response from both the Centre and the State.

SUPREME COURT'S PROCEEDINGS ON THE PLACES OF WORSHIP ACT, 1991

Places of Worship Act, 1991

- **Historical Context**
  - Passed during the Ram janmabhoomi movement in the late 1980s, which aimed to build a Ram temple at the Babri Masjid site in Ayodhya.
  - Concerned about potential similar movements and litigation, the PV Narasimha Rao-led government enacted the law to prevent future disputes.
- **Objective of the Act**
  - Prohibit conversion of any place of worship to maintain its religious character as it existed on August 15, 1947.

- Prevent conversion both within a religion (e.g., from one denomination to another) and between religions.

- **Structure:**
  - The Act comprises seven sections:
    - **Sections 1 & 2**: Title and definitions.
    - **Section 3**: Bars conversion of places of worship.
    - **Section 4**: Declares the religious character of places of worship and bars court jurisdiction.
    - **Section 5**: Excludes Ram Janmabhoomi-Babri Masjid from its provisions.

December 2024 Ruling – key directions by the SC

- **Key Directions from the Bench**
  - The Supreme Court emphasized that while fresh suits may be filed, no action will be taken on them, nor will ongoing proceedings progress.
  - Directed the Union Government to clarify its position on the constitutional validity of the Act within four weeks.
- **Key observations made**
  - The Supreme Court noted that issues regarding the constitutional validity, scope, and ambit of the Act require detailed examination.
  - Highlighted that lower civil courts must defer to principles laid out in the Ayodhya judgment, stating, "Civil courts cannot race with the Supreme Court."
- **Larger constitutional questions**
  - SC noted that even without the Act, constitutional principles might bar suits seeking to alter the religious character of places of worship.
  - It acknowledged petitions questioning whether the Act restricts judicial review powers, adding another layer of constitutional scrutiny.

DISASTER MANAGEMENT (AMENDMENT) BILL, 2024

The Lok Sabha passed the Disaster Management (Amendment) Bill, 2024, marking a significant update to **the Disaster Management Act, 2005**.

The Bill aims to enhance disaster preparedness and management across India by introducing institutional reforms and clarifying roles at various administrative levels.

Salient Provisions of the Disaster Management (Amendment) Bill 2024:

- **Defines disaster management:**
  - Disaster management is **inclusive of disaster risk reduction** - the practice of reducing disaster risk through systematic effort.
  - This is to analyse and manage the causal facts of disaster through -
    - **Reduced exposure to hazard**;
    - **Reduced vulnerability** of people, property, infrastructure, economic activity, environmental and natural resource; and
    - **Improved preparedness**, resilience and capacity to manage and respond to adverse events.
- **Disaster database at national and State level:** The database will include -
  - Disaster assessment,
  - Fund allocation detail,
  - Expenditure,
  - Preparedness and mitigation plan,
  - Risk registers according to type and severity of risk, etc.
- **Constitution of UDMA:** The Bill provides for the Urban Disaster Management Authority (UDMA) **for State capitals and large cities** having municipal corporations, except the UTs of Delhi and Chandigarh.
- **State Disaster Response Force (SDRF)**: It provides for the constitution of the SDRF by the State government.

- **Empowers the National Disaster Management Authority (NDMA):** To take stock of the entire range of disaster risks in the country periodically, including emerging disaster risks.
- **Empowers the NDMA and the State Disaster Management Authorities (SDMAs):** To prepare the disaster plan at national level and State level respectively instead of the plans made by the National and the State Executive Committees earlier.
- **Provides statutory status to certain organisations:** The Bill also provides statutory status to certain pre-Act organisations like the National Crisis Management Committee and the High-Level Committee.
- **Empower the Central and State governments:** To direct any person to take any action or refrain from taking any action for reducing the impact of a disaster and to impose a penalty not exceeding ₹10,000.

Rational/Significance of the Disaster Management (Amendment) Bill 2024:

- **Recommendations of the 15th Finance Commission:** There was a need to amend the Disaster Management Act 2005 **to mainstream disaster management in the development plans**.
- **Brings more clarity and convergence:** In the roles of authorities and committees working in the field of disaster management. This is relevant in the context of the recent **Wayanad tragedy.**
- **A transformative step:** Toward enhancing the nation's capacity for disaster risk reduction and environmental sustainability.
- **A comprehensive, centralised disaster database:**
    - At both national and state levels will significantly build resilient communities by improving their ability to prepare for, respond to, and recover from disasters.
    - It will facilitate **more efficient resource allocation, better coordination among stakeholders, and timely, informed decision-making during crises**.

WHAT IS DISEASE X AND WHY THE WORLD SHOULD PREPARE FOR IT?

- Disease X represents a hypothetical, yet highly probable, global health threat.
- Coined by the **World Health Organization** (WHO) in 2018, the term is a **placeholder for any unknown pathogen capable of causing a devastating epidemic or pandemic**.
- Recent outbreaks, such as the unclassified one in the Democratic Republic of Congo (DRC) that claimed over 400 lives, highlight the urgent need for preparedness against such threats.

Origins of the Concept:

- The term **"Disease X" emerged after the West African Ebola epidemic** (2014–2016), which exposed gaps in global epidemic readiness.
- It embodies "**known unknowns**" (threats we are aware of but lack specifics) and "**unknown unknowns**" (threats beyond our awareness).
- The concept underscores the inevitability of new pathogens and emphasizes proactive preparation.

Epidemiological Patterns:

- Since 1940, over 300 emerging infectious diseases have been identified, with 70% having zoonotic origins (transmitted from animals to humans).
- Human activities such as deforestation, urbanization, and climate change exacerbate these risks, bringing wildlife and humans into closer contact.
- Regions with high biodiversity and limited healthcare infrastructure, such as the Congo Basin, are particularly vulnerable.

Challenges in Prediction:

- Predicting Disease X is challenging due to:
    - The vast number of undiscovered pathogens.
    - Increasing zoonotic spillovers driven by human encroachment.
    - Climate change altering disease dynamics and expanding vectors like malaria and dengue.

- Risks from antimicrobial resistance, bioterrorism, and accidental lab leaks.

Global Preparedness and WHO's Priority List:

- The WHO's priority pathogen list includes diseases like **Ebola**, **Marburg**, **Nipah**, and **Disease X**.
- This list aims to direct global research, funding, and policy efforts toward combating high-risk diseases with limited medical countermeasures.
- **Measures for Preparedness:**
  - **Strengthening Surveillance**: Robust systems for early outbreak detection are critical. Technologies like genomic sequencing and real-time data sharing play pivotal roles.
  - **Healthcare Infrastructure**: Low- and middle-income countries require enhanced healthcare systems to mitigate the disproportionate impact of pandemics.
  - **Rapid Response Platforms**: Organizations like the **Coalition for Epidemic Preparedness Innovations** (CEPI) are developing "prototype pathogen" platforms to create vaccines within 100 days of identifying a new disease.
    - CEPI is an innovative partnership between public, private, philanthropic, and civil organisations, launched at Davos in 2017, to develop vaccines against future epidemics.

Conclusion:

- Disease X serves as a call to action for the global community.
- Preparedness is not an option but a necessity to safeguard future generations.
- By prioritizing collaboration, innovation, and robust health systems, humanity can confront and contain the unpredictable threats of emerging diseases.