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1. Jhumoir Binandini

Context: The Adivasi tea tribes have been part and parcel of the greater Assamese society over the ages and Monday evening's presentation of the traditional jhumoir dance by over 8,800 dancers in the presence of Prime Minister Narendra Modi and other dignitaries in Guwahati showcased the unique multifaceted culture of Assam before a global audience. The mega cultural event, organised in sync with the Advantage Assam 2.0 initiative of the State government to attract investors for industrial development, also marked the 200-year-old journey of Assam's industrialisation, which started with the setting up of the tea industry after the British annexed the province of Assam following the Treaty of Yandabo in 1826.

Key points

- **Overview:** Jhumoir Binandini is a landmark cultural event celebrating the contributions of the tea tribe to Assam's heritage.
- **Origin of Jhumoir (Jhumur) Dance:** Jhumur was brought to Assam by the tea garden community. It is a folk dance of the Sadan ethnolinguistic group, tracing their origins to the Chotanagpur region (Jharkhand).
- **Tea Tribes:** The tea tribe refers to a multi-cultural, multi-ethnic community of tea garden workers and their descendants. These people migrated from Central India, mainly from present-day Jharkhand, Odisha, Chhattisgarh, and West Bengal. They settled in Assam in the 19th century to work in tea gardens established by the British.
- **Significance of the celebrations:** Jhumur is performed during the harvest season. It plays a central role in "tea garden festivals" celebrated by tea garden workers in Assam. Other major tea garden festivals include Tushu Puja and Karam Puja, both of which celebrate the harvest.
- **Performance Style:** Women are the primary dancers and singers, while men play musical instruments such as the madal, dhol, dhak, flutes, and cymbals. Traditional attire includes red and white sarees, which are particularly popular among women.
- **Themes of Jhumur Songs:** Although Jhumur songs are lively and rhythmic, many of them depict the hardships faced by tea plantation workers. The lyrics narrate stories of migration, exploitation, and the social struggles of the tea garden community.

2. Looking again at EU

Context: The visit of European Commission President Ursula von der Leyen to India, alongside the entire College of Commissioners, signals a pivotal moment for the EU-India strategic partnership. This high-profile delegation underscores Europe's intention to elevate its relationship with India at a time when global political dynamics are shifting rapidly. For India, Europe emerges as a critical ally amid uncertainties caused by Donald Trump's return to the White House, which has disrupted the global order.

Key points

- **Overview:** Both EU and India seek to reduce reliance on the U.S. while navigating Trump's unpredictability. Europe's status as the third-largest global economy (after U.S. and China) offers India access to technology, capital, and markets.
- **Implications of Trump's Policies on Global Dynamics:** *Withdrawal from Ukraine* - Trump ended U.S. support for Ukraine, shocking Europe and undermining collective security. Direct U.S.-Russia talks in Riyadh excluded European representatives, signalling marginalization.
NATO Recalibration - U.S. Defence Secretary urged Europe to assume primary responsibility for Ukraine's security and boost defence spending. Plans to reduce U.S. troop presence in Europe.
Undermining European Unity - Trump allies like J.D. Vance criticized Europe's immigration, climate policies, and liberal extremism at the Munich Security Conference. Support for right-wing parties (e.g. Germany's AfD) to destabilize centrist governments.
- **Impact on India:** *Russia's Shifting Priorities* - Putin seeks a U.S. deal under Trump, threatening India's reliance on Moscow (e.g. BRICS, defence ties).
China's Opportunism - Trump's potential rapprochement with China could isolate India, which faces a \$100Bn annual trade deficit with Beijing.
- **India's Challenges and Opportunities:** *Trade Deficit with China* - Nearing \$100Bn annually, driven by surging Chinese exports.
Need for Domestic Reforms - Decisive steps to reduce import reliance and boost manufacturing.
Balancing U.S. Ties - PM Modi's recent White House visit secured commitments, but implementing a \$500Bn trade target by 2030 faces hurdles (reciprocal tariffs).
- **Need for Strengthening India-EU Relations:** *Countering Authoritarianism* - As democracies, India and the EU face increasing pressure from authoritarian regimes, particularly China for India and Russia for the EU.
Economic Growth - A successful FTA between India and the EU would boost trade and investment. The EU is the largest economic bloc and by 2030, India is projected to be the third-largest economy.
Technological Collaboration - India's rise in tech innovation and the EU's R&D capabilities can drive joint initiatives in AI, quantum computing, biotech, and space, countering China's dominance.
Environmental Action - India and the EU can drive global climate action through joint initiatives on clean energy, carbon reduction, and sustainable development, leveraging India's renewable potential and the EU's environmental leadership.
- **Way Forward:** Given the volatile global context, von der Leyen's visit offers India and Europe a critical opportunity to strengthen their underdeveloped partnership. Deepening EU-India cooperation could not only stabilize their respective foreign policies but also contribute significantly to a balanced, multipolar global order.

3. Human smuggling must engage Parliament's attention

Context: Human smuggling remains a grave humanitarian crisis affecting thousands of Indians who seek better opportunities abroad through illegal channels. The loopholes of existing legal frameworks, particularly the Emigration Act, 1983 and the Punjab Travel Professionals Regulation Act, 2012, highlights the inefficiencies in tackling this growing menace. Therefore, it is crucial to explore the socio-economic factors behind irregular migration, the exploitative nature of human smuggling networks, the existing legislative gaps, and the need for a robust national legal framework.

Key points

- **The Role of Human Smugglers:** The illegal migration network is a well-organised system involving travel agents, document forgers, corrupt officials, and international criminal syndicates. These smugglers operate openly in rural India, targeting vulnerable individuals and their families with false promises.
- **The Inhumane Conditions Faced by Migrants:** Without proper documentation, they are at the mercy of traffickers and employers who treat them as modern-day slaves. Many are forced into –
 - Backbreaking, unpaid labour on construction sites, farms, or factories.
 - Sex trafficking and forced prostitution, especially in the case of women and young girls.
 - Working under extreme conditions in war-torn regions, such as clearing ammunition fields in Iraq.
 - Detention and deportation, often in shackles, after being caught by immigration authorities.
- **Gaps in Existing Laws and Challenges:** *The Emigration Act, 1983* - It sought to prevent exploitation of Indian workers in foreign countries by introducing a system of emigration clearance for those traveling to specific countries.
The Punjab Travel Professionals Regulation Act, 2012 - Recognising the rampant problem of human smuggling in the state, Punjab enacted the Punjab Travel Professionals Regulation Act, 2012 to regulate the activities of travel agents and prevent fraudulent migration schemes.
- **Way ahead:** *Legislative Reforms* - A strong national law must be enacted to define human smuggling, impose strict penalties on offenders, and protect vulnerable migrants.
Strict Law Enforcement - Authorities must crack down on illegal agents and international crime syndicates involved in smuggling operations.
Awareness Campaigns - Young individuals must be educated about the dangers of illegal immigration and the legal alternatives available.
International Cooperation - India must collaborate with destination countries to prevent illegal entry, rescue victims, and repatriate stranded migrants.
Employment Opportunities - Creating better job prospects within India can deter migration and reduce the demand for illegal routes.
- **Conclusion:** Human smuggling is a grave violation of human rights that demands immediate attention. Without urgent action, countless more lives will be lost to this ruthless trade. The time for legislative inertia is over, India must rise to protect its people from the perils of human smuggling.

4. For the first time, a genetic disorder treated in the womb

Context: Following the first ever treatment for a rare genetic disorder known as spinal muscular atrophy (SMA) in the womb, the two-year old girl now shows no signs of the disease. The mother started taking the gene targeting drug during her late pregnancy, and the child is still taking it. For the treatment scientists used an oral drug called Risdiplam, which is given to patients to slow the progression of SMA. Risdiplam is given to a patient soon after birth, during this new trial scientists decided to administer the drug before birth for the first time.

Key points

- **Spinal Muscular Atrophy:** Spinal muscular atrophy (SMA) refers to a group of hereditary diseases which affect motor neurons. It is caused by a mutation in a gene- survival motor neuron gene 1 (SMN1).
People with SMA experience - Respiratory infections, scoliosis, and joint contractures (chronic shortening of muscles and tendons). Severe weakness in the trunk (chest) and upper leg and arm muscles.
- **Types of SMA:** *Type 0* - Very rare and severe type of SMA with symptoms beginning prior to birth.
Type I - (Werdnig-Hoffman disease) is the most common form of SMA. It is usually evident before 6 months of age.
Type II - First noticed between 6 and 18 months of age.
Type III - (Kugelberg-Welander disease): Symptoms after 18 months of age.
Type IV - Develops after 18 years of age. Symptoms include mild to moderate leg muscle weakness and other symptoms.
- **Treatment:** *Gene therapy* - Zolgensma, a one-time therapy administered to patients under two-year-old, costs around ₹16 crore in India.
 - Zolgensma delivers a functional copy of the SMN gene into motor neuron cells, improving muscle movement and function in children with SMA.*SNM-enhancing drug* - Survival motor neuron gene enhancing drug like Risdiplam, costs up to ₹8 crore per patient, annually.
 - Risdiplam works by increasing the concentration of SMN protein in the body.
- **Challenges:** The Central government has argued that the costs are beyond its financial reach and instead promoted crowdfunding and State-level interventions. This results in an unbudgeted national expenditure of ₹6,400 crore to ₹34,000 crore each year for the Central government.
- **Way forward:** *Generic Risdiplam production* - Increased funds, international collaboration & utilising technology (CAD & AI) towards development of generic alternatives of drugs like Risdiplam.
Compulsory licensing - Under the Indian Patent Act, 1970, the government can grant licences to Indian Pharmaceutical companies third parties to produce affordable generics.
A robust Policy framework for Rare Diseases - In 2023, the Central Government provided full exemption from basic customs duty on all drugs imported for personal use for treatment of Rare Diseases, listed under National Policy for Rare Diseases, 2021.

5. AI has an environmental problem

Context: Artificial Intelligence (AI) has become an indispensable force in modern society, revolutionising industries, economies, and daily life. With recent advancements in computing power and data availability, AI adoption has surged, driving economic value at an unprecedented scale. The global AI market, currently valued at \$200 billion, is projected to contribute up to \$15.7 trillion to the global economy by 2030. However, while AI offers immense economic potential, its rapid expansion also raises critical concerns, particularly regarding its environmental footprint.

Key points

- **Hardware Production and Infrastructure:** *Raw Material Extraction and Manufacturing* - The manufacturing of AI hardware requires rare earth metals like lithium, cobalt, and nickel, which are mined under environmentally damaging conditions.
Energy-Intensive Production - The fabrication of semiconductors and other AI hardware involves complex chemical processes and high-temperature treatments, consuming vast amounts of energy.
E-Waste Crisis - As AI-driven systems demand more computing power, the lifecycle of AI hardware shortens, contributing to a growing electronic waste (e-waste) problem.
- **Data Centre Operations:** *Energy Consumption* - Data centres are responsible for approximately 1% of global greenhouse gas emissions, according to the International Energy Agency (IEA). This figure is expected to double by 2026 as AI applications become more widespread.
Water Usage for Cooling - AI data centres generate immense heat due to their continuous operations, necessitating efficient cooling systems.
Location-Based Carbon Footprint - The environmental impact of data centres is also influenced by their geographical location.
- **AI Model Life Cycle Emissions:** *Training AI Models* - Training state-of-the-art AI models is an extremely energy-intensive process.
Inferencing and Continuous Operation - Once AI models are deployed; they require substantial computational power to process user queries and make real-time predictions known as inferencing.
Data Storage and Retrieval - AI models rely on massive datasets that require ongoing storage and retrieval, further increasing energy usage.
Model Retirement and Re-training - Unlike traditional software that can run for years with periodic updates, AI models often require retraining as new data becomes available.
- **Global Response to AI's Environmental Challenges:** At COP29, the International Telecommunication Union emphasised the need for greener AI solutions, urging businesses and governments to integrate sustainability into their AI strategies. More than 190 countries have adopted ethical AI recommendations that address environmental concerns, and legislative efforts in the European Union and the U.S. aim to curb AI's carbon footprint.
- **Way ahead:** *Need to Strike a Balance* - Achieving a balance between AI-driven innovation and environmental responsibility requires a multi-faceted approach.
Hardware Efficiency - The development of energy-efficient computing components and regular maintenance of hardware can significantly lower emissions.
- **Conclusion:** Sustainability must be embedded into the core design of AI ecosystems to ensure their long-term viability. By investing in renewable energy, optimising hardware and software efficiency, and developing transparency in emissions tracking, we can achieve a sustainable AI future.