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6. Short News

Hydrogen Fuel Cell- Based Train

Context - Recently, Indian Railways approved the rollout of India's first indigenous hydrogen fuel cell-based train on the Jind-Sonipat route in Haryana.

About Hydrogen-Powered Train

1. The hydrogen-powered train is a zero-emission railway system that generates electricity using hydrogen fuel-cell technology instead of diesel engines.
2. Developed By - Indian Railways through the Research Designs and Standards Organisation (RDSO).
3. Key Features of the Hydrogen Train
 1. Hydrogen Fuel Cell Technology - The train produces electricity through combined Chemical Power generation and electrochemical conversion.
 - Chemical Power Generation - It mixes onboard compressed hydrogen gas with oxygen from the outside air inside a specialized fuel cell stack.
 - Electrochemical Conversion - An electrochemical reaction passes these gases through an internal membrane, combining the hydrogen and oxygen atoms to generate steady electrical energy.
 2. Clean Energy Propulsion - The 1,200 KW propulsion system powers the train while emitting only water vapour and heat as by-products.
 3. Operational Speed - The 10-car trainset is designed to operate at a maximum speed of 75 kmph during the initial deployment phase.
 4. Indigenous Refuelling Infrastructure - A dedicated hydrogen storage, compression and refuelling facility has been established at Jind station for operational support.
 5. Safety Mechanisms - The project incorporates hydrogen leak detectors, flame detectors, safety audits and trained personnel for safe operations.
 6. Maintenance and Monitoring - Indian Railways plans round-the-clock monitoring and specialised maintenance facilities under approved operational protocols.
4. Significance - The project advances India's clean energy transition and places the country among leading nations exploring hydrogen-based sustainable rail transportation.

Mission Queen Pineapple

Context - The union minister for the Development of North Eastern Region has launched Mission Queen Pineapple to promote the Tripura Queen Pineapple.

About the Mission

1. Convergence-Led Development Initiative - A ₹236 crore convergence-based initiative for the development of pineapple cultivation and the entire value chain in Tripura.
2. Implementation period - To be implemented over three years, from Q2 FY 2026 to Q4 FY 2028.
3. Institutional Framework - Anchored by the Ministry of Development of North Eastern Region (MDoNER) through convergence with central ministries, agencies, research institutions, and the Government of Tripura.

Key Components of the Scheme

1. Hub-and-Spoke Post-Harvest Ecosystem -
 1. Establishment of one central hub near Agartala Airport and eight spoke collection centres in major pineapple-growing districts.
2. Processing Infrastructure -
 1. Revival of the Nalkata Pineapple Processing Unit through a Viability Gap Funding (VGF) model.
3. Bio-Economy and Circular Economy Initiatives
 1. Utilisation of nearly 60% of pineapple biomass, currently treated as waste.
4. Promotion Measures -
 1. GI Protection and Commercialisation - Includes GI authorisation workshops, QR-based traceability systems, and GI monetisation frameworks.
 2. Market Linkages and Export Readiness - Organises buyer-seller meets and export-readiness initiatives to strengthen domestic and international market access.
 3. Quality Certification Support - Provides assistance for organic certification to improve product quality and export competitiveness.
 4. Brand Promotion and Outreach - Conducts annual flagship events such as the Tripura Queen Pineapple Festival, aligned with International Pineapple Day on 27 June.

About Tripura Queen Pineapple

1. It is the State Fruit of Tripura, known for its distinctive aroma, sweetness, juiciness and low-fibre texture, hard skin and robust structure.
2. Geographical Distribution - Tripura is one of India's largest pineapple-producing states, with pineapple cultivation spread across its hilly terrain.
3. Two major pineapple varieties are grown in Tripura - Queen Variety, Kew Variety.
4. Cultivation - The Queen variety is the most renowned and commercially important and is primarily cultivated between mid-May and mid-September each year.
5. GI Tag Recognition - The Tripura Queen Pineapple received Geographical Indication (GI) registration in 2015.
6. Suitable Soil - Cultivated mainly on laterite soils rich in humus and relatively low in calcium.
7. Ideal Temperature Range - Thrives in temperatures between 15.6°C and 32.2°C.
8. Rainfall Requirement - Requires annual rainfall of about 1000–1500 mm for optimum growth.
9. India's Largest Pineapple Producer - West Bengal.
10. World's Largest Pineapple Producer - Indonesia.

Taiwan Became Fifth-largest Equity Market

Context - Recently, Taiwan overtook India to become the world's fifth-largest stock market due to a strong artificial intelligence-driven technology rally.

Key Highlights on Equity Market

1. Market Capitalisation Ranking - Taiwan's total stock market capitalisation reached nearly \$4.95 trillion, marginally surpassing India's market valuation of about \$4.92 trillion.
2. Global Position - Taiwan became the world's fifth-largest equity market after the United States, China, Japan, Hong Kong and India.
3. Foreign Investor Trends - Global investors sold nearly \$24 billion worth of Indian equities amid capital shifts toward AI-driven technology markets such as Taiwan and South Korea.
4. India's Market Challenges - Indian equity markets witnessed pressure from high energy costs, weaker corporate earnings growth and concerns regarding elevated market valuations.

5. MSCI Emerging Markets Weightage – India's share in the MSCI Emerging Markets Index declined from nearly 19% last year to around 12% in 2026.
6. Economic Comparison – Despite Taiwan's higher market capitalisation, India's economy remains significantly larger with an estimated GDP exceeding \$4 trillion.

Factors Responsible for Taiwan's Rise in Position

1. Artificial Intelligence Boom – Rising global investments in artificial intelligence significantly boosted technology and semiconductor-related stocks in Taiwan.
2. Dominance of TSMC – Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest chipmaker, accounted for nearly 42% of Taiwan's benchmark stock index.
3. Semiconductor Leadership – Taiwan's strong semiconductor manufacturing ecosystem positioned the country at the centre of global AI hardware supply chains.
4. Surge in Technology Stocks – Shares of TSMC surged sharply due to rising demand for advanced AI chips and semiconductor technologies.
5. Regulatory Relaxation – Taiwan's financial regulator relaxed investment limits for domestic funds, enabling larger investments in dominant listed companies such as TSMC.
6. Increased Capital Inflows – Regulatory reforms and optimism surrounding AI-led growth attracted fresh global investment flows into Taiwan's capital markets.
7. Technology-Oriented Market Structure – Taiwan's stock market benefits from high concentration of technology hardware firms compared to relatively diversified emerging markets such as India.

About Equity Market

1. The equity market is a financial market where shares of publicly listed companies are issued, bought and sold by investors.
2. Capital Formation – Equity markets help companies raise long-term capital for business expansion, infrastructure development and innovation through public investment.
3. Wealth Creation and Economic Growth – It promotes wealth creation, investment participation and efficient allocation of financial resources, contributing to economic growth and financial stability.

Sanchi Stupa Relics

Context – Recently, sacred relics of Lord Buddha's disciples Sariputra and Maudgalyayana were sent from Sanchi Stupa for display at Ulaanbaatar, the capital of Mongolia.

About the Sanchi Stupa Relics

1. The sacred relics preserved at Sanchi are associated with Sariputra and Maudgalyayana, two foremost disciples of Lord Buddha.
 1. Both were born near Rajagriha in the ancient kingdom of Magadha in present-day Bihar, India.
 2. Sariputra was renowned for wisdom, while Maudgalyayana was revered for extraordinary spiritual and transcendental powers.
2. Location of Relics – The relics were discovered inside Stupa 3 within the Sanchi Buddhist complex.
3. Religious Importance – The relics are highly revered in Buddhist traditions, particularly among followers of the Hinayana or Theravada school.

About Sanchi Stupa

1. Sanchi Stupa is the oldest surviving Buddhist sanctuary and an outstanding example of ancient Indian Buddhist art and architecture.
2. Location – Raisen district of Madhya Pradesh.
3. UNESCO Status – Designated a UNESCO World Heritage Site in 1989 due to its exceptional cultural and historical significance.

4. Historical Background – The Great Stupa was originally commissioned by Mauryan Emperor Ashoka during the 3rd century BCE to promote Buddhism.
5. Rediscovery and Restoration – The monument was rediscovered in 1818 by British officer Henry Taylor and later restored through systematic conservation efforts.
6. Key Features of Sanchi Stupa
 1. Hemispherical Dome (Anda) – The central dome symbolizes the cosmic universe and enshrines sacred Buddhist relics.
 2. Ornamental Gateways (Toranas) – Four intricately carved stone gateways depict scenes from Buddha's life, Jataka tales and Buddhist symbols.
 3. Harmika and Yashti – The structure contains a square railing called Harmika and a central mast symbolising the cosmic axis called Yashti.
 4. Ashoka Pillar – The site contains remains of the famous Ashokan pillar featuring a finely carved Four lion capital.
 5. Monastic Complex – The Sanchi complex includes monasteries, temples, stupas and stone structures representing different phases of Buddhist architecture.

The transfer of relics to Mongolia aims to strengthen India-Mongolia cultural, spiritual and Buddhist civilisational ties.