6.Shortnews

Sindh Province

Defence Minister Rajnath Singh stated that although Sindh is not geographically part of India, it remains an integral part of India's civilisational heritage.

Background -

1. Sindh is one of the oldest cultural regions of South Asia, forming the core of the Indus Valley Civilization, with major sites like Mohenjo-Daro.
2. Historically, Sindh has been home to a syncretic culture blending Hindu, Buddhist, and Islamic influences, often referred to as Sindhiat known for tolerance, trade, and maritime links.

Pre-colonial Status of Sindh -

3. Before British rule, Sindh was ruled by the Talpur Mirs (1783–1843), who governed from Hyderabad and Khairpur.
4. In 1843, the British annexed Sindh after the Battle of Miani, integrating it into the Bombay Presidency, where it remained until 1936.
5. In 1936, British India carved Sindh out as a separate province with its own legislature due to its distinct cultural and demographic identity.

Location of Sindh -

6. Sindh lies in the lower Indus River basin in present-day Pakistan, bordering Baluchistan, India's Rajasthan and Gujarat, and the Arabian Sea to the south.
7. Its strategic location made it a major gateway for trade and Islamic expansion into the Indian subcontinent.

ZINC-ION BATTERIES (ZIBS)

A Bengaluru-based research team has developed an activated cathode material that significantly boosts the performance and stability of next-generation zinc-ion batteries.

Zinc-ion batteries (ZIBs) are a promising energy storage technology that use zinc ions for charge transfer, pairing a zinc anode with various cathode materials.

ZIBs are emerging as safer, environmentally friendly alternatives to lithium-ion systems, using aqueous electrolytes and naturally abundant zinc.

Key Features - ZIBs offer high energy storage capacity, reduced fire risk due to water-based electrolytes, and improved environmental sustainability compared to lithium batteries.

They also support long cycle life and stable performance when paired with suitable cathode materials.

Possible Applications - ZIBs are promising for grid storage, renewable energy backup systems, electric mobility solutions, and consumer electronics requiring safer, cost-effective battery options.

Challenges in Existing Models - Existing oxide cathode materials fail to achieve the required performance in ZIB systems due to structural limitations affecting energy density and longevity.

Innovative Solution - A research team at CeNS introduced a simple thermo-electrochemical activation method to modify vanadium oxide (V_2O_5), creating beneficial defects within its structure.

Centre for Nano and Soft Matter Sciences (CeNS) is an autonomous institute under the Department of Science & Technology (DST), Government of India,

Mechanism of Improvement - The transformation into zinc-vanadium oxide ($Zn-V_2O_5$) produces porous pathways that enable smoother zinc-ion movement and enhanced hydrogen-ion interaction, strengthening structural stability.

Enhanced Performance - The activated cathode material delivers significantly higher energy density and exceptional rechargeability, enabling thousands of cycles without major degradation.

Significance - The innovation enables safer, high-density, long-life zinc-ion batteries, advancing affordable, sustainable energy storage for grids, renewables, and future electric mobility.

AURAMINE O

Auramine O, a banned industrial dye, has been found in Indian sweets and snacks despite strict prohibitions, raising renewed public health and regulatory concerns.

Auramine O is a bright yellow synthetic dye used in textiles, leather processing, printing inks, paper production, and microbiological staining. It is used illicitly by some small-scale food producers to impart a bright yellow colour resembling saffron or turmeric. It is not approved for food use in India, the U.S., EU, or most regulatory systems. Toxicity & Health Risks - The International Agency for Research on Cancer (IARC) classifies auramine production as Group 1 - carcinogenic to humans; ingestion is associated with possible carcinogenic outcomes. Toxicological studies link ingestion to liver and kidney damage, splenic enlargement, metabolic disruption, and mutagenic effects.

PARASOCIAL

The Cambridge Dictionary chose the term "parasocial" as Word of the Year in 2025. Parasocial relationships are one-sided emotional bonds formed by individuals with public figures, such as celebrities, influencers, athletes, or even fictional characters, without any real reciprocal interaction. This phenomenon has become increasingly common with the rise of social media platforms where people can follow and closely observe the lives of these personalities. These connections provide comfort and a sense of community, but also blur the line between fantasy and reality. Parasocial bonds extend beyond celebrities to include fictional characters who become like friends, family or cult hero, as seen in fans mourning actors like Matthew Perry.

EXERCISE SURYAKIRAN

India and Nepal will begin the 19th edition of Exercise Surya Kiran to strengthen joint operational preparedness in mountainous jungle warfare and counter-terror operations.

Surya Kiran is an annual bilateral military exercise between the Indian Army and Nepal Army, conducted alternately in both countries. 19th edition - November 25 to December 8, 2025, in Pithoragarh, Uttarakhand. It focuses on operational synergy, interoperability, best-practice exchange, and strengthening long-standing defence cooperation.

Operational Scope

1. The exercise trains troops in jungle warfare, counter-terrorism in mountainous terrain, aviation support, medical operations, and environmental conservation.
2. It provides a platform to refine combat skills, enhance coordination, and improve readiness for humanitarian assistance and disaster relief (HADR) operations.
3. The Indian Army has actively supported Nepal through defence modernisation, equipment support, and regular training.

Surya Kiran 2025 Event - It integrates niche technologies to improve interoperability and reflects both countries' commitment to regional stability and global peace. The previous 18th edition (Dec 2024–Jan

2025 in Nepal) involved 334 Indian personnel, enhancing preparedness through intensive battalion-level training.