DAILY CURRENT AFFAIRS 18-10-2024

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Brahmi inscription found in Dharanikota village at Amaravathi

Syllabus: GS-1; Ancient History- Inscriptions

Context

> ➢ A fragmentary inscription was found while ploughing the agricultural field of Mr. Bommaneni Pichhaiah in Dharanikota village at Amaravathi mandal in Palnadu district.

> ➢ The place is historically known for its rich Buddhist culture.

More about the news

> ➢ The inscription is engraved on a memorial pillar depicting two illustrious daughters, along with an attendant.

- The script on the inscription is written in **Prakrit language and Brahmi characters of 2nd century C.E.**
- The text reads like, "(Sa)putarakana Maha(si) balikayam. Hatana viniya chhayathabho".
- It seems to record the erection of a memorial stone by a father (name not mentioned) of his two illustrious daughters namely Hatana and Viniya, explained K. Munirathnam Reddy, Director (Epigraphy), Archaeological Survey of India.

About Brahmi Script

- Brahmi script is one of the oldest writing systems in the Indian subcontinent, believed to have originated around the 3rd century BCE.

Historical Context

- **Origin**: Brahmi is thought to have developed from the Phoenician alphabet, adapting features of various scripts. It emerged during the reign of Emperor Ashoka, who used it for inscriptions.
- **Geographical Spread**: The script was prevalent in ancient India and influenced many Southeast Asian scripts, including those in countries like Sri Lanka, Thailand, and Indonesia.

Characteristics

- **Writing System**: Brahmi is an abugida, meaning each consonant has an inherent vowel sound that can be changed with diacritics.
- **Structure**: It consists of 46 basic characters, including consonants and vowels.
- **Direction**: It is written from left to right.

Significance

- **Cultural Influence**: Brahmi is the precursor to many scripts used in India today, such as Devanagari, Bengali, and Tamil. Its influence extends to scripts in other Asian languages.
- **Historical Records**: Inscriptions in Brahmi provide valuable insights into ancient Indian history, religion, and culture, particularly through the edicts of Ashoka.

Modern Study

- **Decipherment**: Brahmi was largely forgotten until the 19th century when scholars like James Prinsep successfully deciphered it, unlocking significant historical texts.

- ➢ **Linguistic Importance**: It serves as a crucial link in the study of Indo-Aryan languages and their evolution over time.

Example

- ➢ **Inscriptions**: The Edicts of Ashoka, carved on pillars and rocks across India, are some of the most famous examples of Brahmi script.

Legacy

- ➢ Brahmi remains an important subject of study in linguistics, archaeology, and history, reflecting the cultural and linguistic diversity of ancient India and its influence on subsequent writing systems across Asia.

Tele-MANAS (Tele Mental Health Assistance and Networking Across States)

Syllabus: GS-2; Health

Context

- ➢ Tele MANAS, a toll-free helpline (14416) available nationwide, offers various mental health services, has effectively handled over 14.7 lakh calls since its launch in October 2022.

About

- ➢ **Tele-MANAS** is an initiative by the Government of India launched on **October 10, 2022**, on World Mental Health Day.
- ➢ It aims to provide **24x7 mental health support** to individuals across India through a **tele-counseling** network, ensuring accessible, affordable, and timely mental healthcare.

Objectives:

- ➢ **Mental Health Services Access**: To ensure that people, especially in remote and underserved areas, can easily access mental health services.
- ➢ **Reduce Stigma**: Addressing the stigma surrounding mental health by providing confidential, professional help over the phone.

> ➢ **National-Level Network**: Creating a coordinated mental health service platform across states, leveraging technology.

Key Features:

> ➢ **24/7 Helpline**: The service offers a toll-free helpline (14416 and 1-800-891-4416), operational round-the-clock.
> ➢ **Multi-Layered Support**:
>   - o **Tier 1**: Counselling services provided by trained counselors.
>   - o **Tier 2**: Clinical-level services with consultations from mental health professionals like psychologists and psychiatrists.
> ➢ **Telemedicine Platform**: Utilizing the Indian government's **e-Sanjeevani** platform to enable virtual consultations.
> ➢ **Multi-Lingual**: Support provided in multiple Indian languages to cater to India's linguistic diversity.
> ➢ **Free of Cost**: The service is free for anyone in need of mental health support.

Key Stakeholders:

> ➢ **Ministry of Health and Family Welfare (MoHFW)**: Responsible for the implementation.
> ➢ **National Institute of Mental Health and Neurosciences (NIMHANS)**: Nodal agency for technical coordination.
> ➢ **International Partnerships**: Supported by WHO and other international bodies in expanding and improving the reach of mental health services in India.

Impact:

> ➢ **Reach**: Tele-MANAS aims to reach a large population, addressing both rural and urban mental health challenges.
> ➢ **Mental Health During Crises**: Particularly useful in times of crises like the COVID-19 pandemic, natural disasters, or any event that increases mental stress and anxiety among the population.

Challenges:

> ➢ **Awareness**: Lack of widespread awareness about the service in rural regions.
> ➢ **Cultural Barriers**: Mental health stigma and cultural resistance may prevent people from accessing the services.
> ➢ **Technology Access**: While the service aims to be inclusive, not all populations may have equal access to telephonic or internet-based services.

Government Initiatives Supporting Tele-MANAS:

> **National Mental Health Programme (NMHP)**: Launched in 1982 to address mental health care gaps in India, providing a framework under which Tele-MANAS operates.
> **Ayushman Bharat Digital Health Mission (ABDHM)**: Integration of mental health services into broader digital healthcare ecosystems.

Nobel Economics Prize 2024

Syllabus: GS-3; Economy

Context

> Nobel Economics Prize 2024 Awarded to Daron Acemoglu, Simon Johnson, and James Robinson

EKONOMIPRISET 2024
THE PRIZE IN ECONOMIC SCIENCES 2024

KUNGL. VETENSKAPS-AKADEMIEN
THE ROYAL SWEDISH ACADEMY OF SCIENCES

Daron Acemoglu
Massachusetts Institute of Technology, USA

Simon Johnson
Massachusetts Institute of Technology, USA

James A. Robinson
University of Chicago, IL, USA

"för studier av hur institutioner formas och påverkar välstånd"

"for studies of how institutions are formed and affect prosperity"

#NobelPrize

Awardees:

> **Daron Acemoglu** (Massachusetts Institute of Technology)
> **Simon Johnson** (Massachusetts Institute of Technology)
> **James A. Robinson** (University of Chicago)

Research Focus:

> Their research investigates the **differences in prosperity between nations**.
> Emphasizes the role of **societal institutions** in influencing a country's economic prosperity.

Key Findings:

> Societies characterized by **poor rule of law** and institutions that **exploit the population** do not experience sustainable growth or improvement.
> The laureates' work enhances understanding of the mechanisms behind **economic stagnation** and disparities among nations.

Nobel Committee's Statement:

> The committee of the Royal Swedish Academy of Sciences highlighted the importance of the research in explaining the relationship between **institutional quality** and economic performance.

Prize Background:

> The Nobel Memorial Prize in Economic Sciences is formally known as the **Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel**.
> Established in **1968** as a memorial to Alfred Nobel, who founded the original Nobel Prizes in medicine, physics, chemistry, literature, and peace.

Shale Gas

Syllabus: GS-3; Oil Dynamics

Context

> A study by the Science & Technology Ministry (October 2024) indicated significant shale gas generation potential in the eastern South Karanpura coalfield in Jharkhand.
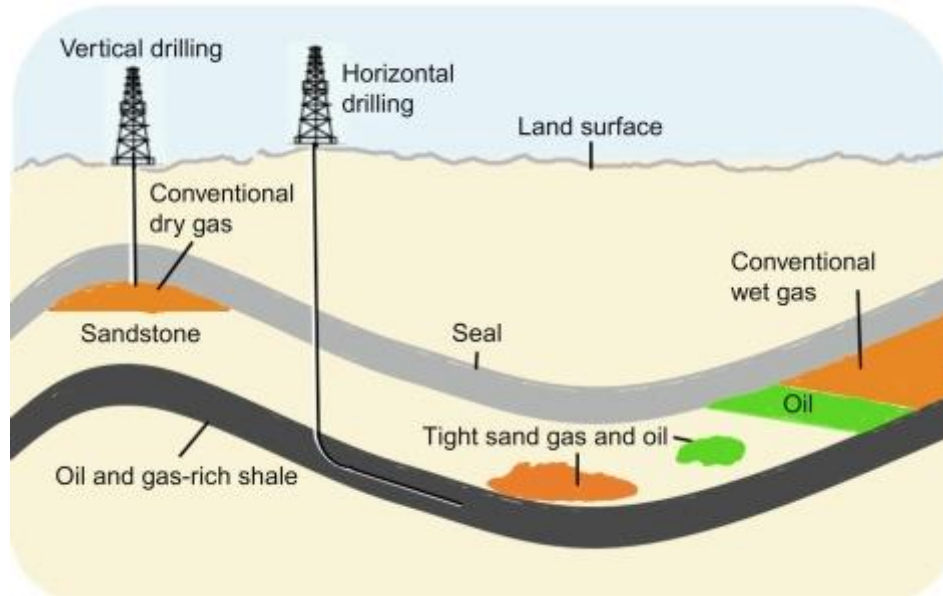
About

➢ Shale gas is a natural gas that is found trapped within shale formations, a type of sedimentary rock. It is primarily composed of methane (CH_4) and is considered an unconventional source of natural gas.

Formation and Extraction

➢ **Formation**: Shale gas is formed from the organic matter in shale rocks subjected to heat and pressure over millions of years. The gas is trapped within the fine-grained sedimentary rocks.

➢ **Extraction Techniques**:
   o **Hydraulic Fracturing (Fracking)**: A method that involves injecting high-pressure fluid into the shale rock to create fractures, allowing gas to flow more freely.
   o **Horizontal Drilling**: This technique allows for the drilling of long horizontal sections in the shale, maximizing gas extraction.

Global Production

➢ **Key Producers**: The United States is the leading producer of shale gas, followed by countries like Canada, China, and Argentina.

➢ **Impact on Energy Landscape**: The boom in shale gas production, especially in the U.S., has significantly changed the global energy market, reducing dependence on coal and oil, and contributing to lower natural gas prices.

Environmental Concerns

- ➢ **Water Usage**: Hydraulic fracturing requires large volumes of water, which can strain local water supplies.
- ➢ **Contamination Risks**: There are concerns about the potential for groundwater contamination from the chemicals used in fracking fluids.
- ➢ **Seismic Activity**: The injection of wastewater into deep wells has been linked to increased seismic activity in some regions.
- ➢ **Air Quality**: Emissions from shale gas operations can affect local air quality.

Economic Implications

- ➢ **Energy Security**: Shale gas production can enhance energy security by reducing reliance on foreign oil and gas supplies.
- ➢ **Job Creation**: The shale gas industry has created numerous jobs in extraction, transportation, and related sectors.
- ➢ **Investment Opportunities**: Significant investments have flowed into shale gas exploration and production, contributing to local and national economies.

Policy and Regulation

- ➢ **Regulatory Framework**: The regulation of shale gas extraction varies widely by country and region, with some places imposing strict regulations while others have more lenient policies.
- ➢ **Public Perception and Protests**: In many regions, shale gas extraction has faced opposition from local communities concerned about environmental impacts, leading to protests and calls for stricter regulations.

Conclusion

- ➢ Shale gas is a crucial component of the modern energy landscape, with significant economic, environmental, and geopolitical implications. Understanding its formation, extraction methods, benefits, and challenges is essential for grasping current energy debates and policy-making processes.

X-band radar

Syllabus: GS-3; Science & Tech, Disaster Management

Context

After devastating floods and landslides killed more than 200 people in Kerala's Wayanad district in July 2024, the Union Ministry of Earth Sciences approved an X-band radar to be installed in the district.

More to know

Radars, short for **Radio Detection and Ranging**, work by emitting radio waves and receiving the signals that bounce back after hitting an object. Here's how they function in simple terms:

1. **Signal Emission**: A transmitter emits radio waves aimed at an object.
2. **Reflection**: The waves bounce off the object, returning an echo to the radar's receiver.
3. **Analysis**: The receiver measures the time it took for the signal to return and its changes (like frequency shifts), allowing the radar to determine the object's distance, speed, and characteristics.

Doppler Radar

➢ A common application of radar is **Doppler radar**, used extensively in meteorology.
➢ The radar leverages the **Doppler effect**—the change in wave frequency based on the object's motion (like a cloud).
➢ It helps measure the speed and direction of moving objects such as storms, enabling accurate weather predictions.

X-Band Radar

➢ **X-band radar** emits signals in the X-band frequency range (8-12 GHz), which corresponds to wavelengths of 2-4 cm.
➢ This shorter wavelength provides higher resolution images, ideal for detecting smaller particles like raindrops and fog.
➢ However, its range is limited due to faster attenuation of high-frequency waves.
➢ In India, **X-band radars** are part of a broader radar network used for weather forecasting.
➢ These radars are especially useful in regions prone to landslides, as they can detect minute particle movements.
➢ The installation of new X-band radars is part of India's **Mission Mausam**, aimed at upgrading the country's meteorological infrastructure.

Radar Use in India

➢ India's radar network consists of both **X-band** and **S-band** radars (longer wavelength, 2-4 GHz), with the latter used for long-range detection, especially for cyclones.
➢ By 2026, under the Mission Mausam, India aims to install up to 60 more meteorological radars to improve weather forecasting capabilities, particularly in sensitive regions like the Northeast and mountainous districts.

NISAR

➢ The **NISAR** satellite, a joint NASA-ISRO project, will use both **L-band** (longer wavelength) and **S-band** radars to create high-resolution maps of Earth's land surfaces.
➢ This satellite, set for launch in 2025, will monitor natural processes such as changes in Earth's ecosystems and ice sheets.