

20 July, 2023

## Star Rating of Coal and Lignite Mines

**Context:** The Ministry of Coal extended the deadline for registering and self-evaluating the Star Rating of Coal and Lignite Mines from 15th July to 25th July 2023.

- **Aim:** The objective is to encourage competitiveness among mines and acknowledge exceptional performance by assessing their adherence to statutory requirements, utilization of advanced mining technology, and economic accomplishments.
- **Key Parameters:** The Star Rating policy seeks to assess mines by considering diverse factors across seven key parameters, namely,
  - Adoption of Technologies
  - Best Mining Practices
  - Economic performance
  - Environment-related parameters
  - Mining Operations
  - Rehabilitation & Resettlement
  - Worker-related Compliance and Safety & Security

### ➤ Process:

- Participating mines will go through a **self-evaluation process**.
- The top 10% performing mines will undergo validation through inspections by a committee.
- The remaining 90% of the mines will undergo an online review process.
- All participants can contribute to the evaluation by reviewing other mines.
- The evaluation will be conducted by the Coal Controller's Organization.
- Ratings awarded range from **Five Star to NO Star**, reflecting comprehensive assessments of each mine's achievements.

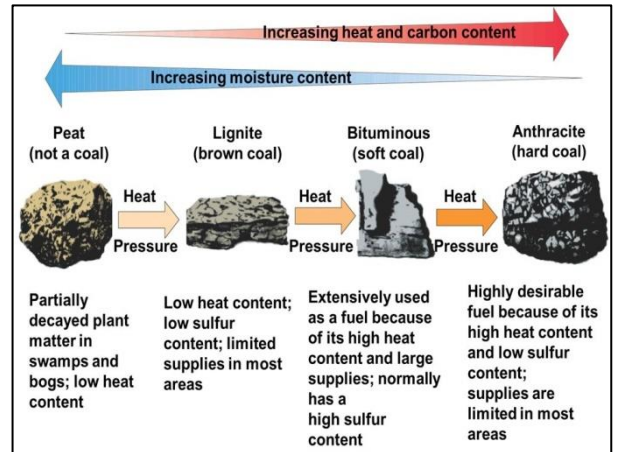
## Coal

### ➤ About:

- Coal, known as 'Black Gold,' is a fossil fuel found in sedimentary rocks.
- It serves as a conventional and widely available source of energy.
- Its applications range from domestic fuel to powering industries like iron and steel, steam engines, and electricity generation (thermal power).
- Leading coal producers worldwide include China, US, Australia, Indonesia, and India.
- Indian coal exhibits a high ash content of 35 to 45%, higher than the global average of around 15%, but it has low sulphur content at approximately 0.5%.

### ➤ Distribution:

- **Gondwana Coal Fields**
  - ✓ **Age:** Gondwana coal fields are approximately 250 million years old.
  - ✓ **Reserves and Production:** They contribute to 98% of India's total coal reserves and account for 99% of the country's coal production.
  - ✓ **Quality:** Gondwana coal is known for its metallurgical grade and superior quality.
  - ✓ **Locations:** These coal fields are found in regions such as Damodar (Jharkhand-West Bengal), Mahanadi (Chhattisgarh-Odisha), Godavari (Maharashtra), and Narmada valleys.
- **Tertiary Coal Fields**
  - ✓ **Age:** Tertiary coal fields are between 15 to 60 million years old.
  - ✓ **Characteristics:** They have low carbon content but are rich in moisture and sulphur.



## Face to Face Centres



- ✓ **Distribution:** Tertiary coal fields are mainly concentrated in extra-peninsular regions, including Assam, Meghalaya, Nagaland, Arunachal Pradesh, Jammu and Kashmir, Darjeeling in West Bengal, Rajasthan, Uttar Pradesh, and Kerala.

## Thirujnana Sambandar

**Context:** Prime Minister Narendra Modi has thanked USA for returning 105 trafficked antiquities which include a 14-15 Century idol of Shaiva Poet-Saint Thirujnana Sambandar.

- Sambandar, also known as Tirugnana Sambandar, was a Shaiva poet-saint from Tamil Nadu who lived in the 7th century CE.
- He was a child prodigy and lived for only 16 years but composed an impressive oeuvre of 16,000 hymns in complex meters.
- Among his compositions, 383 hymns with 4,181 stanzas have survived, expressing intense devotion to the Hindu god Shiva.
- Sambandar's works are part of the first three volumes of the Tirumurai, contributing to the philosophical foundation of Shaiva Siddhanta.
- He is considered one of the prominent Nayanars, Tamil Shaiva bhakti saints, and was a contemporary of another Shaiva poet-saint, Appar.
- Information about Thirujnana Sambandar mainly comes from Periya Puranam.

## Periya Puranam

- Periya Puranam is a Tamil epic that narrates the lives of the sixty-three Nayanars, the revered poets of Tamil Shaivism, who composed liturgical poems for Lord Shiva's worship.
- It was compiled during the 12th century by Sekkilhar, a devotee himself, and became part of the Shaiva canonical works.
- The Periya Puranam provides valuable historical evidence of trade with West Asia during its time.
- Sekkilhar's Tiruttondar Puranam or Periyapuranam is considered one of the most prominent hagiographic Puranas in Tamil, composed during the rule of Kulottunga II (1133–1150 CE).

## Nayanars and Alvars

Aspect	Nayanars	Alvars
Religious Group	Shaiva (devotees of Shiva)	Vaishnava (devotees of Vishnu)
Language	Tamil	Tamil
Period	6th to 10th century CE	5th to 9th century CE
Number of Saints	63	12
Key Saints	Appar, Sambandar, Sundarar	Nammalvar, Periyalvar, Andal
Devotional Focus	Devotion to Lord Shiva	Devotion to Lord Vishnu
Primary Literature	Tirumurai	Divya Prabandham
Main Location	Tamil Nadu and surrounding	Tamil Nadu and Andhra Pradesh
Literary Style	Poems and hymns	Poetry and songs

## Face to Face Centres



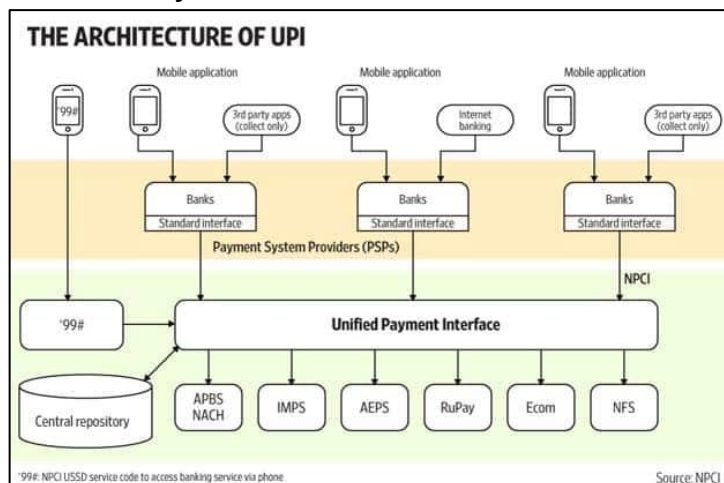
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## Universal Postal Union (UPU)

**Context:** The Universal Postal Union will assess UPI's integration with cross-border remittances through the global postal network, as per a recent official statement.

- The Universal Postal Union (UPU) is a specialized agency of the United Nations.
- It serves as the primary forum for international cooperation in the postal sector.
- UPU was established in 1874 by the Treaty of Bern.
- It is the world's second oldest international organization.
- UPU's mandate is to ensure universal access to postal services.
- The headquarters of the Universal Postal Union is located in Bern, Switzerland.
- **Functions:**
  - UPU coordinates postal policies among member nations and the global postal system.
  - Sets regulations for international mail exchanges and recommends growth strategies for mail, parcels, and financial services.
  - Ensures a universal network of up-to-date products and services for all.
  - Provides advisory, mediating, and liaison services, along with technical assistance as needed.
- **Membership:**
  - Membership in the UPU is open to any United Nations member country.
  - Non-UN member countries can join if their request is approved by at least two-thirds of UPU member countries.
  - The UPU currently has **192 member countries**.
- **Structure:**
  - The **Congress** is the highest authority of the UPU and convenes every four years.
  - The **Council of Administration** oversees UPU activities between Congress sessions and addresses regulatory, administrative, legislative, and legal matters.
  - The **Postal Operations Council**, comprising 48 member countries elected during Congress, handles technical and operational aspects of the UPU.
  - The **International Bureau** serves as the secretariat, providing logistical and technical support to UPU bodies.

## Universal Payment Interface



## Face to Face Centres



## NEWS IN BETWEEN THE LINES

### International Moon Day



International Moon Day is observed on July 20th to commemorate the historic moon landing, considered one of the greatest achievements in human history.

**UN Recognition:** The United Nations decided to mark this day in 1971.

**Apollo Mission Mirrors:** Astronauts from Apollo 11, Apollo 14, and Apollo 15 missions left mirrors on the moon's surface, serving as scientific instruments to measure the speed of light accurately.

**Buzz Lightyear:** A character in Pixar's "Toy Story" series was named after Buzz Aldrin, the second man to walk on the moon, showcasing the cultural impact of the moon landing.

**Lunar Poetry:** Emily Dickinson's hauntingly beautiful poem "The Moon" (or "Nocturne") eloquently describes the enigmatic presence of the moon.

**Mare Tranquillitatis:** The Sea of Tranquility (Mare Tranquillitatis) was the famous landing site for Apollo 11, where Neil Armstrong and Buzz Aldrin set foot on the moon.

### Namami Gange



Recently, in Chamoli district of Uttarakhand, a tragic incident occurred at a sewage treatment plant (STP) under the Namami Gange project.

**Namami Gange Program:**

Namami Gange Program is an Integrated Conservation Mission initiated by the Government of India in June 2014. It is a flagship program under the Ministry of Jal Shakti, aimed at achieving the dual objectives of effective pollution abatement and the conservation and rejuvenation of the National River Ganga (Ganges).

**Implementing Authority:** Operated by NMCG and SPMGs under Ministry of Jal Shakti.

**Phase 2 Focus:** Focus on project completion, wetland revival, and sustainable policies.

**Main Pillars:** Sewage treatment, river-front development, biodiversity, awareness, and more.

**Related Initiatives:** Ganga Action Plan, NRGB, Clean Ganga Fund, waste disposal ban, and public monitoring with Bhuvan-Ganga Web App.

### Ancient Predator



Recently, a rare fossil discovery in China suggests that mammals might have hunted dinosaurs for food.

**Discovery:** A rare fossil discovery in China suggests that some early mammals may have hunted dinosaurs for food. The fossil shows a badger-like mammal attacking a small, beaked dinosaur with their skeletons intertwined.

**Location:** The find comes from a site known as "China's Pompeii," where volcanic activity buried creatures in their tracks with mud and debris.

**Prehistoric Hunt:** The fossil captures a prehistoric hunt, frozen in stone like a freeze frame, from around 125 million years ago, during the Cretaceous period.

**Significance:** This discovery challenges the perception that dinosaurs ruled the world during the Age of Dinosaurs, while mammals cowered in the shadows. It suggests that some mammals may have actively preyed on dinosaurs, even those larger than themselves.

**Fossil Authenticity:** The study authors acknowledge the possibility of fossil forgeries but are confident that this fossil, discovered by a farmer in 2012, is genuine after careful preparations and analysis of rock samples.

### "GPUs: Transforming AI and Beyond"



The global surge in artificial intelligence (AI) has been fueled by the emergence of graphics processing units (GPUs)

**Graphics Processing Units:**

Graphics Processing Units (GPUs) are specialized electronic circuits or processors designed to accelerate and enhance graphics rendering tasks in computers, gaming consoles, and other devices.

**GPU's AI Impact:** Graphics Processing Units (GPUs) have revolutionized AI globally. Originally for graphics tasks, GPUs excel in deep learning by executing parallel calculations, advancing AI models with larger datasets.

**CPU vs. GPU:** CPUs are latency-oriented and task-parallel, while GPUs are throughput-oriented and data-parallel. GPUs' matrix operations make them ideal for AI.


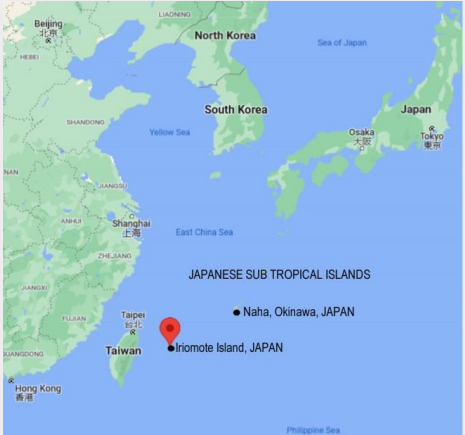
**FPGAs:** Field Programmable Gate Arrays (FPGAs) offer AI customization but are harder to program than GPUs.

## Face to Face Centres





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<p><b>Digital Time Vouchers</b></p> 	<p>Recently, Election Commission of India introduced digital time vouchers for political parties' campaigning on Doordarshan &amp; All India Radio during elections.</p> <p><b>Time Voucher Denominations:</b> Political parties receive 5-minute and 10-minute digital time vouchers for telecasts on Doordarshan and broadcasts on AIR.</p> <p><b>Representative Allocation:</b> Parties can choose representatives, with a maximum of 20 minutes per representative on either Doordarshan or AIR.</p> <p><b>Scheme Background:</b> The scheme was initiated in 1998 under the Representation of People Act to ensure equitable access to government-owned electronic media for election campaigning.</p> <p><b>Time Allotment Basis:</b> Parties receive an equitable base time on DD &amp; AIR, with additional time based on their poll performance in the last assembly or general elections.</p> <p><b>Predetermined Telecasts:</b> Prasar Bharati Corporation, in consultation with ECI and political party representatives, predetermines the telecasts/broadcasts through a lot process.</p>
<p><b>Place in News</b></p> <p><b>Iriomote Island</b></p>	<p>Recently, a colony near Japan's Iriomote Island showed resilience during a bleaching event. Despite bleaching in 2016, signs of recovery were observed by 2020.</p> <p><b>Geographical Location:</b> Iriomote Island is located in the Yaeyama Islands, part of Okinawa Prefecture in Japan. It is the largest and southernmost inhabited island in the Yaeyama archipelago.</p> <p><b>Unique Ecosystem:</b> Known as the "Galapagos of the East," the island features lush jungles, mangrove forests and diverse wildlife.</p> <p><b>Endangered Species:</b> The critically endangered Iriomote cat exclusively inhabits this island.</p> <p><b>National Park:</b> Iriomote Island is part of the Iriomote-Ishigaki National Park, aimed at preserving its unique ecosystem and cultural heritage.</p> <p><b>Coral Bleaching:</b> Coral bleaching impacts coral reefs globally, causing ecological and socioeconomic consequences.</p> <p><b>Conservation Measures:</b> The island is protected under the Wildlife Protection Act and supported by financial assistance for conservation efforts. The Wildlife Crime Control Bureau enhances enforcement against poaching and illegal wildlife trade.</p> 

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