



12 July, 2023

Lambani Art

Context: In the 3rd G20 CWG meeting in Hampi, a Guinness world record was set for the 'largest display of Lambani Art items'.

About the Record

- Lambani women artisans from Sandur Kushala Kala Kendra Kendra (SKKK) collaborated to produce the art items.
- The items showcased GI-tagged Sandur Lambani embroidery with 1755 patchworks.
- The Guinness World Record achievement aligns with the PM's campaign, Mission 'LiFe', promoting an environmentally conscious lifestyle.
- The CWG's 'Culture for LiFe' initiative also aims to promote sustainability and concerted action towards a greener future.

About the Art form

- Lambani embroidery is a traditional craft practiced by the Lambani community, also known as the Banjara community, in Karnataka.
- It involves vibrant threads, mirror work, and intricate stitch patterns on various textile items.
- Lambani art received the Geographic Indication (GI) tag in 2010.
- The craft utilizes discarded fabric pieces skillfully stitched together.
- Practiced in villages like Sandur, Keri Tanda, Mariyammanahalli, Kadirampur, Sitaram Tanda, Bijapur, and Kamalapur.
- Lambani embroidery provides economic empowerment to women and preserves cultural heritage.

Lambani Community

- The Lambani community, also known as Lambadis or Banjaras, originated from Afghanistan and migrated to Rajasthan before spreading across Karnataka and other parts of India.
- Historically, they are believed to have assisted Mughal Emperor Aurangzeb in transporting goods to southern India during the 17th century.
- In the 18th century, the British authorities enacted the Criminal Tribe Act of 1871, restricting the free movement of the Lambani community.
- The language spoken by the Banjara community is known as "Gorboli," "Gor mati Boli," or "Brinjari," which is an independent dialect categorized under Indo-Aryan languages.
- The Lambani community is known by different names in different regions, such as Lambada or Lambadi, Sukali in Andhra Pradesh, Lambani in Karnataka, and Gwar or Gwaraiya in Rajasthan.

Protection of Plant Varieties and Farmers Rights' Authority (PPVFRA)

Context: The appeal filed by PepsiCo against the order of PPVFRA regarding the patent rights for its 'unique potato' variety was dismissed by the Delhi High Court recently, citing lack of merit.

- PepsiCo's registration for its potato variety 'FL 2027' was revoked by the PPVFRA under the grounds provided in the PPV&FR Act.
- 'FL 2027' is a chipping potato variety suitable for chip manufacturing due to its desirable characteristics.
- PepsiCo claimed that the variety was developed by a former employee of Frito-Lay Agricultural Research.
- PepsiCo India had a certificate of registration for 'FL 2027' but it was revoked on December 3, 2021 based on an application by a farmers' rights activist.

PPV&FR Act

- The objectives of the PPVFR Act are as follows:
 - Facilitate an effective system for the protection of plant varieties and the rights of farmers.

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12 July, 2023

- Encourage the development of new plant varieties.
- Protect the rights of farmers concerning their contribution to conserving plant genetic resources.
- Facilitate the growth of the seed industry, ensuring the availability of high-quality seeds.
- The PPVFR Act, enacted in India in 2001, aims to implement the TRIPS Agreement.
- The Act maintains the core principles of TRIPS, which consider intellectual property rights as an incentive for technological innovation.
- However, the Act also includes robust provisions to safeguard farmers' rights.
- Under the Act, farmers are permitted to plant, grow, exchange, and sell patent-protected crops and seeds, with restrictions only on selling them as "branded seed."
- The Act recognizes three roles for farmers: cultivator, breeder, and conserver.

Rights under the Act

- **Breeders' Rights:**
 - Breeders have exclusive rights to produce, sell, market, distribute, import, or export the protected plant variety.
 - They can appoint agents or licensees to exercise these rights.
 - Civil remedies are available in case of infringement of breeder's rights.
- **Researchers' Rights:**
 - Researchers can use registered plant varieties for conducting experiments or research.
 - The use of a variety as an initial source for developing another variety is allowed, but repeated use requires prior permission from the registered breeder.
- **Farmers' Rights:**
 - Farmers who have evolved or developed a new plant variety can register and protect it similar to breeders.
 - Farmers' varieties can be registered as extant varieties.
 - Farmers can save, use, sow, re-sow, exchange, share, or sell their farm produce, including seeds of protected varieties, except for selling branded seeds of protected varieties.
 - Farmers are eligible for recognition and rewards for conserving Plant Genetic Resources.
 - Compensation can be provided to farmers for non-performance of a variety.
 - No fee is required from farmers in proceedings before the Authority, Registrar, Tribunal, or High Court under the Act.

Majorana Zero Mode

Context: Microsoft has found a way to create an elusive kind of particle Majorana zero mode that could potentially revolutionize quantum computing.

What is Majorana?

- Majorana refers to fermions that are their own antiparticles.
- The concept originated from Paul Dirac's 1928 prediction of antiparticles for each particle.
- Dirac's equation allowed for the possibility of particles that could be their own antiparticles.
- Majorana fermions are named in honour of Ettore Majorana, an Italian physicist.
- Neutrinos are one class of subatomic particles that physicists believe could potentially be Majorana fermions.

What is Majorana Zero Mode?

- Each particle possesses four quantum numbers that serve as its unique identifiers.
- Fermions, characterized by half-integer values of quantum spin, can be any particle with this property.

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12 July, 2023

- When two particles bound together have a total quantum spin of a half-integer value, they can be classified as fermions.
- Majorana fermions refer to bound states that are their own antiparticles, resulting in annihilation upon meeting.
- Majorana zero modes specifically describe these bound states that exhibit the characteristics of Majorana fermions.

How does it help in computing?

- Majorana zero modes can enable topological quantum computing, which offers enhanced information protection.
- In topological systems, degeneracy occurs when a system has multiple states at the lowest energy level.
- Topology studies the properties of matter that remain unchanged under continuous deformations.
- Majorana zero modes consist of paired entities (electron and hole) that can be separated while maintaining the qubit's coherence.
- Even if one entity is disturbed, the overall qubit remains protected, preserving the encoded information in topological systems.

three generations of matter (fermions)			
	I	II	III
mass	$\approx 2.4 \text{ MeV}/c^2$	$\approx 1.275 \text{ GeV}/c^2$	$\approx 172.44 \text{ GeV}/c^2$
charge	$2/3$	$2/3$	$2/3$
spin	$1/2$	$1/2$	$1/2$
	u up	c charm	t top
	d down	s strange	b bottom
QUARKS			
mass	$\approx 4.8 \text{ MeV}/c^2$	$\approx 95 \text{ MeV}/c^2$	$\approx 4.18 \text{ GeV}/c^2$
charge	$-1/3$	$-1/3$	$-1/3$
spin	$1/2$	$1/2$	$1/2$
	e electron	μ muon	τ tau
	ν_e electron neutrino	ν_μ muon neutrino	ν_τ tau neutrino
LEPTONS			
mass	$\approx 0.511 \text{ MeV}/c^2$	$\approx 105.67 \text{ MeV}/c^2$	$\approx 1.7768 \text{ GeV}/c^2$
charge	-1	-1	-1
spin	$1/2$	$1/2$	$1/2$
	$< 2.2 \text{ eV}/c^2$	$< 1.7 \text{ MeV}/c^2$	$< 15.5 \text{ MeV}/c^2$
	0	0	0
	$1/2$	$1/2$	$1/2$

What are fermions?

- Fermions are subatomic particles with odd half-integral values of angular momentum (spin).
- They are named after Fermi-Dirac statistics, which describe their behavior.
- Examples of fermions include leptons (e.g., electrons, muons), baryons (e.g., neutrons, protons, lambda particles), and certain nuclei.
- Fermions adhere to the Pauli exclusion principle, which prohibits multiple particles of the same type from occupying the same quantum state.
- The exclusion principle prevents the collapse of matter into a highly dense state and governs electron configurations in atoms.
- Fermions can be created and annihilated in pairs of particle-antiparticle.
- In contrast to fermions, bosons are particles that have integral values of angular momentum (spin).

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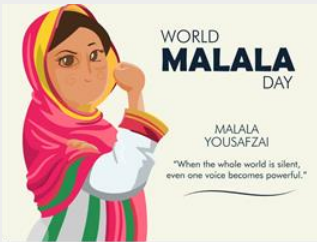




12 July, 2023

NEWS IN BETWEEN THE LINES

World Malala Day



World Malala Day is celebrated on July 12 each year to honor and celebrate Malala Yousafzai, the youngest Nobel Peace Prize recipient.

UN Designation: In 2015, the United Nations officially designated July 12 as International Malala Day.

Global Celebration: People worldwide commemorate International Malala Day by organizing events focused on promoting education for girls and women.

About Malala Yousafzai:

- Malala Yousafzai gained global attention after surviving a Taliban attack in 2012 for advocating girls' right to education.
- She is the founder of the **Malala Fund**, dedicated to promoting girls' access to quality education.
- Malala graduated from Oxford University in 2017, studying Philosophy, Politics and Economics.
- She was appointed as a UN Messenger of Peace and received the Amnesty International Ambassador of Conscience Award for her advocacy of human rights.
- Malala authored the book "**I Am Malala**" sharing her journey and fight for education rights.

In 2022, she launched The Malala Network, supporting young women working towards gender equality.

Places of Worship Act



Recently, the Supreme Court granted the Centre an extension until October 31 to clarify its position on the validity of the Places of Worship Act,

Places of Worship Act: The Places of Worship Act prohibits the conversion of any place of worship and aims to maintain the religious character of these places as it existed on August 15, 1947.

Objective: The Places of Worship Act aims to prohibit the conversion of religious places and maintain their religious character as it existed on August 15, 1947.

Identity Preservation: The Act seeks to preserve the historical, cultural, and religious significance of religious places across India.

Exemptions: The Act exempts certain places of worship, such as ancient and historical monuments or sites covered under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Criticisms: The Places of Worship Act has faced criticism for barring judicial review, imposing a retrospective cutoff date and allegedly infringing upon religious rights, raising concerns about its compatibility with secularism.

Provisions: Section 3 prohibits conversion of places of worship, Section 4(1) preserves their religious character as of August 15, 1947 and Section 4(2) abates pending suits, except for conversions after the cutoff date.

Kuno National Park



Recently, the seventh African cheetah (Tejas) died in four months in Kuno National Park, Madhya Pradesh, likely due to inbreeding.

Location: Kuno National Park is situated in Sheopur district of Madhya Pradesh, India, near the Vindhyan Hills.

Area and Status: Covering an area of 748 sq. km, the park was initially a wildlife sanctuary and later upgraded to a national park in 2018.

Kuno River: The park is named after the Kuno River, a significant tributary of the Chambal River, which flows through the area.

Biodiversity: The park is home to various wildlife species, including jungle cat, Indian leopard, sloth bear, Indian wolf, striped hyena, golden jackal, Bengal fox, dhole and over 120 bird species.

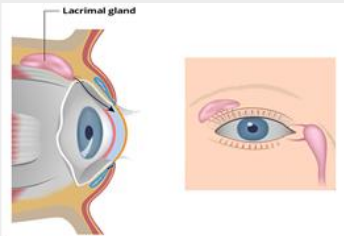
Project Cheetah: It is the world's first inter-continental large wild carnivore translocation project approved by the Supreme Court of India in January 2020, aiming to reintroduce around 50 cheetahs into the wild over the next five years.

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12 July, 2023

Lacrimal Gland



What is Lacrimal Gland?

The lacrimal gland is a gland located in the upper outer corner of the eye socket, responsible for producing tears, which help lubricate, nourish and protect the surface of the eye.

Function: It plays a vital role in maintaining eye health and ensuring proper moisture and lubrication for clear vision.

Tear Components: Tears contain water, mucus, oils, antibodies and enzymes that help keep the eyes moist and protect against infections.

Bulging Conjunctiva: When a person cries or experiences emotional distress, the lacrimal gland becomes active, leading to tear secretion, causing the bulging of the conjunctiva.

Flap Valve: The terminal part of the lacrimal duct has a flap valve that prevents the tear fluid from being pushed back by air, for example, when sneezing or blowing the nose.

GST Council



Recently, the GST Council approved a uniform 28% tax on online gaming, casinos and horse racing.

What is GST Council?

The GST Council is a constitutional body responsible for making decisions on various aspects of the Goods and Services Tax (GST) in India.

Composition: The Council is chaired by the Union Finance Minister and consists of the finance ministers of all the states and union territories with legislatures, as well as other members as deemed necessary.

Key Functions: The Council determines the tax rates for goods and services, recommends measures for revenue augmentation, resolves disputes between the Centre and states and addresses other policy-related matters.

GST Appellate Tribunal: The Council decided to establish a GST appellate tribunal by August 1 to resolve GST-related litigation.

Place in News

Pyongyang

Recently, North Korea launched a long-range ballistic missile from the Pyongyang area, with the intention of targeting the United States.



Location: Pyongyang is the capital city of North Korea, located in the western part of the country.

Significance: It is the political, cultural and economic center of North Korea.

Political Importance: Pyongyang serves as the seat of power for the ruling Workers' Party of Korea and the government of North Korea.

Architectural Marvels: The city is known for its impressive architecture, including iconic landmarks such as the Juche Tower and the Kumsusan Palace of the Sun.

Cultural Centers: Pyongyang is home to numerous cultural institutions, museums and theaters, showcasing the country's art, history, and performing arts.

Security: The peninsula has experienced increased security tensions due to North Korea's frequent missile launches and pledges to enhance its weapons development.

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