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Haryana State Employment of Local Candidates Act, 2020

Context: The Punjab and Haryana High Court nullified a 2020 Haryana government law granting 75% reservation in private jobs to state residents.

- The law aimed to provide 75% job reservation in the private sector for Haryana residents.
- The court found the law violative of fundamental rights in the Constitution, while the Government defended it on the basis of Article 16(4) on the Indian Constitution.
- The ruling rendered the law ineffective from its initiation.
- The State government has expressed its will to file a Special Leave Petition in the Supreme Court.
- **Details of the Law:**
 - The law, known as The Haryana State Employment of Local Candidates Act, 2020, was passed in November 2020.
 - It reserved 75% of jobs in the private sector with a monthly salary below Rs 30,000 for residents of Haryana.
 - The law received the Governor's assent on March 2, 2021, and was implemented on January 15, 2022.
- **Scope of the Law:**
 - The law covered various entities, including companies, societies, trusts, and individual employers with 10 or more employees.
 - Central or state governments and their affiliated organizations were exempted from the law.
- **Operational Details:**
 - To avail of the reservation, candidates had to be "domiciled in the State of Haryana" and register on a designated online portal.
 - Employers were mandated to conduct recruitments exclusively through this portal.
- **Provision of Reservation in the Constitution**
 - **Article 15(4):** Allows the State to make special provisions for the advancement of socially and educationally backward classes and for Scheduled Castes and Scheduled Tribes.
 - **Article 16(4):** Permits the State to reserve appointments or posts in favor of any backward class of citizens not adequately represented in state services.
 - **Article 16(4A):** Provides for reservation in the promotion of posts in services under the state for members of Scheduled Castes and Scheduled Tribes.
 - **Article 16(4B):** Enables the state to fill unfilled vacancies reserved for Scheduled Castes and Scheduled Tribes in the following year.
 - **Article 39A:** Mandates the State to ensure justice and free legal aid to weaker sections of society.
 - **Article 243D:** Specifies reservation for Scheduled Castes, Scheduled Tribes, and Women in Panchayati Raj Institutions.
 - **Article 243T:** Specifies reservation for Scheduled Castes, Scheduled Tribes, and Women in Urban Local Bodies.
 - **Article 330 and Article 332:** Deals with reservation of seats for Scheduled Castes and Scheduled Tribes in the Parliament and State Legislative Assemblies, respectively.

Global Talent Competitiveness Index

Context: India has slipped from 83rd to 103rd in the Global Talent Competitiveness Index over the past decade.

- **India's Decline:**
 - India has experienced a significant drop from the 83rd position to the 103rd position in the GTCI over the last decade.
 - The current ranking places India between Algeria (102) and Guatemala (104), both classified as lower-middle-income countries.
- **Comparison with Other Countries:**
 - India's current rank is below the median score of the countries evaluated in the GTCI.
 - Notable countries performing better than India include Rwanda, Paraguay, Tunisia, Namibia, Bolivia, Ghana, El Salvador, Gambia, Kenya, Morocco, and Eswatini.
- **Index Development:**
 - The GTCI, formulated by the prestigious business school INSEAD, assesses how countries and cities attract, grow, and retain talent.
 - It comprises two key sub-indices: input, measuring regulatory and business environments, and output, evaluating the quality of talent.
 - The index serves as a valuable resource for decision-makers to understand global talent competitiveness and formulate strategies to enhance their economies.
- **BRICS Performance:**
 - Within the BRICS group, India holds the lowest GTCI rank, with China leading at 40, followed by Russia (52), South Africa (68), and Brazil (69).
 - This suggests that India is facing unique challenges in talent competitiveness compared to its BRICS counterparts.
 - Analyzing and addressing these challenges is crucial for India's economic development and global competitiveness.

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- **Reasons for India's Fall:**
 - The report attributes India's decline in the GTCI to a slump in business sentiment, adversely affecting its ability to attract talent.
 - Challenges in 'Attracting Talent' both from overseas (127th) and within the country (129th) contribute significantly to the decline.
 - Understanding the root causes of these challenges is essential for devising effective strategies to reverse the negative trend.
- **Positive Aspects for India:**
 - Despite the overall decline, the report identifies Global Knowledge Skills as India's best-performing area within the GTCI.
 - This section focuses on innovation and software development, showcasing India's strengths in certain aspects of talent competitiveness.
 - Leveraging these strengths can be instrumental in enhancing overall talent competitiveness.
- **Performance of Other Emerging Countries:**
 - The report acknowledges improvements in other emerging countries, with China, Indonesia, and Mexico cited for special mention.
 - Analyzing the success stories of these nations can provide insights into effective talent development strategies.
- **Top Countries in GTCI:**
 - Singapore, Switzerland, and the United States maintain their positions as the top three countries in the GTCI.
 - Studying the practices and policies of these leading countries can offer valuable lessons for others striving to enhance their talent competitiveness.
 - Gaining insights from these top performers can inform the development of effective strategies at the national level.
- **European Dominance and Asian Changes:**
 - European countries continue to dominate the top 25 rankings in the GTCI.
 - Japan's drop outside the top 25 and South Korea's ascent in its place signify evolving dynamics in the talent competitiveness landscape.

Fractal Dimensions and Quantum Physics

Context: Physicists employed the fractal geometry approach to investigate quantum systems in dimensions such as 1.26 or 1.58.

- Uncertainty is an inherent feature of all systems, independent of precision or accuracy in measurement.
- Physicists seek practical approaches to study quantum systems, considering the inherent limitations imposed by uncertainty.

Fractals

- Fractals are special shapes in math with intricate details at very tiny scales.
- They show similar patterns when you zoom in, no matter how much you magnify them.
- Unlike regular shapes, fractals don't follow normal scaling rules when you make them bigger.
- Doubling the size of a regular shape increases its area or volume by a fixed factor, but fractals don't follow a simple rule.
- Fractals have something called a fractal dimension, which measures how they scale and describes their complexity.
- Fractals differ from typical shapes because their scaling doesn't follow standard rules.
- Regular shapes scale in integer powers (like squares doubling in area), but fractals can scale by non-integer powers.
- Fractal geometry is a part of math called measure theory, helping understand the intricate and self-repeating structures in fractals.

Non-Integer Dimensions - Fractal Dimensions:

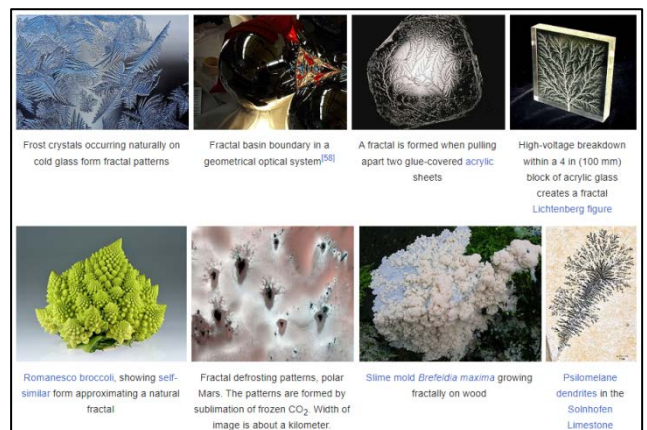
- Physicists respond to uncertainty through non-integer small dimensions, known as fractal dimensions.
- The dimensionality of a quantum system plays a crucial role in studying its properties.
- Fractal dimensions, such as 1.55 or 1.58, offer a unique perspective on quantum behavior between one and two dimensions.

Behavior of Quantum Systems in Fractal Dimensions:

- Physicists utilize the fractal geometry approach to study quantum systems in dimensions beyond integers.
- Examples include dimensions like 1.55 or 1.58, exploring the behavior of quantum systems in non-integer dimensions.

Fractality in Nature:

- Fractality is widespread in nature, characterized by self-similarity.
- Shapes are considered fractal if parts at a smaller scale resemble those at a larger scale.



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- The Koch snowflake is a classic example of a fractal shape, evolving through repeated modifications.
- **Fractal Dimensions in Nature:**
 - Fractal dimensions quantify a shape's ability to fill space as it evolves.
 - The Koch snowflake, for instance, has a fractal dimension of around 1.26.
 - Fractality is observed in various natural patterns, including human fingerprints, tree stumps, snail shells, and more.
- **Fractals in the Quantum Realm:**
 - Fractals are present in the quantum realm, as demonstrated by studies on neodymium nickel oxide and graphene.
 - Magnetic domains in neodymium nickel oxide exhibit a fractal arrangement.
 - Graphene's electron density pattern at the microscopic scale displays an almost fractal distribution.
- **Applications of Fractality:**
 - **Historical Applications and Brownian Motion:**
 - Fractal analysis was first applied in physics to describe Brownian motion.
 - Brownian motion refers to the random motion of small particles in a liquid medium.
 - **Data Compression and Antenna Design:**
 - Fractality is applied in data compression to reduce image size during storage.
 - Compact antennae design leverages fractality without compromising performance.
 - Fractality is utilized in studying patterns in galaxies, planets, bacteria cultures, chromatography, and ion-exchange processes.
 - **Implications and Insights:**
 - Fractals reveal a new kind of order in systems, providing insights into familiar shapes within spaces with non-integer dimensions.
 - Interactions with natural processes highlight self-similar structures that become increasingly complex over time.
 - Applications extend to diverse fields, emphasizing the potential for gaining new perspectives and solving complex problems through fractal geometry.

NEWS IN BETWEEN THE LINES

Onattukara Sesame



Recently the efforts are being made to expand the cultivation of Onattukara sesame in Alappuzha district of Kerala.

About Onattukara Sesame:

- Kerala Agriculture University (KAU) had secured GI tag in January 2023 after extensive three-year research for Onattukara sesame.
- Traditional Ayurvedic practitioners utilize Onattukara sesame in treating rheumatism.
- It is high in Vitamin E and antioxidants, oleic acid, linoleic acid and palmitoleic acid.
- It is grown across 600 hectares in 43 local bodies spanning Alappuzha and Kollam districts.
- Various groups, including individuals, collectives, Kudumbashree groups, self-help groups, and joint liability groups, are incentivized for cultivation efforts.

BDS Movement



Recently, the Indian poet Ranjit Hoskote left the Documenta 16 committee amid accusations of anti-Semitism and ties to the BDS movement.

About BDS Movement:

- BDS (Boycott Divestment, Sactions) movement was founded in 2005 by over 170 Palestinian groups, aiming to advocate for Palestinian rights through nonviolent means.
- Its primary goal is to oppose discrimination, including anti-Semitism and Islamophobia, while seeking to pressure Israel to comply with international law.
- It opposes discrimination, including anti-Semitism and Islamophobia, seeking to pressure Israel to comply with international law.
- It seeks an end to Israeli occupation in specific territories like the West Bank, East Jerusalem, Gaza, and the Golan Heights.
- It advocates for the recognition of full fundamental rights for Arab-Palestinian citizens in Israel and the right of Palestinian refugees to return to their homes.

Freemartin



About Freemartin:

- Freemartin is an infertile female cattle with masculinized behavior and non-functioning ovaries.
- It appears female but has altered female reproductive development due to acquiring anti-Müllerian hormone from a male twin.

Freemartins in Cattle: Freemartin denotes sterile female cattle born from twin pregnancies involving a male and female in the same uterus.

Cause of Freemartinism: This condition arises due to blood exchange between male and female foetuses during gestation, leading to the transfer of cells carrying the Y chromosome from the male twin to the female twin.

Genetic Attribution and Effects: Freemartinism is attributed to the Y chromosome influence on the incomplete development of the female foetus's reproductive system, resulting in an underdeveloped or non-functional reproductive tract.

Role in Agriculture:

- In agricultural settings, farmers use physical or behavioral traits to identify freemartins, thereby excluding them from breeding herds due to their inability to reproduce.
- This culling practice aims to enhance overall reproductive efficiency in cattle herds.

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<p>Genetic Chimaera</p> 	<p>In a recent study, scientists have reported successfully producing a live infant chimeric monkey of the species <i>Macaca fascicularis</i>.</p> <p>About Chimaera:</p> <ul style="list-style-type: none"> ➤ A chimaera refers to an organism composed of cells with different genetic makeups or genotypes. ➤ Chimerism is observed in various species, such as the half-sider budgerigar, anglerfish and marine sponges, showcasing genetic diversity within a single organism. <p>Human Chimerism:</p> <ul style="list-style-type: none"> ➤ Human chimerism occurs due to genetic changes in cells or the fusion of zygotes, leading to individuals with multiple genetic makeups. ➤ This phenomenon is observed in cases of multiple pregnancies, organ transplants and blood-group disparities. <p>Medical Relevance: Chimerism discoveries are often made during medical tests, impacting organ transplants, prenatal screenings and understanding the complexities of human genetics.</p> <p>Recent Advancements: Breakthroughs include generating live chimeric monkeys from embryonic stem cells in non-human primates, showing promise for biomedical research models.</p> <p>Ethical Concerns: The creation of chimeras raises ethical questions, particularly regarding human applications, necessitating careful consideration and regulation.</p>
<p>Place in News</p> <p>Indonesia</p>	<p>Recently, over 500 Rohingya refugees arrived in Indonesia from Myanmar.</p> <p>Indonesia (Capital: Jakarta)</p> <p>Location: Indonesia is the world's largest archipelagic state with over 17,000 islands, located in Southeast Asia and Oceania between the Indian and Pacific oceans.</p> <p>Land Boundaries: Indonesia shares its land boundaries with Malaysia (on Borneo and Sebatik), Papua New Guinea (on New Guinea) and East Timor (on Timor).</p> <p>Maritime Boundaries: It shares its maritime boundaries with Singapore, Malaysia, Vietnam, the Philippines, Palau and Australia.</p> <p>Physical Features: Indonesia boasts Puncak Jaya as its highest peak, Lake Toba as the largest lake and experiences significant volcanic activity with landmarks like Mount Semeru and Mount Bromo.</p> 
<p>Personality in News</p> <p>Rani Laxmibai</p>	<p>Recently the Prime Minister of India paid his heartfelt tributes to the symbol of the bravery of Indian women power, Rani Lakshmbai on her birth anniversary.</p> <p>Rani Laxmibai (19 November 1828-18 June 1858):</p> <ul style="list-style-type: none"> ➤ Rani Laxmibai was born on November 19, 1828, as Manikarnika Tambe in Varanasi, UP. ➤ Rani Lakshmbai, also known as Jhansi ki Rani, was a valiant ruler of the princely state of Jhansi in Uttar Pradesh. ➤ She actively involved in the Indian Rebellion of 1857, resisted British rule and became an icon of resistance against colonialism. ➤ During the Indian Rebellion of 1857, Lakshmbai resisted British troops, defending Jhansi fiercely. ➤ Her legacy of bravery and patriotism inspired generations, leading to numerous institutions being named in her honor. ➤ After her husband's death, the British refused to recognize the adopted son as heir, applying the 'Doctrine of Lapse' to annex Jhansi. 

POINTS TO PONDER

- ❖ Which state is the host of the '9th India International Science Festival (IISF) 2023'? - **Haryana**
- ❖ 'Stopgap spending bill', which was seen in the news, is associated with which country? - **USA**
- ❖ Which institution releases the annual Greenhouse Gas Bulletin? - **World Meteorological Organization**
- ❖ Which state has recently imposed a state-wide ban on Halal certified products? - **Uttar Pradesh**
- ❖ Which Indian has been shortlisted for men's 'World Athlete of the Year' award? - **Neeraj Chopra**

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