10/04/2024

TOPICS COVERED

1. **Gudi Padwa   (GS Paper I: A&C)**
2. **The Higgs Boson   (GS Paper III: Basic Science)**
3. **Ugadi   (GS Paper I: A&C)**
4. **The climate crisis is not gender neutral (10 April)   (GS Paper I: Social Justice, GS Paper III: Environment)**
5. **A distinct right: On climate change and species protection (10 April)   (GS Paper II: FR)**
6. **Gross mismanagement: On TB drug shortages and India's national TB programme (10 April)   (GS Paper II: Health Sector)**
7. **The corridor of Kolkata's bypass urbanism (GS Paper I: Urbanization)**

Gudi Padwa   (GS Paper I: A&C)

- Gudi Padwa is a significant festival celebrated primarily in the Indian states of **Maharashtra, Goa, and parts of Karnataka, Andhra Pradesh, and Telangana.**
- It marks the **beginning of the traditional New Year according to the lunisolar Hindu calendar**.
- The festival falls on the first day of the **Chaitra month (around March-April)** and coincides with the celebration of similar new year festivals in other parts of India (Ugadi, Cheti Chand, Navreh, etc.).

Symbolism
- **Gudi:** The Gudi is the central symbol of the festival. It's a bright cloth hoisted on a bamboo stick, adorned with mango and neem leaves, flowers, and a garland of sugar crystals (gathi). An upturned copper or silver vessel is placed on top.
- **Victory:** The Gudi symbolizes victory and prosperity. It's believed to ward off evil, bring good luck, and herald a prosperous year ahead.
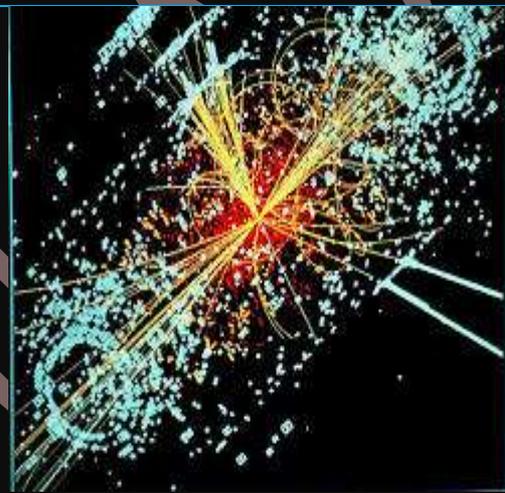
- **Mythological Significance:** The festival has several associated legends, including Lord Brahma creating the universe on this day and Lord Rama's victorious return to Ayodhya after defeating Ravana.

Celebrations
- **Rangoli:** Drawing colorful patterns (rangoli) at the doorstep.
- **Traditional attire:** People dress up in festive clothes.
- **Special Foods:** Traditional Maharashtrian dishes like Puran Poli (sweet flatbread), Shrikhand (sweetened yogurt), etc., are prepared.
- **Processions:** Processions and gatherings are held in some places.

The Higgs Boson   (GS Paper III: Basic Science)

- **Elementary Particle:** The Higgs boson is a fundamental particle within the Standard Model of particle physics. It was experimentally discovered in 2012 at the Large Hadron Collider (CERN).
- **The Higgs Field:** The Higgs boson is closely associated with the Higgs field, an energy field that permeates all of space. This field is what gives certain other fundamental particles their mass.
- **"The God Particle"**: It's sometimes nicknamed "the God particle," a term coined mainly by popular media, due to its significance in understanding the fundamental building blocks of our universe.

Why is the Higgs Boson Important?
- **Origin of Mass:** The Higgs boson helps explain why some particles have mass and others don't. Without the Higgs field, the universe as we know it wouldn't exist.

How Was the Higgs Boson Discovered?
- **Large Hadron Collider (LHC):** It was detected at CERN (European Organization for Nuclear Research) using the Large Hadron Collider, the world's most powerful particle accelerator.
- **Particle Collisions:** Scientists analyzed data from billions of high-energy particle collisions to identify the signatures of the Higgs boson

Ugadi   (GS Paper I: A&C)
- Ugadi marks **the traditional New Year for people in the Deccan region of India, primarily the states of Andhra Pradesh, Telangana, and Karnataka.**
- The name "Ugadi" is derived from the Sanskrit words **"Yuga" (age) and "Adi" (beginning), signifying the start of a new era.**
- It falls on the **first day of the Chaitra month in the Hindu lunisolar calendar**, usually coinciding with March or April in the Gregorian calendar.

Symbolism
- Ugadi represents a fresh start, cleansing from the past, and embracing hope for the coming year.
- It symbolizes the cycle of creation, preservation, and change.

Celebrations

Ugadi celebrations typically involve the following:
- **Home Preparation:** Cleaning and decorating homes, drawing colorful rangoli (patterns) at the entrance.
- **Rituals:** Oil baths, wearing new clothes, special prayers, and temple visits.
- Ugadi Pachadi: A unique dish prepared with six different flavors (sweet, sour, salty, bitter, tangy, astringent), symbolizing the mixed experiences of life.
- **Panchanga Sravanam:** Reading of the new year's almanac with predictions.
- **Festive Meals:** Family gatherings and shared meals with traditional dishes.

The climate crisis is not gender neutral (10 April)

(GS Paper I: Social Justice, GS Paper III: Environment)

While climate action requires 100% involvement of the population, at the same time, empowering women would mean better climate solutions

- The climate crisis affects everyone differently, with women and girls facing disproportionately high health risks due to poverty, existing roles, responsibilities, and cultural norms.
- According to the United Nations Development Programme (UNDP), women and children are **14 times more likely than men to die in a disaster.**

UNDP
- The United Nations Development Programme (UNDP) is the lead United Nations agency focused on international development. It works **to eradicate poverty, reduce inequalities, and build resilience,** helping countries achieve the Sustainable Development Goals (SDGs).

The UNDP's work centers around three main pillars:
1. **Sustainable Development:** Supports countries to achieve economic growth in ways that are inclusive, protect the planet, and build resilience against future shocks.
2. **Democratic Governance and Peacebuilding:** Helps strengthen democratic institutions, promote peace and conflict resolution, and support inclusive participation in decision-making.
3. **Climate and Disaster Resilience:** Assists countries in adapting to climate change, reducing their disaster risk, and transitioning to clean, renewable energy sources.

How the UNDP Operates
- **Global Network:** The UNDP has offices in about 170 countries and territories, providing on-the-ground support and local expertise.
- **Policy Advice:** Works with governments to develop and implement policies aligned with development goals.
- **Capacity Building:** Strengthens institutions and individuals in developing countries to take ownership of their development initiatives.
- **Partnerships:** Collaborates with governments, other UN agencies, civil society, the private sector, and local communities to achieve its mission.

Funding:

- The UNDP is **funded primarily by voluntary contributions from UN member states.**
- The Supreme Court of India (**in M.C. Mehta v. Union of India & Ors.**, 2024) has recently recognized **people's right to be free from the adverse effects of climate change**, acknowledging the right to a clean environment as a fundamental right under the right to life.
- **Agriculture is crucial for** women's livelihoods in India, particularly in rural areas. Climate-related crop yield reductions worsen food insecurity, particularly impacting poor households with higher nutritional deficiencies.
- In small and marginal landholding households, men may face social stigma due to unpaid loans, leading to migration, emotional distress, and sometimes suicide. **Women, on the other hand, experience heavier domestic work burdens, worse health, and more intimate partner violence.**
- **National Family Health Survey (NFHS) 4 and 5 data** revealed that women living in drought-prone districts were more underweight, faced more intimate partner violence, and had a higher prevalence of girl marriages compared to districts without droughts in the past decade.
- **The increasing food and nutritional insecurity, work burdens, and income uncertainties negatively impact women's physical health, mental health, and emotional well-being.**

Extreme events and gender-based violence

- The world is experiencing more frequent extreme weather events and climate-induced natural disasters.
- A report from the Council on Energy, Environment and Water (CEEW) found that **75% of Indian districts are vulnerable to hydromet disasters like floods, droughts, and cyclones.**

Council on Energy, Environment and Water (CEEW)
- The Council on Energy, Environment and Water (CEEW) is one of Asia's leading **not-for-profit policy research institutions**. It strategically addresses pressing global challenges on **access to energy, clean air, water, and land.**

Focus Areas
CEEW's research and advisory work cover a broad spectrum within the **sustainability sector:**
- **Energy:** Clean energy transitions, power markets, energy access, industrial decarbonization, renewable energy, and energy finance.
- **Environment:** Climate change adaptation and mitigation, air pollution, forests, biodiversity, and resource efficiency.
- **Water:** Water resources management, water-energy-food nexus, WASH (water, sanitation, and hygiene).
- **Other Areas:** Urbanization, technology innovation, sustainable finance, and strategic affairs.

How CEEW Works
- **Research:** Conducts rigorous, data-driven research to assess challenges and identify solutions.
- **Policy Influence:** Engages with policymakers at the national, state, and international levels to inform evidence-based policymaking.
- **Capacity Building:** Provides training and skill development for professionals working in the sustainability sector.

- **Outreach:** Communicates findings and engages with the public through publications, events, conferences, and partnerships.

Key Achievements

CEEW has a track record of significant contributions. Here's a small sample:
- Contributed to the design of India's National Electricity Plan.
- Played a role in shaping India's National Clean Air Program (NCAP).
- Helped conceptualize the International Solar Alliance (ISA).
- Research on improving access to clean cooking fuels has influenced India's flagship Ujjwala scheme.
- Designed India's first renewable energy certificate (REC) market.

- NFHS 5 data revealed that over half of women and children in these districts are at risk.
- Studies show a direct link between natural disasters and gender-based violence against women.
- **Extreme weather events and changes in water cycle patterns affect access to safe drinking water, increasing women's workload and reducing time for productive work and healthcare.**
- The past decade has been the hottest ever recorded, with India likely to face unprecedented heatwaves.
- Prolonged heat poses risks for pregnant women, young children, and the elderly, increasing the chances of **preterm birth and other complications.**
- **Air pollution, both indoor and outdoor, affects women's health, causing respiratory and cardiovascular diseases, and affects the physical and cognitive growth of unborn children.**
- Climate change disproportionately affects certain sub-groups of women, highlighting the need for more evidence on their vulnerabilities.
- Climate action requires the participation of everyone to achieve the Paris Agreement goal of limiting global temperature rise to 1.5°C.
- **Empowering women leads to better climate solutions, as seen in increased agricultural yields when women have equal access to resources.**
- Tribal and rural women are often leaders in environmental conservation efforts.
- **Providing women and women collectives with knowledge, tools, and resources encourages local solutions to climate challenges.**
- **Adaptation measures must be tailored to different contexts,** considering variations in heat exposure, air pollution, and access to water and food between rural and urban areas.

On heatwaves and water shortage

- Immediate action is needed to reduce the impact of **prolonged heat on vulnerable groups such as outdoor workers, pregnant women, infants, children, and the elderly**.
- Excess deaths occur during heatwaves, impacting productivity and the economy.
- **Urban local bodies, municipal corporations, and district authorities in vulnerable districts should have plans and provide training and resources for implementation.**
- **Measures to minimize heat-related deaths include heatwave warnings, adjusting outdoor work and school timings, establishing cooling rooms in health facilities, providing public drinking water facilities, and immediate treatment for heatstroke.**
- **Long-term actions include urban planning to increase tree cover, reduce concrete, create green-blue spaces, and design heat-resilient housing.**

- The Mahila Housing Trust in Udaipur demonstrated **that painting low-income house roofs with reflective white paint can reduce indoor temperatures and improve quality of life.**
- Water scarcity poses a significant threat, requiring societal action.
- India historically had advanced rainwater harvesting and storage systems.
- Projects like those by the **M.S. Swaminathan Research Foundation in Tamil Nadu use geographic information systems to map water sources, identify vulnerabilities, and develop local plans for improved water access using government schemes and resources.**

Working at the village level

- Effective convergence of sectors and services, along with prioritization of actions, is best achieved at the village or panchayat levels.
- **Devolution of powers and finances to panchayats, along with capacity building for panchayat and Self-Help Group (SHG) members, can demonstrate India's resilience-building approach in a community-led and participatory manner.**
- State-action plans on climate change should incorporate a gender lens to address the impacts on women comprehensively.
- **National and State Action Plans on Climate Change (NAPCC and SAPCC)** often depict women as victims without delving into deeper gender dynamics.
- A review of 28 SAPCCs revealed a lack of transformative approaches, with few recognizing women as agents of change.
- Recommendations for revising SAPCCs stress moving beyond stereotypes, recognizing vulnerabilities of all genders, and implementing gender-transformative strategies for comprehensive and equitable climate adaptation.
- Women should not be labeled as victims but rather empowered to lead in climate action efforts.

The intersection of gender and climate change illuminates a complex relationship where women play a pivotal role in climate action while facing heightened vulnerability to its impacts. Understanding these dynamics is crucial for crafting inclusive and effective climate policies and initiatives.

The Vital Role of Women in Climate Action:

- Women are often key stewards of natural resources and agents of sustainable practices within their communities.
- Their knowledge of local ecosystems and traditional practices makes them invaluable contributors to adaptation and mitigation efforts.
- Moreover, empowering women economically and politically enhances their capacity to influence decision-making processes and advocate for climate-resilient policies.
- Studies have shown that women's participation leads to more equitable and sustainable outcomes in resource management and climate initiatives.

Heightened Vulnerability to Climate Impacts:

- Despite their crucial role, women are disproportionately affected by climate change due to existing socio-economic inequalities and cultural norms.
- Climate-induced disasters exacerbate gender disparities, with women and girls facing higher risks of mortality and morbidity.
- Factors such as poverty, limited access to resources, and restricted mobility further compound their vulnerability. For instance, women in drought-prone regions experience heightened food insecurity, malnutrition, and intimate partner violence.
- Studies from the Council on Energy, Environment and Water (CEEW) highlight the severe impacts of hydromet disasters in India and their connection to increased gender-based violence.
- Prolonged heatwaves also endanger women, particularly those pregnant, along with children and the elderly.

Recommendations: Towards Equity and Resilience

- Mitigating the climate crisis's gendered impacts and achieving a sustainable future require a multi-pronged approach:
- **Gender-Responsive Climate Policies:** Policies at national and global levels must integrate gender analysis to address women's specific needs and ensure their benefits from adaptation and mitigation strategies.
- **Women's Empowerment:** Bolstering women's education, leadership opportunities, and access to resources like land, technology, and finance is vital for their ability to drive change and withstand climate shocks.
- **Local Solutions, Women's Leadership:** Projects like the Mahila Housing Trust demonstrate that women-led solutions, from rooftop cooling to rainwater harvesting, can build resilience. Investing in such initiatives is crucial.
- **Inclusive Participation:** Women's voices must be heard in all climate-related decision-making, from local planning to international negotiations.

Thus, achieving climate justice necessitates centering the voices, experiences, and leadership of women and girls. Their active participation in climate action is indispensable for building resilient and sustainable communities. However, addressing gender disparities in climate vulnerability and ensuring women's empowerment requires concerted efforts at the policy, institutional, and community levels. By recognizing and harnessing the potential of women as catalysts for change, societies can forge a path towards a more equitable and climate-resilient future.

A distinct right: On climate change and species protection (10 April) (GS Paper II: FR)

The right to be free of climate change effects comes amid a conservation dilemma

- The Supreme Court of India has recognized the right to be free from the adverse effects of climate change as a distinct fundamental right.
- This right is seen as integral to the right to live in a clean environment under Article 21 of the Constitution.
- The court emphasizes that climate change poses threats such as rising temperatures, storms, droughts, food shortages, and shifts in diseases, impacting life and violating the right to equality.
- A case concerning the protection of the **Great Indian Bustard from collisions with solar power transmission lines** brought attention to the issue.
- The court faced a plea by three Union Ministries seeking modification of an earlier order aimed at protecting the bustard.
- The **original order directed the underground laying of low-voltage lines and shifting high-voltage lines in identified areas, causing concerns for the renewable energy sector due to technical and financial challenges.**
- The court has formed an expert committee to decide on the extent of underground and overground lines, recalling its earlier orders.
- The situation highlights a conundrum where reducing the country's carbon footprint clashes with protecting an endangered species.
- A prompt resolution is needed to reconcile these conflicting goals.
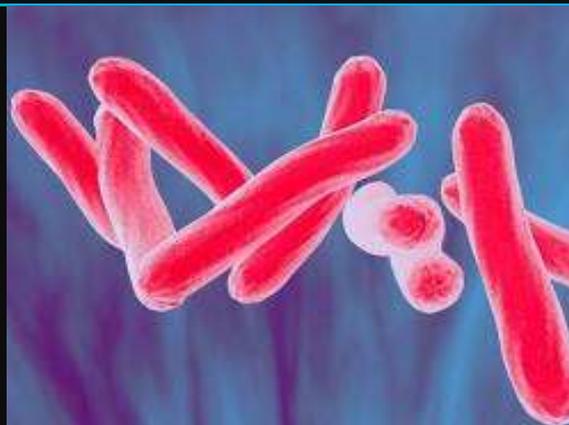
Gross mismanagement: On TB drug shortages and India's national TB programme (10 April) (GS Paper II: Health Sector)

India is falling behind in efforts to control tuberculosis

- **India aims to "eliminate" tuberculosis (TB) by 2025,** but is facing challenges due to shortages of TB drugs, including those for drug-sensitive TB.

Tuberculosis (TB)

- TB is a serious infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It primarily affects the lungs, but can also infect other parts of the body.
- **Transmission:** TB spreads through the air when a person with active TB disease coughs, sneezes, or talks, releasing tiny droplets containing the bacteria.

Symptoms of TB Disease:
- Persistent cough (lasting 3 weeks or more)
- Coughing up blood or sputum
- Chest pain
- Unexplained weight loss
- Fatigue
- Fever
- Night sweats

Multidrug-resistant TB (MDR-TB)
- MDR-TB is a form of TB resistant to at least two of the most powerful first-line anti-TB drugs**: isoniazid and rifampicin.**
- It develops due to improper or incomplete treatment of regular TB, or when a person becomes infected with a strain that is already resistant to drugs.
- MDR-TB is much more difficult and expensive to treat, requiring longer regimens with second-line drugs that can have more severe side effects.

Global Impact of TB
- TB remains one of the world's deadliest infectious diseases.
- In 2021, an estimated 10.6 million people fell ill with TB, and 1.6 million died from the disease (WHO).
- MDR-TB is a significant public health threat, with around 450,000 new cases globally in 2021 (WHO).

Diagnosis of TB
- Skin test (Tuberculin Skin Test - TST) or blood test (Interferon-Gamma Release Assay- IGRA) to detect immune response to TB bacteria.
- Sputum tests to examine samples for the presence of TB bacteria.
- Chest X-ray to check for abnormalities in the lungs.
- Drug susceptibility testing (DST) to determine resistance to specific antibiotics.

Treatment of TB
- Standard TB treatment involves a 6-month course of a combination of four antibiotics.
- MDR-TB requires treatment with second-line drugs for a longer duration (up to 20 months or more). Newer, shorter regimens are available in some cases.

- The shortage of TB drugs has been ongoing, with disruptions in drug supply occurring frequently.
- In the past, there were acute shortages of critical drugs for multidrug-resistant TB (MDR-TB), such as **Delamanid**, lasting nearly a year.
- Drug availability is essential for timely diagnosis and treatment initiation, as well as treatment success for TB patients.
- A shortage of TB drugs can lead to delays in treatment initiation and adherence issues among patients.

- Despite being close to the target date, there is still a shortage of drug-sensitive TB medicines in India, manufactured by multiple players within the country.
- Renaming the **National TB Control Programme to the National TB Elimination Programme** without addressing fundamental issues like drug availability is seen as incompetent.
- The Health Ministry's permission for states to procure drugs locally at the last minute creates challenges at the field level.
- A recent Health Ministry circular allows states to procure drugs locally for three months due to potential delays in drug supply.
- **In case district health facilities fail to provide free drugs, patients may need to purchase medicines themselves, which is challenging for those with poor socioeconomic backgrounds.**
- India's management of TB control appears inadequate, and the country **does not seem prepared to achieve its 2025 goal of TB elimination.**

The corridor of Kolkata's bypass urbanism (GS Paper I: Urbanization)

(10 April)

Urban infrastructural developments have created estrangements rather than integration, based on social and class identities

- Urbanization in India has been influenced by three main factors: colonialism, the Green Revolution, and neoliberalization.
- Colonialism played a significant role in shaping urban spaces in India, with the creation of cities continuing after Independence until the 1960s.
- The Green Revolution, initiated in the 1970s, and neoliberal policies in the 1990s further consolidated urban spaces, leading to rapid urbanization.
- Metropolitan cities like Chennai, Mumbai, and Kolkata, which were products of colonial urbanism, underwent significant transformation in later years.
- These cities expanded substantially to accommodate growing populations and their needs, driven by the wealth generated from the Green Revolution and neoliberal policies.
- However, urban expansion occurred unequally, with disparities in wealth distribution.
- The influx of newer forms of consumer culture has brought revolutionary changes to sectors such as housing, health, and education within these urban spaces.

A city within a city

- In the initial years after Independence, Calcutta was described as entangled, congested, and decaying by the State government.
- To address these issues, a political decision was made to build **Salt Lake City within Calcutta**, envisioned as a clean city.

- Existing challenges in Calcutta included poor infrastructure like **water, sanitation, and slums, along with poverty, traffic, and governance issues.**
- The State further developed the city by constructing the Eastern Metropolitan Bypass (EM Bypass) in the 1980s, connecting different parts of Kolkata.
- Infrastructure projects like the MAA flyover and EM Bypass roads aimed to ease congestion and improve traffic flow.
- These developments brought benefits such as increased movement of goods, people, and ideas, but also led to new challenges.
- Economist Kalyan Sanyal and Rajesh Bhattacharya observed that this approach to urbanization replaced the old with a new class of producers and consumers.
- This raised the question of ownership and identity: 'whose city is it?'

'Urban outcasts'

- **A 40-kilometre stretch of bypass in Kolkata is lined with luxury amenities like seven-star hotels, luxury apartments, clubs, schools, hospitals, and malls.**
- **This echo system built around the bypass caters exclusively to the wealthy, creating a socio-spatial hierarchical system.**
- High-rise complexes along the bypass often segregate blocks based on income groups, contributing to urban crisis and stigmatization.
- Social groups living outside these luxury areas face significant challenges, **becoming urban outcasts**, as described by sociologist Loïc Wacquant.
- Residents in adjacent areas, known as padas, experience deprivation, subjugation, and inequality, disrupting their social life.
- The growth of urbanization, driven by bourgeois capitalist economy and public policies, has created a servicing class and labor market to cater to elite needs.
- Real estate development has led to juxtapositions of luxury condos and shanty houses, exacerbating urban marginality shaped by caste, class, and religion.
- Kolkata's history of anti-colonial and communist movements makes it a significant case study for examining contemporary urban dynamics.
- The concept of "bypass urbanism" refers to sporadic or sparse development adjacent to or parallel to roads or bypasses, representing a slow but emerging trend in urban studies.

Roads and change

- Roads serve as pathways for the movement of goods, ideas, and people, but historian David Arnold sees them as more than that.
- Arnold views roads as manifestations of linear power structures and as important sites for social observation, engagement, and friction.
- Different regions use different terms for roads with specific functions. For example, a bypass is a road that avoids built-up areas to ensure smooth traffic flow.
- In the United States, such roads are called truck routes, facilitating hassle-free transportation of goods.
- In several European, American, and some Asian countries, bypasses are known as circular roads or orbital roads.

- Since Independence, roads in India have brought about significant dynamism and social interaction, according to historical perspective.
- Despite their intended purpose of facilitating transportation, urban infrastructural developments, including bypass roads, often create social and class-based estrangements instead of integration.
- Bypass roads inadvertently lead to socio-economic bypassing in everyday life, exacerbating existing social inequalities.

Question 1: Consider the following statements about the United Nations Development Programme (UNDP): 1: It is the lead UN agency focused exclusively on climate action and environmental protection. 2: It partners with governments, civil society, and the private sector on development initiatives. Which of the above statements is/are correct? (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2	Answer: (b) 2 only Explanation: **Statement** 1 is incorrect. While UNDP works on climate issues, it's not the lead UN agency for climate action. That role belongs to the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Environment Programme (UNEP). **Statement** 2 is correct. UNDP works extensively with a variety of stakeholders to achieve sustainable development goals.
Question 2: The headquarters of the United Nations Development Programme (UNDP) is located in: (a) Geneva, Switzerland (b) New York City, USA (c) The Hague, Netherlands (d) Vienna, Austria	Answer: (b) New York City, USA Explanation: UNDP's headquarters are in New York City, along with numerous other major United Nations agencies.
Question 3: Which of the following is a key focus area for the United Nations Development Programme (UNDP)? 1: Promoting disarmament and nuclear non-proliferation 2: Eradicating poverty and reducing inequality. 3: Facilitating international trade negotiations. Select the answer using the code given below: (a) 1 only (b) 2 only (c) 3 only (d) 1 and 3 only	Answer: (b) 2 only Explanation: **Statement 1**: Disarmament and nuclear non-proliferation fall under the purview of other UN bodies. **Statement 2**: Addressing poverty and inequality is a core focus of UNDP's mission. **Statement 3**: While UNDP does work on aspects related to trade, its focus isn't on facilitating large-scale trade negotiations.
Question 4: Gudi Padwa, celebrated as a traditional New Year festival, is primarily associated with which of the following Indian states? 1.Maharashtra 2.Tamil Nadu 3.West Bengal 4.Gujarat (a) 1 and 4 only	Answer: (c) 1 only Explanation: While other states have their own New Year celebrations, Gudi Padwa is specifically associated with Maharashtra and certain parts of neighboring states.

(b) 1, 2, and 3 only (c) 1 only (d) 2 and 3 only	
Question 5: Consider the following statements about Gudi Padwa: 1. It marks the beginning of the harvest season in several parts of India. 2. The hoisted 'Gudi' is a symbol of victory and prosperity. 3. Which of the above statements is/are correct? (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2	Answer: (b) 2 only Explanation: **Statement 1** is incorrect. Gudi Padwa falls around March-April, which is pre-harvest for many crops. Some harvest festivals are celebrated around the same time, but they have different names and traditions. **Statement 2** is correct. The Gudi is a traditional symbol representing victory, prosperity, and good fortune.
Question 6: Which of the following festivals coincides with the celebration of Gudi Padwa? (a) Navratri (b) Ugadi (c) Holi (d) Pongal	Answer: (b) Ugadi Explanation: Gudi Padwa and Ugadi both mark the traditional New Year in different regions of India. They often fall on the same day according to the lunisolar calendar.
Question 7: Which of the following statements about the Higgs boson is correct? (a) It is a type of electromagnetic radiation. (b) It gives mass to fundamental particles. (c) It is responsible for the strong nuclear force. (d) It travels faster than the speed of light.	Answer: (b) It gives mass to fundamental particles. Explanation: **Statement (a)** is incorrect: Electromagnetic radiation includes light, radio waves, etc., not the Higgs boson. **Statement (b)** is correct: The Higgs boson is associated with the Higgs field, which interacts with some particles to give them mass. **Statement (c)** is incorrect: The strong nuclear force holds protons and neutrons together; it has its own force carrier particles (gluons). **Statement (d)** is incorrect: Nothing can travel faster than the speed of light.
Question 8: The experimental discovery of the Higgs boson was primarily made at: (a) The Fermi National Accelerator Laboratory (Fermilab) (b) The International Space Station (ISS) (c) The European Organization for Nuclear Research (CERN) (d) The Arecibo Observatory	Answer: (c) The European Organization for Nuclear Research (CERN) **Explanation:** CERN, located on the France-Switzerland border, operates the Large Hadron Collider (LHC), the world's most powerful particle accelerator. The LHC was crucial in discovering the Higgs boson.
Question 9: The Higgs boson is an example of a/an: (a) Elementary particle (b) Neutrino (c) Molecule (d) Black hole	Answer: (a) Elementary particle Explanation: The Higgs boson is considered an elementary particle, meaning it's one of the fundamental, indivisible building blocks of matter.
Question 10: Which of the following states are primarily associated with Ugadi celebrations?	Answer: (a) 1 and 2 only

1.Andhra Pradesh 2.Karnataka 3.Tamil Nadu (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2, and 3	Explanation: Ugadi is primarily celebrated in Andhra Pradesh, Telangana, and Karnataka. While Tamil Nadu has its own new year festival (Puthandu), it doesn't coincide with Ugadi.
Question 11: Consider the following statements about Ugadi: 1.It marks the beginning of the Chaitra month according to the Hindu calendar. 2.Ugadi Pachadi is a special dish prepared during the celebrations, symbolizing different flavors of life. Which of the above statements is/are correct? (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2	Answer: (c) Both 1 and 2 Explanation: **Statement 1** is correct. Ugadi marks the first day of the Chaitra month, signifying the start of a new year in the Hindu lunisolar calendar. **Statement 2** is correct. Ugadi Pachadi is a unique preparation made with six contrasting flavors, representing the complexities of life.
Question 12: Ugadi celebrations share similarities with which of the following festivals? (a) Cheti Chand (b) Chhath Puja (c) Onam (d) Bihu	Answer: (a) Cheti Chand Explanation: Ugadi, Cheti Chand, and several other regional New Year festivals across India often fall around the same time, as they follow the traditional lunisolar calendar.