GOVERNANCE

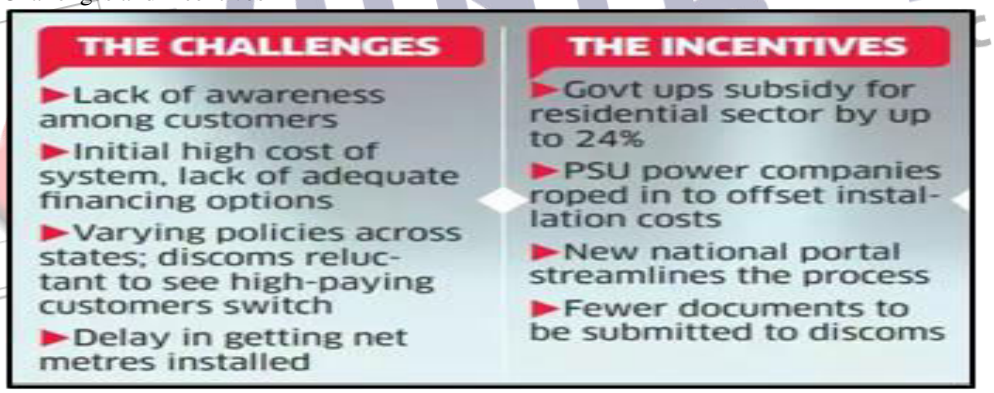
Pradhan Mantri Suryodaya Yojana

Why in news?

- PM Modi announced the 'Pradhan Mantri Suryodaya Yojana', a government scheme under which one crore households will get rooftop solar power systems.

Previous schemes to promote rooftop solar system

- About
  - In 2014, the government launched the Rooftop Solar Programme.
  - This had aimed to achieve a cumulative installed capacity of 40,000 megawatts (MW) or 40 gigawatts (GW) by 2022.
    - Watt is a unit of power and is calculated as the amount of energy used over time, specifically one Joule per second.
  - The scheme aimed to expand India's rooftop solar installed capacity in the residential sector by providing Central Financial Assistance and incentives to DISCOMs (distribution companies).
- Achievement
  - However, this target could not be achieved. But by the end of 2023, rooftop solar energy generation was just 11 GW.
    - And energy generated from residences was only about a fifth of that.
  - As a result, the government extended the deadline from 2022 to 2026.
- Features
  - A consumer can avail of benefits of the scheme through DISCOM tendered projects or through the National Portal (solarrooftop.gov.in).
  - The DISCOMs role is limited to issuing of technical feasibility approval, installation of net-meter and inspect the system.
    - Net metering is a billing mechanism that credits solar energy system owners for the electricity they add to the grid.
  - Surplus solar power units generated from the rooftop solar plant can be exported to the grid.
  - The consumer can receive monetary benefits for the surplus exported power as per the prevailing regulations.
- Challenges and incentives



Pradhan Mantri Suryodaya Yojana

- This scheme is a new attempt to help reach the target of 40 GW rooftop solar capacity.
- It will involve installing solar power systems at rooftops for residential consumers.
- The scheme would help not only reduce electricity bills of the poor and middle class, but also push India's goal of becoming self-reliant in the energy sector.

India's current solar capacity

- Installed capacity
  - According to the Ministry of New and Renewable Energy, solar power installed capacity in India has reached around 73.31 GW as of December 2023.
  - Meanwhile, rooftop solar installed capacity is around 11.08 GW as of December 2023.
  - Overall, solar power has a major share in the country's current renewable energy capacity, which stands at around 180 GW.
- High performing states
  - In terms of total solar capacity, Rajasthan is at the top with 18.7 GW. Gujarat is at the second position with 10.5 GW.
  - When it comes to rooftop solar capacity, Gujarat tops the list with 2.8 GW, followed by Maharashtra by 1.7 GW.

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Need for an expansion of solar energy in India

- According to the latest World Energy Outlook by the International Energy Agency (IEA), India is expected to witness the largest energy demand growth of any country or region in the world over the next 30 years.
  - IEA is an intergovernmental organization that provides data, policy recommendations, and analysis on the global energy sector.
  - IEA's goal is to help countries provide sustainable and secure energy for everyone.
- To meet this demand, the country would need a reliable source of energy and it can't be just coal plants.
- Although India has doubled down on its coal production in recent years, it also aims to reach 500 GW of renewable energy capacity by 2030.

ART & CULTURE

Ayodhya Ram Temple: A new-age Architectural Marvel Carved in Stone

Why in News?

- On 22nd January 2024, the Ram temple in Ayodhya was inaugurated, marking the completion of a 200-year-old saga that profoundly impacted India's socio-political landscape.
  - The Ram temple has been designed in the Nagara Style of Temple Architecture.
  - The story of Ram is popular from Laos, Cambodia and Thailand in Asia to Guyana in South America to Mauritius in Africa, making Ramayana Popular outside India.

Timeline of Ram Janmabhoomi Movement

- Origin:
  - Originating in 1751 when the Marathas appealed to the Nawab of Awadh (Nawab Shuja-ud-Daula) for control of Ayodhya, Kashi, and Mathura.
  - The Marathas had helped the Nawab of Awadh in defeating the Pathan (local chieftain) forces in the Doab Region and as a result, they sought control over these important religious and cultural centres like Ayodhya, Kashi (Varanasi), and Mathura.
    - The Doab Region refers to the area between the Ganges and Yamuna rivers in northern India.
  - The movement gained momentum in the 19th century with judicial records dating back to 1822 mentioning a mosque on the birthplace of Lord Ram.
- Clash Near Babri Masjid:
  - Tensions escalated in 1855 with a violent clash near the Babri Masjid between Hindus and Muslims, leading to the capture of Janmasthan by Hindus.
- Placement of the idol of Ram Lalla:
  - The year 1949 saw the placement of the idol of Ram Lalla in the mosque, sparking demands for a grand temple.
- Legal Battles:
  - In the 1980s, the Vishwa Hindu Parishad (VHP) initiated a movement for the 'liberation' of Ram Janmabhoomi, Krishna Janmabhoomi, and Vishwanath shrine.
  - Legal battles ensued, and in 1986, the locks of the Babri Masjid were opened, allowing Hindus to offer prayers.
  - The following years witnessed significant events, including the foundation-laying ceremony in 1989 and the Rath Yatra led by LK Advani in 1990, leading to widespread riots.
- Demolition of Babri Masjid:
  - On 6th December 1992, a mob demolished the Babri Masjid, leading to political repercussions and legal proceedings.
  - In 1993, Parliament passed the Acquisition of Certain Area at Ayodhya Act, allowing the government to acquire the disputed Ram Janmabhoomi-Babri Masjid land.
  - The Liberhan Commission, in 2009, highlighted the premeditated nature of the events in 1992.
- Allahabad High Court Verdict:
  - In 2010, a special bench of the Allahabad High Court in its Ayodhya title suit judgment divided the land in a 2:1 ratio, with two-thirds of the 2.77-acre, including the garbha griha, going to litigants for a Ram temple – Shri Ram Lala Virajman and Nirmohi Akhara.
  - One-third of the land was given to the Sunni Central Waqf Board.
- Supreme Court Verdict:
  - Legal proceedings continued, and in 2019, the Supreme Court awarded the entire disputed land to the Hindu petitioners for a Ram temple and allocated land for a mosque elsewhere.
- Culmination:
  - The culmination of this historic journey occurred on 5th August, 2020, when the Indian Prime Minister performed the Shilanyas of the Ram temple, establishing the Shri Ram Janmabhoomi Teerth Kshetra Trust.
  - On 22nd January 2024, the Ram temple in Ayodhya, built in Nagara Style, was set to be inaugurated, marking the completion of a 200-year-old saga that profoundly impacted India's socio-political landscape.

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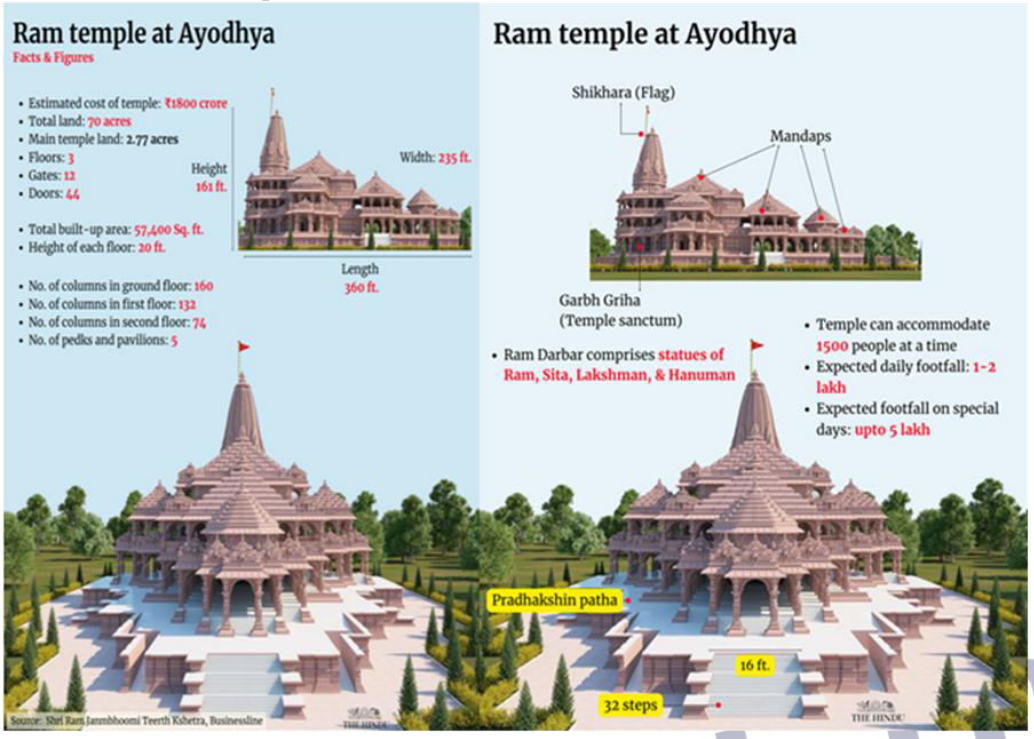
Major Features of the Ram Temple



- Main Complex:
  - The Ram Mandir is a Hindu temple in Ayodhya, Uttar Pradesh. It is located at the site of Ram Janmabhoomi, the birthplace of Lord Rama.
  - No iron or steel has been used in the construction of the grand structure. Stones have been sourced from Rajasthan's Bansi Paharpur area.
  - The temple complex, built in the traditional Nagara style, will be 380 feet long from the east to the west, 250 feet wide and 161 feet high.
  - Each floor of the temple will be 20 feet high and have a total 392 pillars and 44 gates.
  - Around the grand temple is a rectangular periphery called percota, a feature found in temples in south India, but not generally in north India.
  - The percota will be 14 feet wide and the periphery span 732 metres. The temple will be nestled within the percota periphery.
  - Images of Lord Hanuman, other deities, peacocks and flower patterns have been carved onto the stones, lending the structure a divine look.
  - More than 3,000 kg of flowers of over 20 varieties have been used to decorate the grand structure.
- Main Entrance:
  - Ornate statues of elephants, lions, Lord Hanuman and Garuda were installed at the main entrance leading to the temple earlier this month.
  - These statues have also been made using sandstone brought from Bansi Paharpur.
- Green Complex:
  - A major part of the temple compound will be a green area with hundreds of trees.
  - About 70 per cent of the complex will be a green area.
  - The complex will have two sewage treatment plants — a water treatment plant and a dedicated electricity line from the power house.
  - The fire brigade post will be able to source water from an underground reservoir.

PRELIM FACTS

1. FiloBot

- Recently, a new innovative plant-inspired robot named FiloBot has been developed that climbs up structures just like climbing vines.

About FiloBot:

- It is different from conventional climbing robots as it doesn't depend on pre-programmed movements.
- It instead absorbs 3D printing filament through its head and extends its length over time, just like a creeper.
- The team utilised a combination of plant behaviours like phototropism, negative phototropism and gravitropism and utilises these naturally occurring behaviours in high-tech robots.
- The tests for FiloBot have been successful and displayed remarkable adaptability that adjusts its growth trajectory dynamically in response to moving light intensity.

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- Significance
  - By equipping autonomous systems with transportable additive manufacturing techniques merged with bioinspired behavioural strategies, future robots can navigate unstructured and dynamic environments and even be capable of self-building infrastructure.
  - This new innovation has opened a new potential impact of technology that can be applied in robotics, where adaptability and responsiveness redefine the capabilities of climbing robots.
- Other similar innovations
  - A similar snake-like robot was unveiled by NASA's Jet Propulsion Laboratory (JPL), which was specifically crafted to work on rough terrains of our solar system's planets and moons.
  - The robot named Exobiology Extant Life Surveyor (EELS 1.0) is engineered to navigate diverse landscapes, including ice, sand, cliff walls, deep craters and lava tubes.

2. Madhika Language

- In the remote colony of Kookanam, near Karivellur grama panchayat in Kerala, the Chakaliya community is grappling with the imminent loss of its unique language Madhika.

About Madhika language:

- It is a language spoken by the Chakaliya community.
- It does not have a script.
- Despite sounding similar to Kannada it can still bewilder listeners due to its diverse influences.
- It is a blend of Telugu, Tulu, Kannada, and Malayalam.
- It is largely influenced by Havyaka Kannada, an old form of Kannada.
- It is fast becoming extinct with the younger generation opting for Malayalam.

Key facts about Chakaliya community:

- The community was nomadic and worshippers of Thiruvenkatramana and Mariamma.
- They migrated to northern Malabar from the hilly regions of Karnataka centuries ago.
- Initially they were recognised as Scheduled Tribe, but were later included in the Scheduled Caste category in Kerala.
- The mention of the community can be found in the book Caste and Tribes of Southern India.

Government of India's Initiative to preserve languages:

- The Government of India has initiated a Scheme known as "Scheme for Protection and Preservation of Endangered Languages of India" (SPPEL).
- Under this Scheme, the Central Institute of Indian Languages (CIIL), Mysore works on protection, preservation and documentation of all the mother tongues/languages of India spoken by less than 10,000 people which are called endangered languages.

3. Binturong and Small clawed otter

- Recently, the Kaziranga National Park and Tiger Reserve in Assam has received the addition of two new mammalian species, the elusive binturong (Arctictis binturong) and the small-clawed otter.

About Binturong:

- It is the largest civet in India colloquially known as the bearcat.
- Common names: Asian Bearcat and the Asian Civet.
- Scientific name: Arctictis binturong
- It is a generally solitary and nocturnal animal that spends the majority of its time moving about slowly and cautiously amongst the trees.
- It has scent glands which are located just under its tail. These glands are used to mark trees and foliage to outline an individual's territory.
- It belongs to the same family as other small carnivores including Civets, Genets, Mongooses, and Fossa.
- The binturong is one of only two carnivores that has a prehensile tail. (The other is the kinkajou).
- The prehensile tail acts almost like another leg helping both with climbing, and gripping onto branches to give the Binturong more stability.
- Habitat: It is a medium sized carnivore that is found inhabiting the dense forests of South-East Asia.
- Distribution: China, India, Thailand, Cambodia, Laos, Malaysia, Indonesia, the Philippines and on the island of Borneo.
- Conservation status
  - IUCN: Vulnerable
  - Wildlife Protection Act of 1972: Schedule I
  - CITES: Appendix III

Key facts about Small-clawed otter:

- It exhibits partially webbed feet and short claws, enhancing their adeptness as hunters in aquatic environments.
- Distribution:
  - This mammal boasts a broad distribution range spanning from India eastwards to Southeast Asia and southern China.

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- In India, it predominantly inhabits protected areas in West Bengal, Assam, Arunachal Pradesh, Karnataka, Tamil Nadu, and certain regions of Kerala within the Western Ghats.
- Habitat: They are primarily found in freshwater habitats, sustaining themselves with a diet comprising fish and crustaceans.
- Threats: Habitat destruction, deforestation, reduction in prey biomass etc.
- Conservation status
  - IUCN: Vulnerable
  - Wildlife Protection Act of 1972: Schedule I
  - CITES: Appendix I

4. Parakram Diwas

- The Prime Minister of India has extended greetings to the people of India on Parakram Diwas.

About Parakram Diwas:

- It is celebrated on January 23 to commemorate the birth anniversary of freedom fighter Subhas Chandra Bose.
- This year marks the 127th birth anniversary of Bose, fondly known as 'Netaji'.
- Parakram Diwas aims to instil fearlessness and patriotism, especially among the youth, inspiring them to stand strong in the face of challenges.

Key points about Subhas Chandra Bose:

- He was born on January 23, 1897, in Cuttack, Orissa.
- In 1920, he passed the civil service examination, but in April 1921, after hearing of the nationalist turmoil in India, he resigned from his position.
- He was an Indian nationalist leader who was a key figure in the Indian independence movement against British colonial rule.
- Bose then joined the Indian National Congress and actively participated in the Indian independence movement.
- President of Indian National Congress: Bose was elected president of the Indian National Congress for two consecutive terms but resigned from the post following ideological conflicts with Mahatma Gandhi.
- In 1939, he formed the Forward Bloc, an organization aimed at unifying all the anti-British forces in India.
- At the outset of the Second World War, he fled from India and traveled to the Soviet Union, Germany and Japan, seeking an alliance with the aim of attacking the British in India.
- With Japanese assistance, he reorganized and later led the Indian National Army, formed from Indian prisoners-of-war and plantation workers from Malaya, Singapore, and other parts of Southeast Asia, against British forces.
- Also with Japanese monetary, political, diplomatic, and military assistance, he formed the Azad Hind Government in exile, and regrouped, and led the Indian National Army in battle against the allies at Imphal and in Burma.

5. Exercise Cyclone

- The Indian Army contingent comprising 25 personnel reached Egypt to take part in the India-Egypt Joint Special Forces Exercise CYCLONE.

About Exercise Cyclone:

- It is the 2nd edition of the Exercise Cyclone which will be conducted at Anshas, Egypt from 22nd January to 1st February 2024.
- The first edition of the exercise was conducted last year in India.
- The Indian contingent is being represented by troops from The Parachute Regiment (Special Forces) and Egyptian contingent comprising 25 personnel is being represented by Egyptian Commando Squadron and Egyptian Airborne Platoon.
- Aim of the Exercise is to acquaint both the sides with each other's operating procedures in the backdrop of Special Operations in desert/ semi desert terrain under Chapter VII of United Nations Charter.
- Exercise CYCLONE is designed to develop bilateral military cooperation and strengthen bond between two armies through conduct of discussions and rehearsal of tactical military drills.
- It will involve planning and execution of special operations in sub conventional domains and conducted in three phases.
- While the first phase will include Military Exhibitions and Tactical Interactions, second phase will focus on training on Improvised Explosive Device (IED), counter IED and Combat First Aid. The third and final phase will encompass Joint Tactical Exercise based on Fighting in Built-up Area and Hostage Rescue Scenarios.
- The Exercise will provide an opportunity to both the contingents to strengthen their bond and share best practices.
- It will also act as a platform to achieve shared security objectives and foster bilateral relations between two friendly nations.

ANSWER WRITTING

Q. Explain the changes in cropping pattern in India in the context of changes in consumption pattern and marketing conditions. (150 words)

Answer: Changes in cropping patterns reflect the evolving demands of consumers, market dynamics and economic factors and are closely associated with changing consumption pattern and marketing dynamics.

Changing market conditions influencing cropping patterns

- Improved market access through better road and rail connectivity has expanded market access for farmers and thus, in turn, fuelled cultivation of certain crops.
- Availability of international markets for certain crops like Alphonso mango, basmati rice, etc. has led to their increased cultivation.

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- Government initiatives like Minimum Support Price (MSP) mechanism incentivize the farmers to grow the crops covered under it.
- The National Agriculture Market (e-NAM) was launched to provide for better price discovery and easy accessibility of market for the crop growers.

Changing consumption pattern influencing cropping patterns

- With rising income and urbanization, there is rising demand for protein-rich foods, fruits, vegetables, dairy, poultry, etc.
- Increased health consciousness has led to higher demand for organic and nutrient rich foods.
- With the rise in demand for chemical-free food, growth in hydroponics and aeroponics crops, has led to an increase in demand for exotic food.

Conclusion

Change in cropping patterns are shaped by complex factors, including consumer preferences, market conditions, government policies, technological advancements, among others.

MCQs

1. Vijay Raghavan committee has been in the News. It is associated with which of the following subjects?
(a) Promotion of Space related start-up
(b) Study feasibility of the One Nation One Election
(c) Revamping Higher Education System
(d) Review the functioning of Defence Research and Development Organization (DRDO)

2. Consider the following statements in respect of Bharat Ratna and Padma Awards: (2021)
1. Bharat Ratna and Padma Awards are titles under the Article 18(1) of the Constitution of India.
2. Padma Awards, which were instituted in the year 1954, were suspended only once.
3. The number of Bharat Ratna Awards is restricted to a maximum of five in a particular year.
Which of the above statements are not correct?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only **(d) 1, 2 and 3**

3. The Mpemba effect has been in the news recently, it is related to
(a) Position and speed of a particle with perfect accuracy.
(b) Change in the frequency of a wave in relation to an observer
(c) Scattering of light by molecules of gases, liquids, or solids
(d) Freezing of Hot water.

4. In the context of the regulation of surrogacy in India, consider the following statements:
1. Only altruistic surrogacy is allowed.
2. A woman can act as a surrogate only once in her lifetime.
Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

5. With reference to the Member of Parliament Local Area Development (MPLAD) Scheme, consider the following statements:
1. The funds under the MPLAD scheme can be used for only for specific projects listed by the government.
2. E-SAKSHI mobile app aims to capture the entire MPLADS fund allocation cycle and provide greater convenience and accessibility in monitoring the scheme.
Which of the statement(s) given above is/are correct?
(a) 1 only **(b) 2 only**
(c) Both 1 and 2 (d) Neither 1 nor 2

6. Consider the following statements:
1. Greenland Glacier stands as the largest ice mass in the Northern Hemisphere.
2. Glacier terminus position refers to a sudden, short-lived, and rapid movement of a glacier, often characterized by a significant increase in ice flow.
Which of the statement(s) given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

7. Consider the following statements:
1. Tracking weather patterns and cloud cover
2. Monitoring land cover and vegetation changes
3. Providing high-resolution images for urban planning
Which of the above is/are the application(s) of Red-Green-Blue (RGB) imagers used in the INSAT (Indian National Satellite System) satellites?
(a) 1 and 2 (b) 2 and 3
(c) 1 and 3 **(d) 1, 2 and 3**

8. Who is the chief architect of the construction of Ayodhya Ram temple?
(a) Ram Sutar
(b) Chandrakant Sompura
(c) Arun Yogiraj
(d) Jagan Mohan

9. Consider the following statements regarding Melanistic tigers.
1. Melanistic tigers are subspecies of Bengal tiger.
2. Melanistic tigers have a dark black or nearly black coatwith faint or almost invisible stripes.
3. The colouration in is Melanistic tigers are due to a genetic condition known as melanism.
4. Melanistic tigers are found exclusively in the Similipal Tiger Reserve in Odisha.
How many of the above statements is/are correct?
(a) Only one (b) Only two
(c) Only three (d) All four

10. Consider the following statements:
1. It is the left-bank tributary of the Indus River.
2. It flows entirely within Ladakh, India.
3. Doda and TsrapLingti Chu (Lungnak River) are its two tributaries.
Which one of the following rivers has been described above?
(a) Zanskar River (b) Suru River
(c) Shyok River (d) Hunza River

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