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PAPER – I

1. 200th Birth Anniversary of Arumuga Navalar

Introduction:

Prime Minister Mahinda Rajapaksa has declared 2022 as the Navalar Year in honour of Srilasri Arumuga Navalar for his contribution to Tamil and Hinduism. The Prime minister has declared the year 2022 as Navalar Year, to mark the 200th birth anniversary of Srilasri Arumuga Navalar.

Arumuga Navalar was born on December 18, 1822 during the colonial era. He started his educational career at a native Tamil medium school. His brothers who noticed his outstanding qualities decided to send him to an English medium school. At the age of 12, he was first admitted to a Methodist school. At that time it was administered by Rev. Peter Percival. He identified Arumuga Navalar's extraordinary talents and a keen interest in education. With time, he appointed him as a Tamil teacher for the upper school and an English teacher for the lower school. At the age of 19, he was assigned to translate the Bible into Tamil. He studied the Bible and made a comparative study with Hindu traditional Vedas, Agamas and Puranas. His approach revealed that he had studied both religions in depth.

Reforms:

He made numerous reforms in Hindu traditional practices in his early years. He also introduced the Tamil word 'Samaya' for religion. Meanwhile, he defended Hinduism in numerous ways for the rulers.

He took numerous measures to protect the ancient Hindu religious Sastras. He searched the Hindu palm manuscripts and preserved and released them in printed form for the benefit of everybody. He was a social reformer, thinker and an exceptional scholar in English, Tamil, Hinduism and Christianity. He raised his voice against numerous Hindu practices followed blindly by the people.

Background

Navalar was born and bred in his native town Nallur. His father's name was Kandiahpillai, a Tamil poet who had established a foundation for Tamil literature. Later the foundation facilitated Arumuga Navalar to do his research in Tamil and Hindu religious activities. During his period, he worked closely with Rev. Peter Percival. Although he was born into an orthodox Hindu family, his contribution to the Tamil language and Hinduism has been recognized in Sri Lanka and South India as well. Because of his exceptional contribution, he was honoured with the title Navalar.

He helped the local Tamil Christian population to understand the theological values imparted by the missionaries of the ruling authorities. He declined to accept a high posting from the ruling authorities.

He started a weekly Hindu sermon at Vanarpanai Vaitheswara temple in Jaffna. He not only imparted the in-depth meaning of Agama Sastras and Vedas but also suggested many reforms and rituals on Hindu traditions. He explained and initiated numerous reforms for the Hindu religious practices.

The word 'Navalar' means proficiency to express your knowledge through speech. The word, 'Na' means tongue, 'Valar' means the person who has exceptional skills.

Despite foreign rulers, Hinduism survived until the emergence of Arumga Navalar. He renounced his worldly life and dedicated himself to the well-being of the Tamil language and Hindu culture. Navalar later became a Hindu evangelist.

Contribution to Thiruketheeswaram

Jaffna-based Srila Sri Arumuga Navalar was mentioned for the first time in 1872 in relation to the famed Thiruketheeswaram temple. He started his mission about Thiruketheeswaram and created public vigilance especially among Saiva devotees of Sri Lanka. At that time the ancient Thiruketheeswaram was covered by sand. The total extent of the land was 40 acres. Navalar took a keen interest in rebuilding the temple and restoring the daily Kiriyas (such as Nithya and Nimithiya rituals) of the temple. Unfortunately, all the efforts of Navalar failed due to opposition by a particular section of the community and the lack of interest on the part of the Hindu community. Unfortunately, during his life span, Arumuganavalar's efforts did not materialize. Anyway, after about 21 years of his demise, his dream was materialized. On 13th December 1893, in front of the Northern Government Agent Sir William Twynam, an auction took place at Thirukeetheeswaram. People from many walks of life attended the auction. Saiva devotees and many other religious dignitaries gathered at the premises of the Jaffna Kachcheri. Sir William Twynam auctioned the 40 acres.

The Saiva devotees decided to purchase the land. An ardent devotee named Palani Appa Chediyar on behalf of the Sri Lankan Hindu community purchased the land for Rs 3,100 on the 13th of December 1893. The Saiva devotees raised the money and bought the land from the Palani Appa Chediyar. The major portion of the funds was

given by the Jaffna-based Saiva devotees. The former Government Agent of Jaffna, Sir William Twynam had mentioned the ancient glory of Thiruketheeswaram in his administrative annual report. Thus the dream of Srilasri Arumuga Navalar was realized after 14 years of his death.

Unit – II: Social Issues in India and Tamil Nadu

1. **Terrorism in Punjab**

Background: Amritpal Singh is a follower of the slain Sikh militant Jarnail Singh Bhindranwale, and took the reins of the 'Waris Punjab De' organisation following the death of its founder (Deep Sidhu).

Khalistan movement:
- It is **a Sikh separatist movement** seeking to create a homeland for Sikhs by establishing a sovereign state, called Khalistan ('Land of the Khalsa'), in the Punjab region.

- Its origins have been traced back to **India's independence and subsequent Partition along religious lines**.
- **The Punjab province**, which was divided between India and Pakistan, witnessed communal violence and generated millions of refugees.
- The historic Sikh Empire's capital, **Lahore**, as well as sacred Sikh sites like Nankana Sahib, the birthplace of Guru Nanak, went to Pakistan.
- While most Sikhs found themselves in India, they were a small minority (2% of the population) in the country.
- The political struggle for greater autonomy began with the **Punjabi Suba Movement** for the creation of a Punjabi-speaking state.
- **The States Reorganisation Commission report (1955)** rejected this demand, but the state of Punjab was reorganised (**trifurcated** into the Hindi-Hindu-majority HP and Haryana, and Punjabi-Sikh-majority Punjab) in **1966**.
- The Punjabi Suba movement had galvanised the Akali Dal, which concluded the **Anandpur Sahib Resolution** (1973) demanding autonomy (not secession from India) for the state of Punjab.
- This demand had gone global by **1971** – when an advertisement in The New York Times proclaimed the **birth of Khalistan.**
- By the 1980s, the appeal of **Jarnail Singh Bhindranwale** had started creating trouble for the government.
- He and his followers (mostly from the lower rungs of the social ladder) were getting increasingly violent.
- In 1982, with support from the Akali Dal's leadership, he launched a civil disobedience movement called the **Dharam Yudh Morcha** and took up residence inside the Golden Temple, directing demonstrations and clashes with the police.

Operation Blue Star:

- The Khalistan movement was crushed in India following Operation Blue Star (by the Indian Army to flush out militants from the Golden Temple and neutralise Bhindranwale in 1984) and Operation Black Thunder (1986 and 1988).
- While the operations were ostensibly successful in their aims, they gravely wounded (by the desecration of the Golden Temple) the Sikh community around the world and also galvanised the demand for Khalistan.

Aftermath of the Operation Blue Star:
- PM Indira Gandhi was assassinated (on October 31, 1984), triggering the worst communal violence since Partition.
- Punjab became the hub of a long drawn-out insurgency (allegedly supported by Pakistan) that lasted till 1995.
- The movement continues to evoke sympathy and support among sections of the Sikh population, especially in the Sikh diaspora.
- Today, the movement is fuelled by vote bank politics, social issues (unemployment, drug menace in Punjab), dissatisfaction among the Sikh diaspora and support from non-state actors.

Conclusion: In order to curb the Khalistan movement and ideology, the Indian government needs to address the above-mentioned issues.

2. **TB Mukt Bharat Abhiyan 'Ni-kshay 2.0' Portal**

Introduction:
President Draupadi Murmu recently launched the 'Pradhan Mantri TB Mukt Bharat Abhiyan' and the Nikshay 2.0 portal to eliminate TB by 2025 through a virtual event.

Key Facts
- Under this campaign, any person, any representative or organization can adopt TB patients and the adopted patients will be taken care of.
- More than 66 percent TB patients currently undergoing treatment in the country have given their consent for adoption under this campaign.
- Under this scheme, more than 62 lakh TB patients have received financial assistance of Rs 1,651 crore since 2018. This involves a direct transfer of Rs 500 to the patient's bank account.

Nikshay 2.0 Portal

- The NIKSHA 2.0 portal provides additional patient support to TB patients to take advantage of Corporate Social Responsibility (CSR) opportunities to improve treatment outcomes, enhance community participation and fulfill India's commitment to TB eradication by 2025.
- Under this initiative, individuals, organisations, corporates, cooperative organisations, elected leaders and NGOs can provide support to persons suffering from TB by adopting them. You can also login to Nikshay 2.0 Portal.

- The people and institutions who come forward to take care of the patients will be called "Nikshay Mitras".

About TB Free India Campaign

The TB Free India Campaign was started by Prime Minister Narendra Modi to eliminate Tuberculosis in India. This campaign seeks to achieve the target of eliminating TB by 2025, as a part of sustainable development goals. However, goal of eliminating TB by 2025, is 5 years ahead of global target of eliminating TB by 2030.

3. **Chief Minister's Breakfast Scheme**

Introduction:

Tamil Nadu's midday meals scheme, conceptualised by the Justice Party in 1920 under the British regime and enhanced by successive state governments post-Independence, took on a new dimension on Thursday with the launch of a programme to provide free breakfasts for government school students from Class 1 to Class 5.

Chief Minister M K Stalin launched the ambitious scheme at a government-run school in the temple city of Madurai, 465 km from Chennai, and had breakfast with students. The Chief Minister's Free Breakfast Scheme is aimed at tackling nutrition deficiency among children and ensuring their attendance at schools.

Evolution of the free meal scheme:

1920 : Justice Party government under the British launches the scheme in Chennai

1957 : K Kamaraj extends the scheme across TN

1982 : M G Ramachandran introduces nutritious midday meals scheme to schoolchildren

1989, 1998: M Karunanidhi adds eggs to the menu once in two weeks and later makes it one egg every week. In 2006, he announces five eggs will be served every week and asks that bananas be distributed to children who don't eat eggs.

2013: J Jayalalithaa adds variety rice dishes to the menu

2022: M K Stalin launches free breakfast scheme for school children

Beneficiaries:

In the first phase, the scheme will benefit as many as 1.14 lakh children in 1,545 government-run schools in cities, towns, villages and far-flung areas. Of the 1,545 schools, 417 are in cities, 163 are in towns or district headquarters, 728 are in rural areas and 237 are in far-flung or hilly areas.

Menu:

Instructions have been issued to the authorities concerned to serve hot breakfasts to schoolchildren by 8:30 am before their classes begin. Students will be served upma, kichadi or pongal from Monday to Friday, while rava kesari or semiya kesari will be

added to the menu on Fridays. The local millets available in the area will also be part of the menu for at least two days a week.

Paper – II

Unit – I: Indian Polity and emerging political trends across the world affecting India

1. **Collegium**
Context:

The Supreme Court Collegium led by Chief Justice of India D.Y. Chandrachud published its resolution recommending the transfer of seven High Court judges.

Recently, the Union Minister of Law and Justice criticised the collegium system under which appointments of judges to the High Courts (HC) and the Supreme Court (SC) are made, as opaque.

Background:
- The National Judicial Appointments Commission (NJAC) was a proposed body which would have been responsible for the recruitment, appointment and transfer of judges to the HCs and SC.
- It was established by amending the Constitution of India through the 99th Constitutional Amendment Act-2014.
- The NJAC would have replaced the collegium system for the appointment of judges, but in 2015 it was struck down by the SC on the grounds of endangering judicial independence.

About the Collegium system:
- The collegium system is the way by which judges of the SC and HCs are appointed and transferred.
- It is a five-member body, which is headed by the incumbent Chief Justice of India (CJI) and comprises the four other senior most judges of the court at that time.
- A High Court collegium is led by the incumbent Chief Justice and two other senior most judges of that court.
- Judges of the higher judiciary are appointed only through the collegium system and the government has a role only after names have been decided by the collegium.
- Names recommended for appointment by a High Court collegium reach the government only after approval by the CJI and the SC collegium.
- The role of the government in this entire process is limited to getting an inquiry conducted by the Intelligence Bureau (IB) if a lawyer is to be elevated as a judge in a HC or the SC.

- The government may also object to and seek clarification on the collegium's choices, but if the collegium reiterates the same names, the government is bound to appoint them.
- The collegium system is not rooted in the Constitution or a specific law promulgated by Parliament, rather it has evolved through judgments of the SC.

The evolution of the Collegium system – Three Judges Cases:

- P. Gupta & Others v. Union of India, 1981: The opinion of the CJI had no primacy over the opinion of the Chief Justice of the HC, thus, both have equal importance in the consultation process.
- Advocate on Record Association v. UoI, 1993: The court overruled the above case and held that in the matters of appointment and transfer of Judges the view of CJI has the greatest significance.
- In re Presidential Reference case (1998): The recommendation made by the CJI without following the consultation process for appointment of SC and HC Judges is not binding on the government.

Criticism of the Collegium system:
- According to the critics, the system is non-transparent, since it is seen as a closed-door affair with no prescribed norms regarding eligibility criteria, selection procedure.
- The system is opaque and not accountable. Judges do not appoint judges all over the world, but in India, they do.

Way ahead: The **Memorandum of Procedure (MoP) –** an agreement between the judiciary and the government (came into existence after NJAC was struck down) that outlines the criteria for appointing judges to the SC and HCs, must be followed in letter and spirit.

2. **Election Commission - Recent Issues**
   Why in news?
   The on-going hearing before the Supreme Court on the need to have a neutral mechanism for appointment of Election Commissioners raises questions on the body's functional independence.

   Structure of Election Commission of India (ECI)
   - **Establishment** - The ECI is an **autonomous permanent constitutional authority** established in 1950 for administering election processes in India.
   - The Election Commission operates under **Article 324 (Part XV of the Constitution)** and the subsequently enacted Representation of the People Act.
   - **Elections** - The body administers elections to the
   - Lok Sabha
   - Rajya Sabha
   - State Legislative Assemblies
   - Office of the President

- Office of the Vice President
- **Composition** - Originally the commission had only a Chief Election Commissioner (CEC).
- Since 1993, it has become a multi-member commission with Chief Election Commissioner and two Election Commissioners (ECs).
- Article 324(2) empowers the President of India to fix from time to time the number of Election Commissioners other than the CEC.
- If the CEC and other ECs differ in opinion on any matter, such matter shall be decided by according to the opinion of the majority.
- **Appointment** - The President appoints Chief Election Commissioner and Election Commissioners.
- **Tenure** - They have tenure of 6 years, or up to the age of 65 years, whichever is earlier.
- They enjoy the same status and receive salary and perks as available to Judges of the Supreme Court of India.
- **Removal** - The Chief Election Commissioner can be removed from office only through impeachment by Parliament.
- **State level** - At the state level, the election work is supervised, subject to overall superintendence, direction and control of the Commission, by the Chief Electoral Officer of the State.

Major functions of the ECI

- **Political parties** - Election Commission is responsible for conducting free and fair elections across the country.
- The ECI is involved in the registration of political parties and ensures inner party democracy.
- **Advisory jurisdiction** - The Commission has advisory jurisdiction in the matter of post-election disqualification of sitting members of Parliament and State Legislatures.
- The cases of persons found guilty of corrupt practices at elections which come before the Supreme Court and High Courts are referred to the ECI for its opinion.
- **Quasi-judicial functions** - The Commission settles disputes between the splinter groups of recognised parties.

Provisions available for ECI's independence
- **Removal** - The Chief Election Commissioner can be removed from office only through impeachment by Parliament.
- The procedure is similar to the process of removal of Supreme Court judge.
- Election Commissioners cannot be removed from office except upon the recommendation of the CEC.
- **Service conditions** – The service conditions of CEC cannot be varied to their disadvantage after the appointment.

Current Issue with appointments:

- **Appointments-** At present, the CEC and ECs are appointed by the president on the advice of the Cabinet under Transaction of Business Rules, 1961 of the Union cabinet.
- The current convention is to appoint ECs, and elevate them as CEC on the basis of seniority.
- The issue is related to the
- likelihood of bias in the appointments
- possibility of biased conduct by CEC and ECs in the future
- scope for personal whimsy in appointments of EC

Given the Court's vocal concern about the ECI's independence, the question is whether the Commissioners should be appointed on the recommendation of a high-powered committee independent body.

- **Tenure –** The Court has questioned the practice of appointing CECs close to the age of 65 so that they have only a brief tenure.
- Equal tenure security for CEC and Election Commissioners will boost their independence.
- The ECs must also be provided with security of tenure as they can be removed from office on the CEC's recommendation.

Unit – II: Role and impact of Science and Technology in the development of India

1. **Web 3.0**
   Introduction:
   The concept of Web3, also called Web 3.0, used to describe a potential next phase of the internet, created quite a buzz in 2021.

   Key Points
   About:
   - World Wide Web, which is also known as a Web, is a collection of websites or web pages stored in web servers and connected to local computers through the internet.
   - These websites contain text pages, digital images, audios, videos, etc. Users can access the content of these sites from any part of the world over the internet using their devices such as computers, laptops, cell phones, etc.
   - Web 3.0 is a decentralized internet to be run on blockchain technology, which would be different from the versions in use, Web 1.0 and Web 2.0.
   - In Web3, users will have ownership stakes in platforms and applications unlike now where tech giants control the platforms.
   - Gavin Wood, founder of Ethereum, a block chain technology company, used the term Web3 first in 2014 and in the past few years many others have added to the idea of Web3.

   Previous Versions:
   Web 1.0:
   - Web 1.0 is the world wide web or the internet that was invented in 1989. It became popular from 1993. It lasted until 1999.

- The internet in the Web 1.0 days was mostly static web pages where users would go to a website and then read and interact with the static information.
- Even though there were e-commerce websites in the initial days it was still a closed environment and the users themselves could not create any content or post reviews on the internet.

Web 2.0:
- Web 2.0 started in some form in the late 1990s itself though 2004 was when most of its features were fully available. It is still the age of Web 2.0 now.
- The differentiating characteristic of Web 2.0 compared to Web 1.0 is that users can create content.
- They can interact and contribute in the form of comments, registering likes, sharing and uploading their photos or videos and perform other such activities.
- Primarily, a social media kind of interaction is the differentiating trait of Web 2.0.

Need of Web 3.0:
- In Web 2.0, most of the data in the internet and the internet traffic are owned or handled by very few companies ex. Google.
- This has created issues related to data privacy, data security and abuse of such data.
- There is a sense of disappointment that the original purpose of the internet has been distorted.

Significance of Web 3.0:
- Decentralized and Fair Internet: Web3 will deliver a decentralized and fair internet where users control their own data.
- Eliminates Intermediaries: With block chain, the time and place of the transaction are recorded permanently.
- Thus, Web3 enables peer to peer (seller to buyer) transactions by eliminating the role of the intermediary. This concept can be extended to
- Decentralization and Transparency: The spirit of Web3 is Decentralized Autonomous Organization (DAO).
- DAO is all about the business rules and governing rules in any transaction are transparently available for anyone to see and software will be written conforming to these rules.
- With DAO, there is no need for a central authority to authenticate or validate.

Way Forward
- Web3 is in its very initial days and there is no consensus if it will take off like Web 1.0 or Web 2.0 did. There is much skepticism from top tech brains in the industry and the academic community that Web3 does not solve the problems it purports to solve.

- Web3 will require deviation from the current architecture where there is a front-end, middle layer and back-end.
- Web3's architecture will need backend solutions for handling block chain, persisting and indexing data in block chain, peer to peer communications and so forth.
- Similarly, the middle layer, also called the business rules layer, will need to include handling block chain-based backend.

2. Metaverse

Introduction:

The metaverse is an extension of our real world into the digital realm providing an immersive multi-user experience for anyone accessing it around the globe.

Accessing this virtual world requires the Internet and digital devices. The technology behind this is called Augmented Reality (AR) and Virtual Reality (VR).

The growth of Digital India is accelerated by India's large young population which is deeply acquainted with digital interactions and recreations. While the technical, demographic and policy foundations for the metaverse appear to be present in India, there remains the operational challenge of building the metaverse.

Applications of Metaverse:

- E-Commerce: The metaverse can bridge the gap between the physical and virtual world, hence merging online and offline commerce into one. This means that users will be able to experience the physical world via the metaverse, digitally, making online shopping more convenient.
- Companies would benefit hugely from the metaverse, as it not only widens their consumer base but also has the potential to get reviews on new products, thus pointing them in the right direction for the future.
- Brands can interact with the global audience through Metaverse in the ecommerce business framework despite the geological barriers.
- Skill Enhancement: Metaverse can play a key role in skill enhancement in a remote manner due to its scope of developing new experiential learning scenarios.
- Virtual Tourism: With the 360° virtual tour, the viewers can not only watch the location recorded but also be present digitally in the desired location with realistic effects.
- For instance, Virtual Reality Holiday "Try before you Fly" helps the potential tourists to visit their desired destinations virtually.
- Education and Learning: VR combined with the effects of Metaverse has brought the learning experience to a qualitative new level. Students can now watch live experiments with more intensive and high quality knowledge resources.
- Another Metaverse example is Mesh created by Microsoft which is a mixed reality platform where faculty, staff and students can interact using their 3D avatars.

- Healthcare: Telemedicine and Telehealth is a concept fueled by the Metaverse post pandemic where patients and doctors can interact in virtual 3D clinics.

Challenges Associated with Metaverse in India:
- Privacy and Security: Online risks may be exacerbated in the metaverse, where unwanted contact could become more intrusive and pervasive.
- There exists a possibility of the citizens' data being collected and sold to third-party aggregators.
- If the metaverse suffers from weak security procedures, it may also be vulnerable to cyber-attacks, identity theft, fraud and a safe haven for the harassers, criminals and fringe groups.
- The increase in virtual interactions and the growth of concepts like digital avatars will make tracking and intercepting illegal content and cybercriminals more difficult.
- Tradition v/s Technology: Technology with its vast positiveness, does have a great negativeness for the tradition.
- There are both benefits and drawbacks to social networking sites. The rise of social media has introduced pseudo social behaviour that has slightly delineated traditional social values of collectivism and brotherhood.
- Legality of Metaverse: The questions of legislations and jurisdictions that will be applicable in this boundless digital world is also a prominent concern requiring consideration by lawmakers.
- The protection of intellectual property (IP) and ownership is another legal issue that is likely to emerge.
- Protecting the IPR (IP Rights) of content creators will also be a challenge considering the difficulty in tracking copyright infringements in the virtual space.
- Insufficient Infrastructure and Connectivity: Building a pragmatic, robust and accessible meta-governance infrastructure is wrought with difficulties.
- At the very least, it will require a 5G connection to provide a safe and reliable experience. Most rural communities are still struggling with acquiring and maintaining a secure 4G connection.
- Additionally, the amount of energy currently available is inadequate compared to the energy warranted by the metaverse.
- Digital Divide: As per ITU's World Telecommunication/ICT Indicators Database 2020, only 43% of the population in India uses the internet.
- This has widened the gap between demographics and regions that have access to modern information and communications technology (ICT), and those that don't or have restricted access.

Way Forward:

- Reducing the Digital Divide: Governance mechanisms for virtual worlds would need to be supported with strengthening and scaling efforts to promote digital literacy, safety and wellbeing so that participants can engage meaningfully in online communities while consciously navigating harmful content and behaviors.
- Policy Backing: It is the right time for the government to create the right policy background for its operation and leverage the metaverse for public services.

- The government needs to focus on information accessibility, information utilization and information receptiveness.
- Safe and Secure Metaverse Ecosystem: There is a strong need to develop and regulate effective ecosystems to address the distinct elements of safety, privacy, and security within the DNA of this technology.
- Meta Help Desk: In e-governance, essential information is released to a targeted audience through ICT. Meta-help desks or meta-divisions in a particular ministry/ other government agencies can help in providing the critical data required.
- Transparent and Consent-based Applications: Technology companies will need to be more responsible and transparent in their data processing and safety practices.
- Global Cooperation: As the metaverse continues to develop, we are seeing a glimpse of a more digitally advanced borderless world that is full of promise.

3. Vande Bharat Express
Introduction:

The Vande Bharat Express, formerly known as Train 18, is an electric multiple-unit train operated by Indian Railways. The train has achieved a max speed of 180 km/h (110 mph) during testing. Due to the railway track speed capacity and traffic constraints, the operating speed of the train is limited to 160 km/h (99 mph) on the Delhi-Bhopal route and 110–130 km/h (68-81 mph) on other routes due to safety concerns.

It was designed by RDSO and manufactured by the government-owned Integral Coach Factory (ICF), located in Chennai Vande Bharat Express design and specifications has been standardized by RDSO.[It was made with low-cost maintenance and operational optimization in mind. The cost of a 16-coach Vande Bharat train is about ₹115 crore (US$14 million).]The cost of 8 coach Vande Bharat train is about ₹70 crore (US$8.8 million).

On 27 January 2019, 'Train 18' was renamed as 'Vande Bharat Express'. The train went into service on 15 February 2019.

Background

The Vande Bharat Express is based on Mainline Electric Multiple Unit (MEMU) trainsets, of which the standard design has been in service since the mid-1990s. The Integral Coach Factory has manufactured MEMU technology for the last 25 years.[As a supplement for the long-distance Vande Bharat Express, a modified MEMU was built incorporating Vande Bharat technology for suburban, commuter and short-distance intercity runs.

In June 2015, Indian Railways issued a bid for train manufacturing, but no bid met the necessary criteria, leading to the decision to manufacture trains independently in India.

Two new trains were announced to be manufactured at ICF and were named "Train-2018" due to the targeted completion date.

Manufacturing first set
The manufacture of "Train-2018" was completed in October 2018. During the test runs, the train achieved an operational speed of 180 km/h (110 mph), matching the speed achieved by a locomotive-hauled consist largely made of MEMU's EMU architecture coaches. In Vande Bharat rakes, out of 16 coaches 8 are motorised providing approximately 12000 HP of power to the train, some of the trains in Mumbai-Shirdi and Mumbai-Solapur route have additional traction motor system and emergency park brakes which helps to climb the steep ghats. The interior is a new kind of innovative design from ICF, Chennai.

Train versions:
Vande Bharat 1.0 (VB1)

As part of the "Make in India" initiative, the Integral Coach Factory (ICF), under the direction of Sudhanshu Mani, created and produced the Vande Bharat. It was originally called "Train 18". On 26 January 2019, Railway Minister Piyush Goyal announced that the train would be named the Vande Bharat Express.

Vande Bharat 2.0 (VB2)
Vande Bharat 2.0 Chair Car (CC) seating
The VB2 trains can accelerate to a speed of 100 km/h (62 mph) in 52 seconds, compared to the 54 seconds taken to reach the same speed by the older version. The train can reach a speed of 160 km/h (99 mph) in 140 seconds, 5 seconds faster than the first generation of the Vande Bharat. VB2 is lighter, weighing 392 tonnes compared to 430 tonnes for the previous version.

Vande Bharat 3.0 (VB3) (Train 20)
The Vande Bharat 3 trainset will introduce sleeper coaches for the first time. It will have three classes: AC-1, AC-2, and AC-3. The VB3 is expected to have a maximum speed of 180–200 km/h (110–120 mph) and a design life of 35 years.   [These trainsets are intended for Train 20 services]

Vande Bharat 4.0 (VB4)
The fourth generation Vande Bharat (VB4) trains are planned to have a maximum speed of more than 200 km/h (120 mph). VB4 coaches will be made of a lightweight aluminium alloy.

UNIT – III: Tamil Society – Its Culture and Heritage

1. **Recent Archaeological Excavations**
    Introduction:

    Archaeological excavations in Keeladi, a Sangam-era urban industrialised settlement on the banks of River Vaigai in Madurai from where over 18,000 artefacts have been

unearthed in the past eight years, entered the ninth phase on Thursday, even as digging began in seven other locations for the 2022-2023 season.

Chief Minister M K Stalin, who has been maintaining that his government will scientifically prove that India's history should be rewritten from the Tamil landscape, launched the excavations via videoconferencing from Fort St George, the seat of power of the Tamil Nadu government.

Latest Excavation:
The latest excavation is the ninth season for Keeladi, while it entered different phases in its cluster sites of Konthagai, the burial site of the urban settlement in Keeladi, Manalur and Agaram. The excavations entered the third phase in Gangaikondacholapuram, a city built by the famed Chola king Rajendra I, it is the second phase in Vembakottai, and Thulukarpatti.

Four new locations:
We have sent a proposal to the Central Advisory Board for Archaeology (CABA) seeking permission to conduct archaeological excavations in eight locations. While four are old places, the remaining four have been added to the list.

Four new locations – Kilnamandi in Tiruvannamalai district, Porpanaikottai (Pudukkottai), Boothinatham (Dharmapuri), and Pattaraiperumbudur (Tiruvallur) – were also added to the list this year. The excavations, which were approved by the Central Advisory Board for Archaeology (CABA), will come to a close in September 2023. A sum of Rs 5 crore has been allotted for the purpose.

"These new excavations are expected to throw up findings which will further enhance our understanding of this (Keeladi) civilization. We expect that the antiquity of these finds in this location will further take back the date of this civilization".

Keeladi Museum:

Stalin also launched the Keeladi Augmented Reality App to be used at the brand-new museum in Keeladi village near Madurai. The museum, built at a cost of Rs 18 crore, is spread over an area of 31,000 square feet displaying thousands of artefacts unearthed during the previous phases of excavations.

Conclusion:

Archaeological excavations in Tamil Nadu have created a buzz in the past few years with findings from Keeladi and Sivakalai dating back to 2,600 and 3,200 years ago. The DMK government has been according top priority to the archaeology department by allotting enough funds to carry out excavations.

A press release from the government said the excavation in Kilnamandi will explore and sequence the change of period from new stone age to iron age through digging and analysing the burial urns that are likely to be unearthed.

In Porpanaikottai, the excavation will explore and look for evidence to find out its association with the Sangam era, while the digging in Boothinatham will look for evidence of new stone age settlement having existed. The cultural deposit at Pattaraiperumbudur found in 2016 can be divided into Stone age period, Iron age period and Early historical period, the TNSDA said.

Archaeological excavations at seven locations in Tamil Nadu during 2002 yielded nearly 8,000 artefacts of which 2,200 are from Keeladi and cluster sites, Vembakottai (2,985), Gangaikondacholapuram (900), Perumbalai (315), Thulukarpatti (800), Mayiladumparai (415), and Sivakalai (191). In Gangaikondacholapuram, remains of a palace built by Rajendra I and further traces of ancient trade links with China were the highlights of the excavation done in 2022.

PAPER - III

UNIT- I: Geography of India with special reference to Tamil Nadu

1. **Migration Issues**

Context
- Tamil Nadu has been witnessing controversies in recent months over the recruitment of non-Tamils in government jobs that have triggered a perceptible rise in voices against migrants taking up jobs in the State.
- After the Andhra Pradesh government's recent legislation to reserve 75% of jobs in the private sector for locals, tensions in the state are intensifying even more.

The Recent Case

- A video clip of a railway job aspirant from a village in Tamil Nadu, went viral describing his experience at the physical examination asserting huge turnout of North Indians.
- The same day several videos were circulated showing a crowd, purportedly of migrants, who had lined up outside the Tamil Nadu Special Police Force Training Ground to attend the physical examination test.
- Hence, concerns were voiced about migrants taking away opportunities from the local workforce in Tamil Nadu.
- The slogans demanding 'protection' of jobs in Tamil Nadu have also gained traction among a section of mainstream political parties.
- The government order allowing people from outside Tamil Nadu to get state and central jobs in the state was amended during the former AIADMK regime.

Number of Migrants Working in TN

- According to a PIB 2022 report, based on the 2011 census, there are over 34.87 lakh migrant labourers in the state and of this 7.13 lakh are women.

- Also, about half are concentrated in northern Tamil Nadu cities of Thiruvallur, Chennai and Chengalpattu, while the remaining are primarily based in the manufacturing hubs of Tirupur, Coimbatore and Erode.
- The migrant workers are majorly employed as labourers at various construction sites and industrial areas in the state.
- The industry bodies thus fear that the state's industrial and manufacturing sector would be severely impacted by a migrant exodus.

Unfounded Fears
- While the popular perception is that a majority of migrants are from north-eastern and northern States, Census 2011 data shows that 2% of the migrants are from neighbouring States like Andhra Pradesh, Kerala, Karnataka and Puducherry.
- While 12.76 lakh migrants from these neighbouring States were residing in TN in 2011, the same figure from TN migrating to these States was higher, at 15.86 lakh.
- The data proves that the fears about migration are often exaggerated and misconceptions abound.
- Also, a vast majority of the migrants come to TN mainly for '3D' jobs, i.e., dirty, dangerous, and demeaning jobs, which the locals do not prefer.
- Thus, the migrants are not taking away the skilled and locals in the state are able to get competent jobs because of comparably stronger investments in education, which have been accompanied by economic growth in the state.

Extent of Internal Migration in India
- The 2011 census reported the number of internal migrants in India at 36 crore, making up 37% of the country's population.
- This number included both inter-state migrants and intra-state migrants. The annual net migrant flows amounted to about 1% of the working age population.
- Also, the duration of stay of migrants indicates that immigration to TN had been happening gradually for long as 42% of the migrants residing in TN had moved 10 years before, while nearly 23% had moved 20 years before.
- The Economic Survey 2016-17 pegged the size of the migrant workforce at roughly 20% of the population, or more than 10 crore
- District-wise migration data revealed that the highest influx of migrants within the country was in city-districts such as Gurugram, Delhi, and Mumbai while relatively less developed states such as Bihar and Uttar Pradesh have high net out-migration.
- Also, few pockets like Gautam Budh Nagar (Uttar Pradesh), Indore and Bhopal (Madhya Pradesh), Bengaluru (Karnataka) and Thiruvallur, Chennai, Kancheepuram, Erode, and Coimbatore (TN) reflected in-migration.
- Also, relatively more developed states take positive CMM (Cohort-based Migration Metric) values reflecting net immigration such as Goa, Delhi, Maharashtra, Gujarat, Tamil Nadu, Kerala and Karnataka.
- The largest recipient was the Delhi region, which accounted for more than half of migration in 2015-16, while UP and Bihar taken together account for half of total out-migrants.

- Maharashtra, Goa and Tamil Nadu had major net in-migration, while Jharkhand and Madhya Pradesh had major net out-migration.
- The Report of the Working Group on Migration, 2017 by Ministry of Housing and Urban Poverty Alleviation, revealed that 17 districts accounted for top 25% of India's total male out-migration.
- Ten of these districts are in UP, six in Bihar, and one in Odisha.

Migration in India Report 2020-21
- The report released by MoSPI in 2022 noted that 7% of the country's population was recorded as a 'temporary visitor' across households after the onset of the Covid-19 pandemic in 2020.
- The temporary visitors were defined as those who arrived in households after onset of the Covid-19 pandemic in March 2020 and stayed continuously for a period of 15 days or more but less than 6 months.
- On the other hand, migrants were classified as people whose current location of enumeration is different from their previous place of habitation.

Conclusion
- While the necessity and importance of migration cannot be overlooked, few concerns raised by locals in the TN need redressal, if there are alleging bias in government recruitment, where **people with fluency in Hindi are preferred over the locals**.
- However, these concerns should not lead to an anti-migrant mindset and **a holistic policy to accommodate migrant workers should be adopted.**

2. **UN year 2023 – International year of Millets**
   Introduction:

   India has shared the vision to make International Year of Millets 2023 a 'People's Movement' alongside positioning India as the 'Global Hub for Millets'.

   International Year of Millets:
   About:

   - India's proposal to observe an International Year of Millets in 2023 was approved by the Food and Agriculture Organisation (FAO) in 2018 and the United Nations General Assembly has declared the year 2023 as the International Year of Millets.
   - This was adopted by a United Nations Resolution for which India took the lead and was supported by over 70 nations.

   Objectives:
   - Awareness of the contribution of millet to Food Security and nutrition.
   - Inspire stakeholders to improve sustainable production and quality of millets.
   - Focus on enhanced investment in research and development and extension services to achieve the other two aims.

- What is Millet?

About:
- Millet is a collective term referring to a number of small-seeded annual grasses that are cultivated as grain crops, primarily on marginal lands in dry areas in temperate, subtropical and tropical regions.
- Some of the common millets available in India are Ragi (Finger millet), Jowar (Sorghum), Sama (Little millet), Bajra (Pearl millet), and Variga (Proso millet).
- The earliest evidence for these grains has been found in Indus civilization and was one of the first plants domesticated for food.
- It is grown in about 131 countries and is the traditional food for around 60 crore people in Asia & Africa.
- India is the largest producer of millet in the world.
- It accounts for 20 % of global production and 80% of Asia's production.

Global Distribution:
- India, Nigeria and China are the largest producers of millets in the world, accounting for more than 55% of the global production.
- For many years, India was a major producer of millets. However, in recent years, millet production has increased dramatically in Africa.

Significance:
Nutritionally Superior:

- Millets are less expensive and nutritionally superior to wheat & rice owing to their high protein, fibre, vitamins and minerals like iron content.
- Millets are also rich in calcium and magnesium. For example, Ragi is known to have the highest calcium content among all the food grains.
- Millets can provide nutritional security and act as a shield against nutritional deficiency, especially among children and women. Its high iron content can fight high prevalence of anaemia in India women of reproductive age and infants.

Gluten-free a low Glycemic Index:

- Millets can help tackle lifestyle problems and health challenges such as obesity and diabetes as they are gluten-free and have a low glycemic index (a relative ranking of carbohydrate in foods according to how they affect blood glucose levels).

Super Crop at Growing:
- Millets are Photo-insensitive (do not require a specific photoperiod for flowering) & resilient to climate change. Millets can grow on poor soils with little or no external inputs.
- Millets are less water consuming and are capable of growing under drought conditions, under non-irrigated conditions even in very low rainfall regimes.
- Millets have low carbon and water footprint (rice plants need at least 3 times more water to grow in comparison to millets).

UNIT- II : Environment, Bio Diversity and Disaster Management

TAMIL NADU CLIMATE CHANGE MISSION

- **Invest in a transformational planning & programming methodology** by adopting integrated strategies, planning and policymaking to maximise co-benefits between mitigation, adaptation and sustainable development.

- **To expand collective human action** to respond to climate change by investing in definite strategies, research & evidence, coordination with line departments and well-planned measures for maximum efficiency.

- **Reduce Greenhouse Gases** developing methods for emission reduction by use of efficient public transport systems. use of clean and green energy, alternative fuel resources, better monitoring etc.

- **Work closely with stakeholder departments** on eco alternative solutions to single use plastic, sustainable practices for disposal of solid waste and also, work with partners and expert institutions to develop new technologies in the sector.

- **Climate courses** and curricula in Universities, Institutions, Agencies etc., shall be encouraged under the Mission

- **As the leader's mission,** efforts would be taken to utilize Green Technology to create new employment opportunities (Green Jobs) as a boost to the economy.

Focus Areas

- Sustainable Agriculture & Allied Sectors
- Water Resources
- Forest and Biodiversity
- Coastal Area Management
- Strategic Knowledge & Climate Literacy
- Disaster Management & Mitigation
- Health & Sanitation

- Enhanced Energy Efficiency & Solar
- Mission on Sustainable Habitat & Green Mobility
- Gender and Climate Change
- Children and Youth for Climate Action
- Eco-Friendly Technologies

Projects

Climate Smart Villages (CSV)

CSV shall serve as demo sites to test an approach through participatory methods of various technological and institutional options for dealing with Climate Change at the community level.

- Understand challenges and vulnerability of the local community towards climate risks.

- Two temples, one each at Madurai and near Chennai will be taken up for Climate Proofing as pilots to demonstrate measures towards climate adaptation and mitigation.

- Develop future solutions to build climate resilience and increase adaptation & mitigation measures.

- Identify & implement village / community level agriculture.

- Identify ecological and socio economical solutions viz., setting up village level Information centres for weather smart activities like agro advisories

- Carbon / nutrient smart practices for better management of agroforestry, land use, livestock management. bio fuels etc.

- Institutional / market smart activities like farmer-to-farmer learning, contingency planning, market info etc.

- Learnings from smart villages would help the State understand ground level climate related interventions which could be upscaled at

the State level helping the Government in climate proofing of various Govt schemes

Rehabilitation of coastal habitats

Formation of Bio- shields through cultivation of casuarina, palmyrah, cashew and other specialised species

Propagating Mangrove plantations in coastal districts where it naturally grows in local ecosystems. Protecting and enhancing the growth of seagrass and coral reefs.

Carbon enrichment programme

Soil carbon storage is a vital ecosystem necessity which plays an extremely important role in promoting tree growth through increased supply of nutrients, enhanced retention of water and by storing significant amounts of carbon.

Greater Chennai Corporation has set up a bio mining plant at Perungudi, Chennai. Soil obtained after bio mining of the legacy municipal solid waste is extremely rich in nutrients and carbon.

Sustainable habitat

- Energy saving measures in government and private buildings, both independent homes and apartments to reduce greenhouse gas emissions from energy production and consumption.

- Create awareness among residents about the need for energy saving, electricity in particular

- Train builders & developers in cost saving climate friendly building infrastructure through workshops.

- Develop SOP for construction of energy efficient housing programs and develop green building rating mechanisms as a pilot project.

Climate Resilient Green Temples

Two temples, one each at Madurai and near Chennai will be taken up for Climate Proofing as pilots to demonstrate measures towards climate adaptation and mitigation.

The pilot would include efficient solar lighting, water management, heat management. greening, eco restoration of temple tanks. interventions to remove plastic and micro plastic etc.

1.   Tamil Nadu Wetland Mission

AIM

- The Mission will identify and map 100 wetlands in 5 years and restore the ecological balance with focus on livelihood options

- A Project Management Unit (PMU) has been set up under the Additional Principal Chief Conservator of Forests & Member Secretary, Tamil Nadu State Wetlands Authority which will be involved in the Mission activities like preparation of brief documents and final notification of the natural wetlands, preparation of proposals for the RAMSAR sites, creation of wetland conservation centre at Muthupet, Tiruvarur District etc., as envisaged under the Action Plan for the Tamil Nadu Wetland Missionfor the year 2021-2012.

Objectives

Conserve Biodiversity

Identify, map and inventories wetlands in the State of Tamil Nadu and Conserve wetland biodiversity through community-based approaches.

Eco-Restoration

Undertake comprehensive eco-restoration of wetlands in accordance with proven scientific strategies and evidence based methodologies.

Campaigns & Research

Raise awareness on wetland conservation through public awareness campaigns and Promote research and monitoring of wetland resources for effective management.

Importance of Wetlands

- Wetlands offer a multitude of ecosystem services which have significant impact on the socio-economic sphere of our lives. Millions of people depend on wetlands for their livelihood.

- They play a critical role in water purification, ground water replenishment, drought and flood management. Conservation of wetlands is essential for water and food security. Role of wetlands has become even more important in the light of adverse and serious impact of climate change. Wetlands are particularly impacted by climate change, especially sea-level rise, coral bleaching as a result of increased sea surface temperatures, and changing hydrology in inland waters. Wetlands are known to be repositories of carbon and are considered as "carbon sinks".

- Wetlands are considered to be natural climate regulators as they play an important role in maintaining water balance in an ecosystem. Innumerable plant and animal species thrive in wetlands. Wetlands also offer refuge to millions of migratory and resident birds and are hotspots for biodiversity. Importance of wetlands as tourist attraction is also well known. Protection of wetlands and their conservation is therefore essential for survival of living beings.

- Wetlands being an important Carbon and Methane sink and has the potential for reversing the global warming related climate vulnerabilities and risk to the environment and human lives.

Mission

- **Minimize the rate** of loss of natural wetlands and feasibly enforce "Net Zero Wetland Degradation" with the help of Government, Experts, NGO's and local communities or the wetland mitras.

- **Improvement in water-related ecosystem services**, such as clean drinking water, water for agriculture and flood regulation, erosion control, sediment deposition, carbon sequestration, increase in agricultural production, inland fisheries and tourism activities.

- **Reduction in incidences** of nutrient enrichment from current level of 100% to 25% by promoting organic farming adjoining the wetlands by the end of 5 years

- **Introduction of Carbon Credit System** in the wetlands restoration programme and involve local communities for reaping the benefits of future voluntary Carbon market.

- **Generate widespread awareness** amongst the people and communities on the ecosystem value of the wetlands and the need for its conservation and wise use for the sustenance of future generations.

Projects

Ecological Restoration of Ennore Creek

The Ecological Restoration of Ennore Creek is being carried out

Integrated Management Plan for Wetlands.

Preparation of 100 Integrated Wetland Management Plans (IMPS) of the identified wetlands including the RAMSAR sites which depicts details on the biodiversity, ecosystem services and value of wetlands for the current and the future periods.

Wetland Ecosystem Restoration

Restoring 100 prioritized wetland ecosystems and deriving the Total Economic Valuation of the wetland ecosystem benefiting the local communities in the state.

Restoration of degraded coastal wetlands

The proposal for Restoration of degraded coastal wetlands focusing on seagrass meadows in Gulf of Mannar, Tamil Nadu for strengthening the climate adaptation and climate resilience for the livelihood sustainability of the local communities was approved by the Tamil Nadu State Wetland Authority. The works will commence soon after the Government approval.

Ecological Restoration of the Otteri lake

The ecological restoration of the Otteri lake located at Arignar Anna Zoological Park, Vandalur, the sum of Rs. 1,50,00,000/- (Rupees One Crore and Fifty Lakhs only) has been initiated.

2. TAMIL NADU GREEN CLIMATE COMPANY

The State Government has set up the Tamil Nadu Green Climate Company (TNGCC) to implement the three key Missions of the Government of Tamil Nadu, viz., The Tamil Nadu Climate Change Mission, The Green Tamil Nadu Mission and the Tamil Nadu Wetlands Mission.

While these Missions shall be implemented through the Department of Environment, Climate Change and Forests, Tamil Nadu Green Climate Company (TNGCC) will facilitate the involvement of the academia, private sectors and societies for transitioning the State to climate friendly platforms, championing renewable energy, sustainable and resilient infrastructure, agriculture, management and protection of forests, resilience and adaptation to climate impacts.

Mission

- **Planning**, execution and monitoring of the three flagship missions to address climate change.

- **Create** strong policy support for climate change, and also devise strategies to reduce greenhouse gas emission.

- **To identify**, secure and channelise resources in terms of technological support, funding etc., from national/international donor agencies, institutions of repute and corporate social responsibility (CSR) partnerships.

Vision

- **To steer** Tamil Nadu to a Climate Smart State.

- **Driving Innovative** Climate & Sustainability solutions by transforming Communities, Urban & Rural infrastructure, across the state that are hardest hit by Climate Disruption.

TNGCC Mandate

- Preparing a comprehensive pathway to a Resilient & Climate Smart Tamil Nadu
- Conceptualize and setup financing models for climate project
- Identify sectoral priorities like Energy Transition
- Access Tamil Nadu's Climate risks & Vulnerability
- Identify sectoral priorities like Transport
- Work closely with communities on climate literacy & Grassroots Climate Actions
- Forge Local, National and Global partnership for Climate Action
- Identify sectoral priorities like Sustainable waste management

Action Plan

Technology:

Adopt climate smart strategies by shifting towards renewable energy, use of electric vehicles and other innovative climate solutions.

Energy Transition:

Green indexing of Industries, promote cleaner energy systems etc

Emission Reduction:

Identify and promote effective ways to reduce carbon emission

Transportation:

Promote strategies for clean vehicle usage

Sustainable Agriculture:

Develop & Implement strategies to reduce losses in agriculture due to extreme weather

Climate resilience:

Build ecosystems to manage droughts, create institutional frameworks to combat climate change etc.

Water Resources:

Adaptation of climate change programmes on water resources, modernize irrigation, water use efficiency etc.

Coastal Area Management:

Integrate tree plantation with water management, assess microplastics in coastal areas, protect shores etc.

Disaster Management & Mitigation:

Deploy digital risk mapping models to combat risks, map vulnerable areas, strengthen post disaster surveillance and response systems etc

Health:

Increase capacity of primary and secondary healthcare network by improving the infrastructure of hospitals

UNIT- III: Indian Economy - Current economic trends and impact of global economy on India

1. Gig economy

Introduction:
Gig Economy is a temporary, flexible, or freelance market system wherein potential workers are connected to customers or clients through online portals. Gig Economy is often called the freelance economy. It is an emerging economic model in which flexible part-time workers are hired to work in firms instead of hiring full-time employees.

What is Gig Economy?

Gig Economy is an emerging segment of the market. The Gig Economy essentially refers to a business or workforce model built around temporary work that an individual can deliver without formal commitment. The mobile advancement of the workplace

and the introduction of online platforms have been the crucial reasons that led to the evolvement of the concept of the modern Gig Economy.

The Individuals who are a part of the Gig Economy are termed Gig workers. They are further divided into two types-
- Platform workers
- Non-platform workers

The workers whose job depends on the digital/ social or online platform are Platform workers, while the others are casual wage workers. The non-platform workers can be part-time or full-time employees and are also called own-account workers.

The gig workers can further be divided based on their skills into-
- Highly-skilled workers
- Medium-skilled workers
- Low-skilled workers

Gig Economy Structure

The Gig Economy comprises three units: corporations, employees, and customers. However, there is a difference between the work done by different employees. These are explained as under:

- **Temporary employees**: These are also called project-based employees, which means they are hired for a short period for a particular project.
- **Freelancers**: These employees are compensated per the job contract. They conduct the work assigned and are rewarded on a project-by-project basis.
- **Project part-time workers**: These employees work fewer hours than the work shifts.
  With the introduction of the Gig Economy, the consumers have the convenient option to use the service offered by the employee as per his demands.

Factors contributing to Gig Economy

The concept of the Gig Economy is driven by a few factors like the unconventional work approach by millennials and the rise in freelancing platforms. The crucial factors that contribute to Gig Economy are-
- The rise in freelancing platforms
- The emergence of a start-up culture
- Unconventional work approach by millennials
- MNCs are hiring contractual employees
- Business Models
- Impact of Covid-19
  Benefits of Gig Economy
- Gig Economy is an evolving sector that has changed how people look at jobs because it offers many benefits to employees and employers. The benefits of the Gig Economy can be summarized as follows:

- **Flexibility to work**: One of the major reasons that people are opting for the Gig Economy is the flexibility to work as per their availability and convenience. There are no restrictions on attendance or the work-hours. Some employees consider this option as a part-time job to earn a side income.
- **Jobs for Low-skilled workers**: Since it is a project-based or a less time job, there are chances for low-skilled workers.
- **Chance to gain experience**: Since a full-time job consumes time and more effort, this option enables college-going students to explore and gain the required skills and experience before entering the full-time work employment market.
- **No worry about Expenses**: Most of the Gig workers have the privilege of working remotely. This saves a lot of time and money, which is generally required to commute to an office.
- **No age barrier**: While most jobs are offered to young individuals, the concept of the Gig Economy also serves employment to the aged and retired people. They can keep busy even after retirement and earn independently without depending upon others.
- **Beneficial for Women**: The idea of the Gig Economy is highly beneficial to women who want to take a break from careers either because of marriage or childbirth.

2. Tamil Nadu Electric Vehicles (EV) policy 2023

Tamil Nadu has transformed into India's leading Electric Vehicles (EV) manufacturing hub over the last five years. There is heightened interest from EV Original Equipment Manufacturers (OEMs) and component manufacturers who wish to establish their units in the State. Notwithstanding the effects of the Covid-19 pandemic, the State has signed MoUs with an investment interest of nearly Rs. 24,000 crore and employment potential of 48,000 jobs in the EV value chain during this period.

Objectives

The policy objectives are as follows:

a) **Transform Tamil Nadu into the preferred destination for EV manufacturing in South-East Asia**

(i) Develop robust infrastructure & industrial ecosystem to attract manufacturing units.
(ii) Create indigenous EV manufacturing value chains by attracting EV OEM & Component manufacturers to establish units in the State.

b) **Accelerate adoption of EVs in Tamil Nadu**

(i) Provide initial impetus for early adopters of Electric Vehicles through special demand incentives.
(ii) Develop charging infrastructure with favourable power tariffs through public/ private measures.

c) **Enhance the development of the EV ecosystem in Tamil Nadu**

(i) Develop industry-academia linkages to create a skilled workforce pool for EVs.
(ii) Promote R&D and innovations in automotive and shared mobility.
(iii) Promote the recycling industry to develop a circular economy in the State.

d) **Develop EV Cities in Tamil Nadu**

(i) Promote Chennai, Coimbatore, Tiruchirappalli, Madurai, Salem, and Tirunelveli as pilot cities for implementing e-mobility solutions.
(ii) Promote electrification of commercial and public transport fleets.

Supply Side Policy Measures

1. Investment Promotion Subsidy
2. Electricity Tax Exemption
3. Stamp Duty
4. Subsidy on Cost of Land
5. Interest Subvention
6. Special Incentives for the MSME Sector

Demand Side Measures

1. Electrification of Vehicular Fleets in the State
2. Promoting EVs in Manufacturing Facilities
3. Revised Transport Regulation of Electric Vehicles
4. Exemption/Waiver of Road Tax/Registration Charges

Charging Infrastructure

1. Tariff for EV Charging
2. Incentives for Charging Stations
3. Public Charging Stations
4. Private e-Aggregator Charging Stations
5. Incentives for Public Battery Swapping Stations

Ecosystem Development

1. R&D and Business Incubation
2. Creation of a Circular Sustainable Economy
3. Renewable Energy Sourcing
4. Creation of EV Parks & Vendor Ecosystem
5. Promoting Startups in the EV Sector