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DAILY CURRENT AFFAIRS

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CONTENT LIST

GS 1: ART & CULTURE, HISTORY, INDIAN SOCIETY AND GEOGRAPHY

1. 402nd birth anniversary of Lachit Barphukan observed

Context: Union Home Minister Amit Shah yesterday paid tribute to the bravery and heroism of Ahom General Lachit Barphukan on Lachit Divas. It was the 402nd birth anniversary of the brave martyr, to which Governor Lakshman Prasad Acharya also paid floral tribute to the warrior at a function held at Raj Bhavan. The day is celebrated to honour the bravery and leadership of Lachit Barphukan, who's leadership led to the great victory in the battle of Saraighat over the Mughal Army.

Key points

- **Lachit Borphukan:** He has been revered in Assam as the warrior who defeated Mughal armies in the Battle of Saraighat in 1671. He was commander of the Ahom armies during the battle of

Saraighat – fought on the banks of Brahmaputra in Guwahati. He was a brilliant military commander. He was chosen as one of the five Borphukans of the Ahom kingdom by king Charadhwaj Singha and given administrative, judicial, and military responsibilities. Borphukan preferred guerrilla tactics which provided an edge to his smaller, but fast moving and capable forces. He died a year after the Battle of Saraighat from a long festering illness.

- *Guerrilla warfare* - It is a type of warfare fought by irregulars in fast-moving, small-scale actions against orthodox military and police forces and, on occasion, against rival insurgent forces, either independently or in conjunction with a larger political-military strategy.

- **The AHOM Kingdom:** The Ahom kings ruled large parts of what is now known as Assam for nearly 600 years, from the early 13th century to the early 19th century. This was a prosperous, multi-ethnic kingdom which spread across the upper and lower reaches of the Brahmaputra valley, surviving on rice cultivation in its fertile lands. The Ahoms engaged in a series of conflicts with the Mughals from 1615-1682, starting from the reign of Jahangir till the reign of Aurangzeb.
- **Political Setup:** Ahoms created a new state by suppressing the older political system of the bhuiyans (landlords). The Ahom state depended upon forced labour. Those forced to work for the state were called paiks.
- **Society:** Ahom society was divided into clans or khels. A khel often controlled several villages. Ahoms worshipped their own tribal gods, yet they accepted the Hindu religion and the Assamese language. Intermarriage with local also increased assimilation processes of Ahoms in Assamese culture.
- **Art and Culture:** Poets and scholars were given land grants and theatre was encouraged. Important works of Sanskrit were translated into the local language. Historical works, known as buranjis, were also written, first in the Ahom language and then in Assamese.

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

2. NFR introduces new system in level-crossing gates

Context: The Northeast Frontier Railway (NFR) has started providing 'rubberized surface' in level-crossing gates to enhance safety. Nine LC gates are being provided with rubberized surfacing in the Lumding-Furkating section. This modernization initiative will extend to the remaining eight LC gates in the section and is scheduled for completion by December this year. The project involves a total cost of Rs 81 lakh, with Rs 9 lakh allocated per LC gate. The installation process is quick and efficient, requiring only a two-hour block for laying panels and a short speed restriction of 30 KM per hour for two to three hours post-installation.

Key points

- **Overview:** Despite safety advancements, Indian Railways has experienced fluctuating collision rates, recording six incidents in 2022-23 and four in 2023-24, highlighting the ongoing need to prevent such incidents.
- **Reasons behind Railway Accidents:** *Derailments* - Many train disasters in India are caused by derailments, with a government safety report from 2020 finding they were responsible for 70% of train crashes in the country.

  Human Errors - The railway staff, who are responsible for operating, maintaining, and managing the trains and tracks, are prone to human errors due to fatigue, negligence, corruption, or disregard for safety rules and procedures.

Signalling Failures - The signalling system, which controls the movement and direction of trains on the tracks, can fail due to technical glitches, power outages, or human errors.

Unmanned level crossings (UMLCs) - UMLCs are crossings where railway tracks intersect without barriers or signals, all unmanned ones on broad gauge routes have been removed, yet accidents still pose risks at manned level crossings (MLCs).

Infrastructure Defects - The railway infrastructure, which includes tracks, bridges, overhead wires, and rolling stock, is often defective due to poor maintenance, ageing, vandalism, sabotage, or natural disasters.

Safety and Information Flow Challenge - Since the inception of railways in India, periodic field inspections by authorities at various levels have been crucial for ensuring compliance with established procedures and standards.

- **Status of Kavach system:** Kavach aims to secure India's extensive railway network of over 68,000 km, but only 1,500 km are currently equipped with the system since its initial rollout. It aims to cover 6,000 km by 2025, including key routes like Delhi-Mumbai and Delhi-Howrah. Upgrades are planned to make the system 4G/5G compatible. Installation is ongoing, with components like optical Fiber cables, towers, and station equipment being deployed.
- **Features of the new system:** It ensures a smoother road surface between the tracks and one meter on both sides, providing better riding comfort for road users. The safety of level crossings is significantly enhanced by the elimination of check rails, which removes risks such as check rail breakage and the need for frequent gap adjustments. Maintenance requirements are reduced as the absence of sand and paver blocks prevent cake ballast formation, which extends the service life of critical track components such as Elastic Rail Clips (ERCs), GR pads, and liners.

Q. Consider the following communication technologies:

1. Closed-circuit Television

2. Radio Frequency Identification

3. Wireless Local Area Network

Which of the above are considered Short-Range devices/technologies?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

3. India’s urban infrastructure financing, needs and reality

Context: India’s urban population will increase from 400 million in the last decade to 800 million over the next three decades. While this offers an opportunity to transform India’s urban landscape, there are significant financial challenges that must be overcome to get there. A recent World Bank report estimates that India will require about ₹70 lakh crore by 2036 to meet its urban infrastructure needs. Current government investment (2018 figures) in urban infrastructure stands at around ₹1.3 lakh crore annually.

This is just a little over one-fourth of the required ₹4.6 lakh crore per year. Broadly, about 50% is estimated for basic urban services, with the other half for urban transport.

Urban Planning and Development in India

- **About:** Proper urban planning and development is key to achieving India's dream of being a Vikshit Bharat by 2047 due to the following reasons-
  - *Urban centres as propellents of economic growth* - Urban cities in India occupy just 3% of the land but contribute to ~60% of the GDP. Urban centres are economic hubs which contribute to the rapid economic development of the country. For Ex– Bangalore, Hyderabad, Gurugram- IT hubs, Mumbai-Financial Hub.
  - *Rapid growth in Urban population* - India is the second-largest urban system in the world, with almost 11% of the total global urban population living in Indian cities. India's urban population is expected to cross 50% of the total population within the next two decades, necessitating proper planning to ensure ease of living.
  - *Planning for the large number of urban poor* - According to the Ministry of Finance, one in-three poor people lives in urban areas. This figure was about one-in-eight in the early 1950s. Hence, proper urban planning is necessary to stop the growth of unabated slums and shanties. For ex- Slums of Dharavi near the financial hub of BKC in Mumbai.
  - *Improving the quality of urban life* - Proper Urban planning ensures access to basic services such as water, sanitation, and healthcare. It also creates livable and walkable neighbourhoods that are safer and more pleasant to live in.
  - *Enhancement of environmental sustainability* - Urban planning ensures that cities are designed in a way to minimize their impact on the environment through measures such as green spaces, energy-efficient buildings, and sustainable transportation options.
- **Challenges:** *Uneven urbanisation* - There is uneven distribution of urban centres and lack of uniformity of pace of urbanisation across the country. States such as Bihar, Odisha, Assam, and Uttar Pradesh lag in urbanisation rates while states like Karnataka, Tamil Nadu, Maharashtra are leading. This makes it difficult to implement a uniform policy for urban planning and development.

  Statutory Towns Growing Without 'Master Plans'- According to the NITI Aayog Report ~50% of India's statutory towns are expanding without any master plan to guide their growth and infrastructure.

  Lack of Capability of Local Governments - The local government lacks funds, functions and functionality for planned urban infrastructural development and service delivery. For Ex- reliance on grants from Centre and State for their functioning.

  Sub Optimal Utilisation of Urban Land - Ministry of Housing and Urban Affairs (MoHUA) has noted the paradox of congested land parcels of high population densities co-existing with vast parcels of under-utilized lands. Multiple public sector organizations/agencies (ports, railways, ULBs, etc.) own land under their jurisdictions. This hinders holistic urban planning and development.

  Magnitude of Population Living in Slums - According to Census 2011, 17.3% of the total urban population is living in slums. Lack of affordable housing is contributing to creation and expansion of slums.

  Increasing Risk of Water Scarcity in Cities - Indian cities dominate current and future lists of global cities with the highest overall water risk (The Worldwide Fund for Nature India 2020). For Ex- the looming fear of 'Day Zero' in Bangalore.

Lack of Planning for Disaster Mitigation - The Parliamentary Standing Committee on Home Affairs in its report has observed that the encroachment of lakes and riverbeds had played a major role in urban flooding in Chennai.

- **Initiatives Related to Urban Governance:** *Ministry of Housing and Urban Affairs (MoHUA)* - Formulates national policies and oversees central government schemes related to urban development.
  State Departments of Urban Development - Implement central government policies and enact state-specific urban development regulations.
  Municipal Corporations/Municipalities - They are responsible for local-level planning, development control, and service delivery within their jurisdictions.
  Urban Development Authorities (UDAs) - Special agencies established for the development of specific urban areas or projects.
- **Way forward:** NITI Aayog has provided recommendations in the 'Reforms in Urban Planning in India 'Report to improve the urban planning and development in India.
  Programmatic intervention for planning of healthy cities - NITI Aayog has recommended a central sector scheme '500 Healthy Cities Programme', for a period of 5 years to ensure holistic socio-economic development of Indian cities.
  Involvement of Citizens in Planning - NITI Aayog has recommended a 'Citizen Outreach Campaign' for making the process of urban planning more inclusive and accessible.
  Enhanced Role of Private Sector - The role of private sector must be enhanced in urban planning and development, like the empanelment of private sector consultancies.

Q. With reference to the Indian economy after the 1991 economic liberalization, consider the following statements:

1. Worker productivity (Rs. per worker at 2004-05 prices) increased in urban areas while it decreased in rural areas.

2. The percentage share of rural areas in the workforce steadily increased.

3. In rural areas, the growth in non-farm economy increased.

4. The growth rate in rural employment decreased.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 3 and 4 only

(c) 3 only

(d) 1, 2 and 4 only

GS 3: ECONOMY, ECOLOGY, SCIENCE & TECHNOLOGY, DEFENCE, SECURITY AND DISASTER MANAGEMENT

4. Satellite space junk bad for environment

Context: More than 10,000 active satellites are in orbit around the planet today. This number is estimated to shoot up to more than 100,000 by 2030's and possibly half a million in the in the decades to follow.

Most satellites, at the end of their lifecycle, fall to a fiery death through earth's atmosphere. While disintegrating in the upper atmosphere, they leave all kinds of pollutants. With the increase of number of these satellites, the level of pollution also goes up. Scientists are particularly concerned about the impact of this pollution on the ozone layer in Earth's stratosphere. This layer absorbs up to 99% of the ultraviolet rays from the sun, which would otherwise harm living organisms on Earth's surface, but the pollutants from the burnt-up space junk are harming it.

Key points

- **Space Debris:** It is also known as space junk, which is any piece of machinery or debris left in space by humans. It can refer to large objects such as dead satellites and smaller items, such as debris or paint flecks that have fallen off a rocket. Many space debris consist of rocket-launching material and decommissioned satellites. Most of the debris is in the Low Earth Orbit (LEO), within 2,000 kilometres of the Earth's surface, though some are in the Geostationary Orbit (35,786 kilometres above the Equator).
  Current Status - As per ESA's Space Environment Report over 30,000 pieces of space debris have been recorded and are being tracked on a regular basis by space surveillance networks. There were approximately 6,718 active satellites orbiting the Earth in 2022, an increase of nearly 2,000 satellites in just one year.
- **Causes for Space Debris:** Space debris has become an increasing problem in Earth's orbit due to increased human activities in space. The following are the causes of the rise in space debris:
  Launching objects into Space - The space debris issue has intensified due to the rapid increase in the number of satellites launched into space.
  Abandoned satellites - Some satellites are decommissioned and become defunct after their functional operations, and they end up as part of the growing collection of space junk.
  Anti-satellite tests - Several countries, such as the USA, China, and India, have conducted anti-satellite tests, using missiles to destroy their own satellites. This has led to deliberate space debris creation.
  Increasing expansion - The space industry is booming, with both public and private sectors investing heavily in space exploration.
  Long-lasting mission debris - Space debris caused by satellite missions in LEO might return to the atmosphere of the Earth. However, debris at higher altitudes, like geostationary orbits, can orbit the Earth for a longer period.
  Fragmentation of space debris - One of the significant factors responsible for the rise in space debris is the fragmentation of space debris due to collision, explosion and degradation.
- **Space pollution:** The accumulation of space debris in Earth's orbit contributes to long-term orbital pollution, which not only complicates space activities but also raises environmental concerns for future generations of space explorers.
- **Initiatives for Space Debris Removal by India:** Space debris is a critical issue for the safety of operating satellites and the long-term sustainability of space activities. Some initiatives to deal with space debris include
  ISRO System for Safe & Sustainable Operations Management (IS4OM) - Launched in 2022, it is ISRO's holistic approach to ensuring the safety of space assets and the continued use of outer space for national development. It monitors objects that pose collision threats.

Project Netra (Network for Space Object Tracking and Analysis) - It is an early warning system launched by ISRO in space to detect debris and other threats to Indian satellites. It can spot, track, and catalogue objects as small as 10 cm, up to a range of 3,400 km.
Collision Avoidance Manoeuvres - To avoid collisions with other space objects, ISRO performed 21 collision avoidance manoeuvres of Indian operational space assets in 2022.
ISRO SSA (Space Situational Awareness) Control Centre - It was established in 2020 to function as a hub of all space situational awareness activities within India, to ensure safe and sustainable space operations.

- **Way forward:** Tackling the issue of space debris removal is a complex and multifaceted challenge that requires a combination of technological, regulatory, and international cooperation measures.
Enhanced awareness - To effectively remove space debris, there is a need to upgrade observation technology and enhance the accuracy of tracking models, which will enable more precise monitoring and identification of space debris and objects in orbit.
Debris mitigation and active removal - It involves collecting and moving defunct or non-manoeuvrable debris to lower orbits, where it can naturally deorbit more quickly. Various technologies, such as harpoons, magnets, lasers, and slingshots, are being explored as potential means to capture space debris.

GS 3: ECONOMY, ECOLOGY, SCIENCE & TECHNOLOGY, DEFENCE, SECURITY AND DISASTER MANAGEMENT

5. Treaty to tackle plastic pollution

Context: More than 170 countries will converge in Busan, Republic of Korea, to negotiate a new legally binding global treaty to end plastic pollution, including marine pollution. This will be the fifth round of talks between nations since the 2022, when the UN environmental Assembly (UNEA) agreed to develop such a treaty by the end of 2024. The annual global production of plastic doubled from 234 million tonnes in 2000 to 460 million tonnes in 2019, it is again expected to grow up to 700 million tonnes by 2040. According to some reports about 400 million tonnes of plastic waste might be generated by the end of this year, a jump by 62% between 2024-50.

Key points

- **Global Plastics Treaty and its objectives:** *Description* - The Global Plastics Treaty is an ambitious initiative involving over 175 UN member nations aimed at eliminating plastics.
Objective – By the end of 2024, the aim is to create a legal document setting out deadlines for countries to decrease plastic production, cut out unnecessary uses, prohibit specific chemicals, and set recycling goals.
- **United Nations Environment Assembly (UNEA):** *About* - UNEA is the world's highest-level decision-making body on the environment. UNEA enjoys the universal membership of all 193 UN Member States and the full involvement of major groups and stakeholders. It gathers ministers of environment in Nairobi, Kenya every 2 years.
Creation - UNEA was created in 2012, as an outcome of the UN Conference on Sustainable Development (Rio+20), held in Brazil.
Function - UNEA sets the global environmental agenda, provides overarching policy guidance, and defines policy responses to address emerging environmental challenges.
- **Reasons behind the delay of treaty:** *Economic Challenges* - Economic challenges are slowing down the agreement process. Countries like Saudi Arabia, the US, Russia, India, and Iran are reluctant to

set strict deadlines to stop plastic production whereas some African countries, backed by several European nations, propose a target year of around 2040 to ensure a gradual reduction in plastic use.

Vote vs. Consensus - There is disagreement on whether contentious issues should be resolved by vote or consensus. Consensus implies that every country has a veto and in this case adoption of treaty will become very difficult.

- **India's stance:** India is not comfortable with binding targets and insists that the treaty should address factors like the availability, accessibility, and affordability of alternatives, considering cost implications. India's position reflects the idea of "common but differentiated responsibility,". This is also observed in Indias climate change negotiations where India demanded that wealthier nations assist developing countries and adopt tougher targets themselves.
- **India to tackle plastic pollution:** In 2022, India implemented the Plastic Waste Management Amendment Rules (2021), which banned 19 categories of "single use" plastics.

  Shortcomings - This ban does not cover plastic bottles under 200 ml or multi-layered packaging boxes like milk cartons. Enforcement of the ban on single-use plastic items varies across the country, with many outlets still selling these products.
- **Conclusion:** Shifting away from plastics needs big investments in alternative products and making them cheap. Just signing treaties won't tackle plastic pollution well without these investments and practical goals.