

**GEOGRAPHY****T+1 Settlement System for Shares: SEBI**

Various provinces of Argentina are building mining logistics nodes and access roads, lowering tax rates and rationalizing rules for the sector to attract investment in the Lithium metal. Rising global lithium demand and surging prices have drawn increased interest in the so-called 'lithium triangle' that spans parts of Argentina, Bolivia and Chile.

Lithium has become the new 'white gold' as the demand for high performing rechargeable batteries is rising.

**Key Points****Properties of Lithium:**

- It is a chemical element with the symbol Li.
  - It is a soft, silvery-white metal.
  - Under standard conditions, it is the lightest metal and the lightest solid element.
  - It is highly reactive and flammable, and must be stored in mineral oil.
  - It is an alkali metal and a rare metal.
1. The alkali metals consist of the chemical elements lithium, sodium, potassium, rubidium, caesium, and francium. Together with hydrogen they constitute group 1, which lies in the s-block of the periodic table.
  2. Rare Metals (RM) include Niobium (Nb), Tantalum (Ta), Lithium (Li), Beryllium (Be), Cesium (Cs) etc. and Rare Earths (RE) include Lanthanum (La) to Lutetium (Lu) besides Scandium (Sc) and Yttrium (Y). These metals are strategic in nature with wide application in the nuclear and other high tech industries such as electronics, telecommunication, information technology, space, defense etc.

**Uses:**

- Lithium metal is used to make useful alloys. For example, with lead to make 'white metal' bearings for motor engines, with aluminium to make aircraft parts, and with magnesium to make armour plates.
- In Thermonuclear reactions.
- To make electrochemical cells. Lithium is an important component in Electric Vehicles, Laptops etc.

**Countries with Largest Reserves:**

- Chile > Australia > Argentina

**Lithium in India:**

- Researchers at the Atomic Minerals Directorate (under India's Atomic Energy Commission) have estimated lithium reserves of 14,100 tonnes in a small patch of land surveyed in Southern Karnataka's Mandya district recently. Also to be India's first ever Lithium deposit site found.

**Other Potential Sites in India:**

- The major mica belts in Rajasthan, Bihar, and Andhra Pradesh.
- Pegmatite (igneous rocks) belts in Odisha and Chhattisgarh.
- Brines of Sambhar and Pachpadra in Rajasthan, and Rann of Kachchh in Gujarat.

**Related Government Initiative:**

- India, through a newly state-owned company Khanij Bidesh India Ltd, had signed an agreement with an Argentinian firm to jointly prospect lithium in Argentina. Khanij Bidesh India Ltd has a specific mandate to acquire strategic mineral assets such as lithium and cobalt abroad.

**Lithium Production in Stars:**

- Scientists from the Indian Institute of Astrophysics (IIA) have provided evidence for the first time that Lithium (Li) production is common among low mass Sun-like stars during their Helium (He) core burning phase.

**2.Connect Karo 2021**

Recently, the Union Home Minister addressed the 'Connect Karo 2021' - Towards Equitable, Sustainable Indian Cities' Event.

**Key Points****About:**

- It is part of a global series of events that World Resources Institute (WRI) India organizes and hosts, to bring together Indian and global leaders, and other stakeholders committed towards

designing inclusive, sustainable and climate forward Indian cities. WRI India is an independent charity, legally registered as the India Resources Trust.

- Connect Karo sees presenters from various fields — air pollution, electric mobility, urban planning, urban water resilience, climate mitigation, and public transit among others — sharing their insights and research findings.

#### **Importance of Cities:**

- **Contribution to GDP:**

1. By 2030, almost 70% of the national Gross Domestic Product (GDP) will come from cities as rapid urbanisation facilitates efficiencies of agglomerations.
2. The best-performing cities globally contribute five times more to national GDP than comparable Indian cities.

- **Impact of Covid-19:** By 2030, the urban population in India will almost double to 630 million and to facilitate this level of growth it is needed to upgrade the urban infrastructure considerably and the impact of Covid-19 on our cities has made this even more significant.

#### **Help in Fighting Climate Change:**

- As the recent Intergovernmental Panel on Climate Change (IPCC) report suggests, cities are the major contributors as well as worst affected from climate change, hence, cities will be the battlegrounds for the fight against climate change. Even Sustainable Development Goals (SDG) 11 includes investment in public transport, creating green public spaces, and improving urban planning and management in participatory and inclusive ways.

#### **Related Governments Initiatives:**

- Pradhan Mantri Awas Yojana (PMAY): Launched in 2015, it intends to provide housing for all in urban areas by year 2022.
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT Mission): Launched in 2015, it aims to provide basic civic amenities for all.
- Climate Smart Cities Assessment Framework: It is a step to adopt, implement, and disseminate the best practices adopted by our cities and further set standards in comparison to the international efforts towards the green, sustainable, and resilient urban habitats.
- Urban Transport scheme: Under the scheme, public bus transport services will be augmented by deploying public-private partnerships to finance over 20,000 buses.
- Jal Jeevan Mission (Urban): It will provide universal coverage of water supply to all households through functional taps in all statutory towns.
- Swachh Bharat Mission (Urban): It was launched on 2nd October 2014 which aims at making urban India free from open defecation and achieving 100% scientific management of municipal solid waste in the country.

### **INDIAN HERITAGE**

#### **LCA-Mk2 and AMCA**

Every year, 14th September is celebrated as Hindi Diwas in India. One of the reasons behind celebrating this day is to prevent the increasing trend of the English language in the nation and the neglect of Hindi.

#### **Key Points**

##### **History of the Hindi Diwas:**

- Hindi, written in the Devanagari script, was adopted as the official language of the Republic of India on 14th September, 1949. Kaka Kalekar, Maithili Sharan Gupta, Hazari Prasad Dwivedi, Seth Govindadas made important contributions to make Hindi the official language.
- The first Hindi Day was celebrated in 1953.
- Besides Hindi, English is the other official language (Article 343 of the Constitution).
- Hindi is also an eighth schedule language.
- Article 351 pertains to 'Directive for development of the Hindi language'.
- Hindi is not a classical language.

##### **World Hindi Day:**

- It is observed on 10th January.
- Commemorates the anniversary of the first World Hindi Conference held in Nagpur on 10th January, 1975, which saw 122 delegates from 30 countries participating in it.
- First celebrated in 2006 by former Indian Prime Minister Dr. Manmohan Singh with an aim to promote Hindi language across the world.

- The World Hindi Secretariat building was inaugurated in Mauritius in 2018.

**About the Hindi Language:**

- **Origin:**
  1. Hindi got its name from the Persian word Hind, meaning 'land of the Indus River'. Turkish invaders in the early 11th century named the language of the region Hindi, 'language of the land of the Indus River'.
  2. The modern Devanagari script came into existence in the 11th century.
- **Spoken in Countries outside India:**
  1. Hindi is the fifth most spoken language among the total languages spoken in the world. It is spoken in Pakistan, Nepal, Bangladesh, USA, UK, Germany, New Zealand, United Arab Emirates, Uganda, Guyana, Suriname, Trinidad, Mauritius, and South Africa.

**Related Government Initiatives:**

- The Central Hindi Directorate was established in 1960 under the Ministry of Education with an aim to impart knowledge of Hindi through correspondence to the people of non-Hindi speaking Indian states, Indians settled abroad and foreign nationals desirous of learning Hindi.
- Indian Council for Cultural Relations (ICCR) has established 'Hindi Chairs' in various foreign universities/institutions abroad.
- LILA-Rajbhasha (Learn Indian Languages through Artificial Intelligence) is a multimedia based intelligent self-tutoring application for learning Hindi.
- E-Saral Hindi Vakya Kosh and E-MahashabdKosh Mobile App, both initiatives of the Department of Official Language, aim to harness information technology for the growth of Hindi.
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**INTERNATIONAL RELATION**

**Upcoming Quad Meeting**

Recently, the US announced that the first in-person meeting of the Quad countries is going to be held in New York, US. The heads of all the four countries (India, Japan, Australia, and the US) are going to attend the meeting. Reacting to the upcoming summit, China criticized the Quad and said the formation of "exclusive cliques (circles)" targeting other countries runs counter to the trend of the times and is "doomed to fail".

**Key Points**

**Formation of the Quad:**

- Following the Indian Ocean Tsunami (2004), India, Japan, Australia, and the US created an informal alliance to collaborate on disaster relief efforts.
- In 2007, then PM of Japan, Shinzo Abe, formalised the alliance, as the Quadrilateral Security Dialogue or the Quad.
- The Quad was supposed to establish an Asian Arc of Democracy but was hampered by a lack of cohesion amongst its members and accusations that the group was nothing more than an anti-China bloc.
- In 2017, faced again with the rising threat of China, the four countries revived the Quad, broadening its objectives and creating a mechanism that aimed to slowly establish a rules-based international order.
- In 2020, the trilateral India-US-Japan Malabar naval exercises expanded to include Australia, marking the first official grouping of the Quad since its resurgence in 2017. Further, it was the first joint military exercises among the four countries in over a decade.
- In March 2021, the Quad leaders met virtually and later released a joint statement titled 'The Spirit of the Quad,' which outlined the group's approach and objectives.

**Objectives of the Quad:**

- According to the 'Spirit of the Quad', the group's primary objectives include maritime security, combating the Covid-19 crisis, especially vis-à-vis vaccine diplomacy, addressing the risks of climate change, creating an ecosystem for investment in the region and boosting technological innovation.
- However, despite the Quad's seeming commitment to a broad range of issues, its main focus area is still considered to be countering China.
- Quad members have also indicated a willingness to expand the partnership through a so-called Quad Plus that would include South Korea, New Zealand, and Vietnam amongst others.

**Quad and its Linkage with China:**

- Each of the Quad members are threatened by China's actions in the South China Sea and its attempts to extend its sphere of influence through initiatives such as the One Belt One Road Project.
- 2. The US has long been concerned about the global competition with China and have maintained that China aims to subvert the international rules-based order.
- 3. Japan and Australia are likewise both concerned about China's expanding presence in the South and East China Seas.
- 4. India has its own long pending border issues with China.
- On the other hand, China sees the existence of the Quad as part of a larger strategy to encircle China and has pressured countries like Bangladesh to avoid cooperating with the group. The Chinese foreign ministry accused the group of openly inciting discord among regional powers in Asia.

**Issues Related to Quad:**

- **Undefined Vision:** Despite the potential for cooperation, the Quad remains a mechanism without a defined strategic mission.
- 1. The Quad is not structured like a typical multilateral organisation and lacks a secretariat and any permanent decision-making body.
- 2. Additionally, unlike NATO, the Quad does not include provisions for collective defence, instead choosing to conduct joint military exercises as a show of unity and diplomatic cohesion.
- **Maritime Grouping:** The entire focus on the Indo-Pacific makes the Quad a maritime, rather than a land-based grouping, raising questions whether the cooperation extends to the Asia-Pacific and Eurasian regions.
- **India's Aversion of Alliance System:** The fact that India is the only member that is averse to a treaty alliance system, has slowed down the progress of building a stronger Quadrilateral engagement.

**Way Forward**

- **Need For Clear Vision:** The Quad nations need to better explain the Indo-Pacific Vision in an overarching framework with the objective of advancing everyone's economic and security interests. This will reassure the littoral States that the Quad will be a factor for regional benefit, and a far cry from Chinese allegations that it is some sort of a military alliance. The forthcoming Ministerial meetings can be an opportunity to define the idea and chart a future path.
- **Expanding Quad:** India has many other partners in the Indo-Pacific, therefore India should pitch for countries like Indonesia, Singapore to be invited to join in the future. India should develop a comprehensive vision on the Indo-Pacific which would ideate on the current and future maritime challenges, consolidate its military and non-military tools, engage its strategic partners.

**AGRICULTURE**

**Digital Agriculture**

Recently, the Ministry of Agriculture and Farmers Welfare signed 5 Memorandums of Understanding (MOUs) with private companies for taking forward Digital Agriculture. These pilot projects are part of the Digital Agriculture Mission and will draw on the National Farmers Database which already includes 5.5 crore farmers identified using existing national schemes.

**Key points**

**Digital Agriculture:**

- **About:** Digital Agriculture is "ICT (Information and Communication Technologies) and data ecosystems to support the development and delivery of timely, targeted information and services to make farming profitable and sustainable while delivering safe nutritious and affordable food for all."
- **Examples:**
- 1. Agricultural biotechnology is a range of tools, including traditional breeding techniques, that alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses.

2. Precision agriculture (PA) is an approach where inputs are utilised in precise amounts to get increased average yields, compared to traditional cultivation techniques such as agroforestry, intercropping, crop rotation, etc. It is based on using ICTs.
3. Digital and wireless technologies for data measurement, Weather monitoring, Robotics/drone technology, etc.

• **Benefits:**

1. Increases agriculture productivity.
2. Prevents soil degradation.
3. Reduces chemical application in crop production.
4. Efficient use of water resources.
5. Disseminates modern farm practices to improve the quality, quantity and reduced cost of production.
6. Changes the socio-economic status of farmers.

**Challenges:**

- **High Capital Costs:** It discourages the farmers to adopt digital methods of farming.
- **Small Land Holdings:** Indian farms are very small in size and 1-2 acres farm plots are the most common. Also, agricultural land leasing under various arrangements is widely prevalent in India.
- **Renting and Sharing Practices:** Due to both limited financial resources and small farm plots, renting and sharing platforms rather than outright purchase for equipment and machinery like tractors, harvesters etc.
- **Illiteracy in Rural Area:** The lack of basic computer literacy hinders the fast development of e-Agriculture.

**Related Government Initiatives:**

- **AgriStack:** The Ministry of Agriculture and Farmers Welfare has planned creating 'AgriStack' - a collection of technology-based interventions in agriculture. It will create a unified platform for farmers to provide them end to end services across the agriculture food value chain.
- **Digital Agriculture Mission:** This has been initiated for 2021 -2025 by the government for projects based on new technologies like artificial intelligence, block chain, remote sensing and GIS technology, use of drones and robots etc.
- **Unified Farmer Service Platform (UFSP):** UFSP is a combination of Core Infrastructure, Data, Applications and Tools that enable seamless interoperability of various public and private IT systems in the agriculture ecosystem across the country. UFSP is envisaged to play the following role:
  1. Act as a central agency in the agri ecosystem (like UPI in the e Payments)
  2. Enables Registration of the Service Providers (public and private) and the Farmer Services.
  3. Enforces various rules and validations required during the service delivery process.
  4. Acts as a Repository of all the applicable standards, API's (Application Programming Interface) and formats.
  5. Act as a medium of data exchange amongst various schemes and services to enable comprehensive delivery of services to the farmer.
- **National e-Governance Plan in Agriculture (NeGP-A):** A Centrally Sponsored Scheme, it was initially launched in 2010-11 in 7 pilot States, which aims to achieve rapid development in India through use of ICT for timely access to agriculture related information to the farmers. In 2014-15, the scheme was further extended for all the remaining States and 2 UTs.
- **Other Digital Initiatives:** Kisan Call Centres, Kisan Suvidha App, Agri Market App, Soil Health Card (SHC) Portal, etc.

**Way Forward**

- The use of technology has defined the 21st century. As the world moves toward quantum computing, AI, big data, and other new technologies, India has a tremendous opportunity to reap the advantage of being an IT giant and revolutionize the farming sector. While the green revolution led to an increase in agricultural production, the IT revolution in Indian farming must be the next big step.
- There is a need to build a robust digital infrastructure in the country consisting of satellite imaging, soil health information, land record, cropping pattern and frequency, market data, and others.

- Data efficiency can be increased through - Digital Elevation Model (DEM), Digital Topography, Land Use & Land Cover, Soil Map, etc.

**IMPORTANT FACTS FOR PRELIM**

**Hindi Diwas**

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**DAILY ANSWER WRITING PRACTICE**

**Qns. The decision to induct girls for permanent commission through the National Defence Academy is a step in the right direction which was long overdue in the process of achieving gender parity in armed forces. Elaborate. (250 words)**

**Ans:**

**Introduction**

The Centre on September 8 told the Supreme Court that it had taken a decision to allow women entry into the National Defence Academy (NDA), so far, a male bastion for recruitment into the Armed

Forces. When this decision comes through formally on paper, women can prepare for a career in the Armed Forces immediately after Class 12.

Recently, PM announcement to allow girls for admission in Sainik School is a welcome move that will prepare girls for equal roles & life in the military.

### **Body**

#### **Background**

- The apex court had ordered on March 17 last year that women officers be given the same option of converting their short service commission to permanent commission as male officers.
- Several untenable reasons have been touted for years to deny women parity in the forces. These range from protecting women's honour and lack of gender sensitivity among male soldiers to needing to lower standards for women officers.
- All of this was called as hogwash by the Supreme Court. Women in the forces have repeatedly proved themselves to be equally capable as their male colleagues when given same opportunities.
- Plus, a woman officer or cadet is fully aware of the risks involved in her profession. Only a patriarchal mindset feels the need to shield her.
- Therefore, the Centre and the services' decision is a welcome change in attitude towards women in the armed forces who have long been at the receiving end of patriarchal mores.

#### **Achieving gender parity in armed forces:Timeline**

- The first batch of women officers was given commission in the Navy in 1992. It has taken close to 30 years for women to be given direct permanent commission.
  - The Army, Air Force and Navy began inducting women as short-service commission (SSC) officers in 1992.
  - This was the first time when women were allowed to join the military outside the medical stream.
  - They were commissioned for a period of five years in certain chosen streams such as Army Education Corps, Corps of Signals, Intelligence Corps, and Corps of Engineers.
1. Recruits under the Women Special Entry Scheme (WSES) had a shorter pre-commission training period than their male counterparts who were commissioned under the Short Service Commission (SSC) scheme.
  2. In 2006, the WSES scheme was replaced with the SSC scheme, which was extended to women officers. They were commissioned for a period of 10 years, extendable up to 14 years.
  3. Serving WSES officers were given the option to move to the new SSC scheme or to continue under the erstwhile WSES.
  4. They were to be, however, restricted to roles in streams specified earlier, which excluded combat arms such as infantry and armoured corps.
- One of the turning points for women in the military came in 2015 when Indian Air Force (IAF) decided to induct them into the fighter stream.
  - In Secretary, Ministry of Defence vs Babita Puniya & Ors: the Court pointed out the "significant role" played by women since their induction in the army in 1992. So extending permanent positions to women SSC officers is a step forward in bringing equality of opportunity in the army.
  - In early 2021, the Indian Navy deployed four women officers on warships after a gap of almost 25 years.
  - India's only aircraft carrier INS Vikramaditya and fleet tanker INS Shakti are the warships that have been assigned their first women crews since the late 1990s.
  - In May 2021, the Army inducted the first batch of women into the Corps of Military Police, the first time that women joined the military in the non-officer cadre.
  - In the recent judgement, SC allowed women to sit for National Defence Academy (NDA) exam as the current policy is based on "gender discrimination".

#### **Conclusion**

SC upheld the right to equality in the Constitution for the spirit of the order is the principle of non-discrimination. Gender cannot serve as the basis for inequitable and unequal treatment in any sphere, including in defence forces. There is a bigger need in shift to take place in the culture, norms, and values of the rank and file of the Army, which will be the responsibility of the senior military and political leadership.

**DAILY QUIZ**

Q1. With reference to International Fund for Agricultural Development (IFAD), consider the following statements:

1. It is a specialized United Nations agency.
2. It is the only multilateral development organization that focuses solely on rural economies and food security.
3. It has more than 130 member nations.

Which of the given above statements is/are correct?

- a. 1 and 2 only
- b. 1 only
- c. 2 and 3 only
- d. 1, 2 and 3**

Q2. Consider the following statements:

1. International Union for Conservation of Nature and Natural Resources (IUCN) is an organ of the United Nations.
2. IUCN runs thousands of field projects around the world to better manage natural environments.

Which of the given above statements is/are correct?

- a. 1 only
- b. 2 only**
- c. Both 1 and 2
- d. Neither 1 nor 2

Q3. Consider the following statements regarding the Goods and Services Tax (GST) Appellate Tribunal:

1. It is the forum of second appeal in GST laws.
2. It is deemed Civil Court for trying a case.

Which of the given above statements is/are correct?

- a. 1 only
- b. 2 only
- c. Both 1 and 2**
- d. Neither 1 nor 2

Q4. Consider the following statements:

As per the Wildlife protection Act, 1972,

1. "vermin" means any wild animal specified in Schedule IV of the act.
2. persons having ownership certificate in respect of Schedule I and Part II of Schedule II animals can sell or gift such articles.

Which of the given above statements is/are correct?

- a. 1 only
- b. 2 only**
- c. Both 1 and 2
- d. Neither 1 nor 2

Q5. The Global Forest Goals Report 2021 is released by which of the following?

- a. Food and Agriculture Organization
- b. World Resources Institute
- c. United Nations Environment Programme
- d. United Nations Department of Economic and Social Affairs**