**SOCIAL ISSUE**

## NEAT Initiative

Recently, the Ministry of Education has announced a new National Educational Alliance for Technology (NEAT 3.0) to use technology for better learning outcomes in Higher Education.

**Key Points**

- **Model of NEAT Scheme:** It is based on a Public-Private Partnership model between the Government and the Education Technology (Ed-Tech) companies of India.
- **Objective:** The objectives of NEAT are to bring the best technological solutions in education pedagogy on a single platform for the convenience of Economically and Socially weaker sections of society.
- **Target Areas**: Technology solutions using Artificial Intelligence for customized learning or e-content in niche areas having highly employable skills are being identified for showcasing on the portal.
- **Modus Operandi:** Under this, the government plans to distribute free coupons for an array of courses offered by ed-tech companies.
- **Implementing Agency**: All India Council for Technical Education (AICTE).

**All India Council for Technical Education (AICTE)**

- It was set up in November 1945 as a national-level apex advisory body.
- Its purpose was to conduct a survey on the facilities available for technical education and to promote development in the country in a coordinated and integrated manner.
- According to the National Policy of Education (1986), AICTE is vested with:
    1. Statutory authority for planning, formulation, and maintenance of norms & standards,
    2. Quality assurance through accreditation,
    3. Funding in priority areas, monitoring, and evaluation,
    4. Maintaining parity of certification & awards,
    5. The management of technical education in the country.

**Ed-Tech**

- **About:** Edtech is the practice of introducing IT tools into the classroom to create a more engaging, inclusive and individualized learning experience.
- **Intended Benefits of Ed-Tech:** Technology holds promise and has incredible potential. It can help in:
    1. Enabling greater personalisation of education
    2. Enhancing educational productivity by improving rates of learning,
    3. Reducing costs of instructional material and service delivery at scale
    4. Better utilisation of teacher/instructor time.
- **National Education Policy 2020:** India's new National Education Policy (NEP) 2020 is responsive to the clarion call to integrate technology at every level of instruction.It envisions the establishment of an autonomous body, the National Education Technology Forum (NETF), to spearhead efforts towards providing a strategic thrust to the deployment and use of technology.
- **Scope:** The Indian ed-tech ecosystem has a lot of potential for innovation.With over 4,500 start-ups and a current valuation of around USD 700 million, the market is geared for exponential growth — estimates project an astounding market size of USD 30 billion in the next 10 years.
- **Associated Issues With Ed-Tech:**
1. **Lack of Technology Access:** Not everyone who can afford to go to school can afford to have phones, computers, or even a quality internet connection for attending classes online.
    ➤ According to National Sample Survey data for 2017-18, only 42% of urban and 15% of rural households had internet access.
    ➤ In this case, Ed-tech can increase the already existing digital divide.
2. **Contradiction with Right to Education:** Technology is not affordable to all, shifting towards online education completely is like taking away the Right to Education of those who cannot access the technology.

**Related Steps Taken:**

1. Digital Infrastructure for Knowledge Sharing (DIKSHA).
2. PM eVidya.
3. Swayam Prabha TV Channel
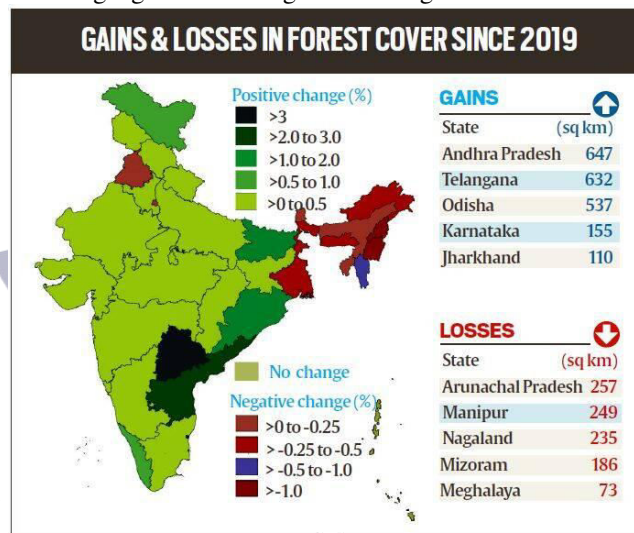4. SWAYAM portal

**Way Forward**

- **Comprehensive Ed-tech Policy**: A comprehensive Ed-tech policy architecture must focus on four key elements-
    1. Providing access to learning, especially to disadvantaged groups.

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2. Enabling processes of teaching, learning, and evaluation.
3. Facilitating teacher training and continuous professional development.
4. Improving governance systems including planning, management, and monitoring processes.

- **Technology is a Tool, Not a Panacea:** Public educational institutions play an exemplary role in social inclusion and relative equality.
   1. It is the place where people of all genders, classes, castes, and communities can meet without one group being forced to bow to others.
   2. Therefore, technology cannot substitute schools or replace teachers. Thus, it should not be "teachers versus technology" rather "teachers and technology".

- **Providing Infrastructure for Ed-Tech:** In the immediate term, there must be a mechanism to thoroughly map the ed-tech landscape, especially their scale, reach, and impact.
   1. The focus should be on access, equity, infrastructure, governance, and quality-related outcomes and challenges for teachers and students.
   2. Special attention must be paid to address the digital divide at two levels — access and skills to effectively use technology and leverage its benefits.

## ENVIRONMENT & BIODIVERSITY

### India State of Forest Report-2021

Recently, the Union Ministry of Environment, Forests and Climate Change (MoEFCC) released the India State of Forest Report-2021.In October, 2021 an amendment was proposed by MoEFCC to the Forest (Conservation) Act, 1980 to bring significant changes to forest governance in India.



GAINS & LOSSES IN FOREST COVER SINCE 2019

Positive change (%)
- >3
- >2.0 to 3.0
- >1.0 to 2.0
- >0.5 to 1.0
- >0 to 0.5

No change

Negative change (%)
- >0 to -0.25
- >-0.25 to -0.5
- >-0.5 to -1.0
- >-1.0

**GAINS** ⬆

| State | (sq km) |
|---|---|
| Andhra Pradesh | 647 |
| Telangana | 632 |
| Odisha | 537 |
| Karnataka | 155 |
| Jharkhand | 110 |

**LOSSES** ⬇

| State | (sq km) |
|---|---|
| Arunachal Pradesh | 257 |
| Manipur | 249 |
| Nagaland | 235 |
| Mizoram | 186 |
| Meghalaya | 73 |

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

- It is an assessment of India's forest and tree cover, published every two years by the Forest Survey of India.
- The first survey was published in 1987, and ISFR 2021 is the 17th.
- India is one of the few countries in the world that brings out such a survey every two years, and this is widely considered comprehensive and robust.
- The ISFR is used in planning and formulation of policies in forest management as well as forestry and agroforestry sectors.
- Three categories of forests are surveyed – very dense forests (canopy density over 70%), moderately dense forests (40-70%) and open forests (10-40%).
- Scrubs (canopy density less than 10%) are also surveyed but not categorised as forests.

**New Features of ISFR 2021:**

- It has for the first time assessed forest cover in tiger reserves, tiger corridors and the Gir forest which houses the Asiatic lion.
- The forest cover in tiger corridors has increased by 37.15 sq km (0.32%) between 2011-2021, but decreased by 22.6 sq km (0.04%) in tiger reserves.
- Forest cover has increased in 20 tiger reserves in these 10 years, and decreased in 32.
- Buxa (West Bengal), Anamalai (Tamil Nadu) and Indravati reserves (Chhattisgarh) have shown an increase in forest cover while the highest losses have been found in Kawal (Telangana), Bhadra (Karnataka) and the Sunderbans reserves (West Bengal).

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- Pakke Tiger Reserve in Arunachal Pradesh has the highest forest cover, at nearly 97%.

**Findings of the Report:**

- **Increment in Area:**
    1. The forest and tree cover in the country continues to increase with an additional cover of 1,540 square kilometres over the past two years.
    2. India's forest cover is now 7,13,789 square kilometres, 21.71% of the country's geographical area, an increase from 21.67% in 2019.
    3. Tree cover has increased by 721 sq km.Tree cover is defined as all tree patches of size less than one hectare occurring outside the recorded forest area. This covers trees in all formations including scattered trees.

- **Increase/Decrease in Forests:**
    1. The states that have shown the highest increase in forest cover are Telangana (3.07%), Andhra Pradesh (2.22%) and Odisha (1.04%).
    2. Five states in the Northeast – Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland have all shown loss in forest cover.

- **States with Highest Forest Area/Cover:**
    1. Area-wise: Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
    2. In terms of forest cover as percentage of total geographical area, the top five States are Mizoram, Arunachal Pradesh, Meghalaya, Manipur and Nagaland.The term 'forest area' denotes the legal status of the land as per the government records, whereas the term 'forest cover' indicates presence of trees over any land.

- **Mangroves:**Mangroves have shown an increase of 17 sq km. India's total mangrove cover is now 4,992 sq km.

- **Forest Prone to Fires:**35.46% of the forest cover is prone to forest fires. Out of this, 2.81% is extremely prone, 7.85% is very highly prone and 11.51% is highly prone.By 2030, 45-64% of forests in India will experience the effects of climate change and rising temperatures.Forests in all states (except Assam, Meghalaya, Tripura and Nagaland) will be highly vulnerable climate hot spots. Ladakh (forest cover 0.1-0.2%) is likely to be the most affected.

- **Total Carbon Stock:**
    1. The total carbon stock in the country's forests is estimated at 7,204 million tonnes, an increase of 79.4 million tonnes since 2019.
    2. Forest carbon stock is the amount of carbon that has been sequestered from the atmosphere and is now stored within the forest ecosystem, mainly within living biomass and soil, and to a lesser extent also in dead wood and litter.

- **Bamboo Forests:**Bamboo forests have grown from 13,882 million culms (stems) in 2019 to 53,336 million culms in 2021.

**Concerns:**

- **Decline in Natural Forests:**
    1. There is a 1,582 sq km decline in moderately dense forests, or "natural forests".
        - ✓ The decline, in conjunction with an increase of 2,621 sq km in open forest areas – shows a degradation of forests in the country.
        - ✓ Also, scrub area has increased by 5,320 sq km – indicating the complete degradation of forests in these areas.
        - ✓ Very dense forests have increased by 501 sq km.

- **Decline in Northeast Forest Cover:**
    1. The forest cover in the region has shown an overall decline of 1,020 sq km in forest cover.
    2. The Northeast states account for 7.98% of total geographical area but 23.75% of total forest cover.
    3. The decline in the Northeastern states has been attributed to a spate of natural calamities, particularly landslides and heavy rains, in the region as well as to anthropogenic activities such as shifting agriculture, pressure of developmental activities and felling of trees.

**Governments Initiatives**

**National Mission for a Green India:**
1. It is one of the eight Missions under the National Action Plan on Climate Change (NAPCC).
2. It was launched in February, 2014 with the objective to safeguard the biological resources of our nation and associated livelihoods against the peril of adverse climate change and to recognise the vital impact of forestry on ecological sustainability, biodiversity conservation and food-, water- and livelihood-security.

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**National Afforestation Programme (NAP):**
1. It has been implemented since 2000 for the afforestation of degraded forest lands.
2. It is being implemented by the MoEFCC.

**Compensatory Afforestation Fund Management and Planning Authority, (CAMPA Funds):**
1. Launched in 2016, 90% of the fund is to be given to the states while 10% is to be retained by the Centre.
2. The funds can be used for treatment of catchment areas, assisted natural generation, forest management, wildlife protection and management, relocation of villages from protected areas, managing human-wildlife conflicts, training and awareness generation, supply of wood saving devices and allied activities.

**National Action Programme to Combat Desertification:**
1. It was prepared in 2001 to address issues of increasing desertification and to take appropriate actions.
2. It is implemented by the Ministry of Environment, Forest and Climate Change.

**Forest Fire Prevention & Management Scheme (FFPM):**
1. It is the only centrally funded program specifically dedicated to assist the states in dealing with forest fires.

## INTERNATIONAL RELATION

### India- UK Free Trade Agreement

Recently, India and the UK have launched the formal Free Trade Agreement (FTA) negotiations, that both countries envisage concluding by the end of 2022.Until then, both countries are contemplating an interim free trade area, which will result in reducing tariffs on most of the items.

**Key Points**

**About the Agreement:**
- Both countries agreed to an early harvest scheme or a limited trade agreement to lower tariffs on a small set of goods apart from easing rules for select services.
- Further, they agreed to avoid "sensitive issues" and focus on areas where there is more complementarity. The agriculture and dairy sectors are considered sensitive sectors for India in trade talks.
- Also, a target of doubling the trade between India and the United Kingdom (UK) by 2030 has also been set.

**Free Trade Agreement (FTA):**
- It is a pact between two or more nations to reduce barriers to imports and exports among them.
- Under a free trade policy, goods and services can be bought and sold across international borders with little or no government tariffs, quotas, subsidies, or prohibitions to inhibit their exchange.
- The concept of free trade is the opposite of trade protectionism or economic isolationism.
- FTAs can be categorised as Preferential Trade Agreement, Comprehensive Economic Cooperation Agreement, Comprehensive Economic Partnership Agreement (CEPA).

**India-UK Trade Relations**

**About:**
- India and the UK are vibrant democracies, with a partnership built on our shared history and rich culture.
- The diverse Indian diaspora in the UK, which acts as a "Living Bridge", adds further dynamism to the relations between the two countries.
- The UK is one of the largest investors in India, among the G20 countries.

**Significance of FTA between India & the UK:**
- **Increasing Exports of Goods**: Trade deals with the UK could boost exports for large job-creating sectors such as textiles, leather goods, and footwear.India is also expected to register a quantum jump in the export of Marine Products through the recognition of 56 marine units of India.Mutual Recognition Agreements (MRAs) on Pharma could provide additional market access.
- **Clarity on Services Trade**: The FTA is expected to provide certainty, predictability and transparency and will create a more liberal, facilitative and competitive services regime.There is also great potential for increasing exports in service sectors like IT/ITES, Nursing, education, healthcare, including AYUSH and audio-visual services.Visa restrictions have been a key issue for India to boost services trade.
- **Exit from RCEP:** India opted out of the Regional Comprehensive Economic Partnership deal in November 2019.Therefore, there is a renewed focus on trade deals with the US, the European Union and the UK, which are key markets for Indian exporters and are keen to diversify their sourcing.

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- **Strategic Advantage:** The UK is a permanent member of the UN Security Council, and one of the strategic partners of India.Strengthening bonds with the trade would seek UKs support at global issues like standoff with China in the Ladakh sector of the Line of Actual Control (LAC) and claim for permanent seat at UNSC.

**Associated Challenges:**
- **Delays in Signing FTAs**: Interim agreements, which reduce tariffs on some products, can however in some cases lead to significant delays in achieving comprehensive FTAs.India, in 2004, signed an interim trade agreement with Thailand to reduce tariffs on 84 goods, but the agreement was never converted to a full-fledged FTA.
- **WTO Challenges:** Interim FTA do not graduate into full FTAs can also face challenges from other countries at the World Trade Organization(WTO).The WTO rules only permit members to give preferential terms to other countries if they have bilateral agreements that cover "substantially all the trade" between them.

**Way Forward**
- India is one of the fastest-growing large economies of the world and FTA with the UK has played a significant role in enhancing the trade volume of the country.
- However, according to policymakers, FTAs signed by India with the UK have not brought the expected tangible benefits and, on the contrary, have hurt the country's manufacturing sector due to liberal rules of origin.
- Therefore, there is a need for a detailed assessment of FTAs in terms of goods, services and investment flows by all the stakeholders involved.

## PRELIMS FACT

**Advance Version of BrahMos**

Recently, an extended range sea-to-sea variant of the BrahMos supersonic cruise missile was test fired from stealth guided missile destroyer INS Visakhapatnam.BrahMos is a joint collaboration between India and Russia.

**Key Points**

**About Advance Variant:**
- The BrahMos missile was initially developed with a range capped at 290 km.
- The range of the missile was originally capped at 290 km as per obligations of the Missile Technology Control Regime (MTCR).
- However, following India's entry into the MTCR club in June 2016, the range is planned to be extended to 450 km and to 600km at a later stage.

**About BrahMos:**
- BrahMos is a joint venture between the Defence Research and Development Organisation of India (DRDO) and the NPOM of Russia.BrahMos is named on the rivers Brahmaputra and Moskva.
- It is a two-stage (solid propellant engine in the first stage and liquid ramjet in second) missile.
- It is a multiplatform missile i.e it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the "Fire and Forgets" principle i.e it does not require further guidance after launch.
- Brahmos is one of the fastest cruise missile currently operationally deployed with speed of Mach 2.8, which is nearly 3 times more than the speed of sound.

**About INS Viskhapatnam:**
- It is the first ship of the four state-of-the-art stealth guided missile destroyers, developed under Project-15B. Other Three Ships of Project 15B:
    1. The second ship of P15B, Mormugao was launched in 2016, and is being readied for harbour trials.
    2. The third ship (Imphal) was launched in 2019, and is at an advanced stage of outfitting.
    3. The fourth ship (Surat) is under block erection and will be launched within this current financial year (2022) .
- The Guided missile Destroyers of Project 15B (P 15B) are under construction at Mazagaon Dock Shipbuilders Limited, Mumbai.

**Missile Technology Control Regime (MTCR)**
- It is an informal and voluntary partnership among 35 countries to prevent the proliferation of missile and unmanned aerial vehicle technology capable of carrying greater than 500 kg payload for more than 300 km.
- The members are thus prohibited from supplying such missiles and UAV systems that are controlled by the MTCR to non-members.
- The decisions are taken by consensus of all the members.

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- This is a non–treaty association of member countries with certain guidelines about the information sharing, national control laws and export policies for missile systems and a rule-based regulation mechanism to limit the transfer of such critical technologies of these missile systems.
- It was established in April 1987 by G-7 countries – USA, UK, France, Germany, Canada, Italy, and Japan.
- In 1992, the focus of the regime extended to on the proliferation of missiles for the delivery of all types of weapons of mass destruction (WMD), i.e., nuclear, chemical and biological weapons.
- It is not a legally-binding treaty. Hence, no punitive measures could be taken against non-compliance to the guidelines of the regime.
- India was inducted into the Missile Technology Control Regime in 2016 as the 35th member.
- India can procure high-end missile technology and run joint programmes for development of unmanned aerial vehicles with other countries. eg. Procurement of theater missile interceptor "Arrow II " from Israel, military drones like "Avenger" from the USA etc.
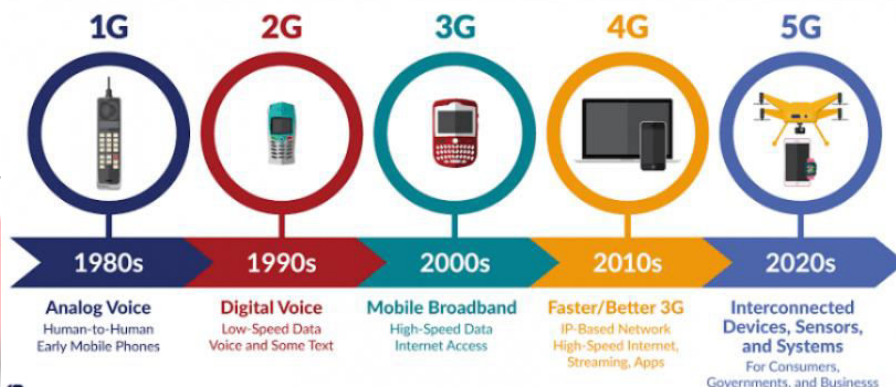
## DAILY ANSWER WRITING PRACTICE

**Qns. Despite its numerous benefits, the affordability factor will be a critical driver in the rapid expansion of 5G technology in India. Examine. (250 words)**

**Ans:**

**Introduction**

5G is the next generation of mobile broadband that will eventually replace, or at least augment 4G LTE connection. Department of Telecommunication (DoT) in 2017 setup a 5G steering committee headed by AJ Paulraj. The committee submitted the report and suggest important steps. In 2018, India planned to start 5G services but it has not yet materialized.



**Body**

**Features and benefits of the 5G technology:**

- Operate in the millimetre wave spectrum (30-300 GHz) which have the advantage of sending large amounts of data at very high speeds.
- Operate in 3 bands, namely low, mid and high frequency spectrum.
- Reduced latency will support new applications that leverage the power of 5G, the Internet of Things (IoT), and artificial intelligence.
- Increased capacity on 5G networks can minimize the impact of load spikes, like those that take place during sporting events and news events.

**Affordability factor posing issue for 5G deployment**

- **The major question of need and viability:** Telecom operators are facing a financial crisis and have a combined debt of Rs 4 lakh crore.Apart from that, they are still trying to fully monetise 4G services.
- **Huge investment needed**: The introduction of 5G will involve a heavy upfront investment and have a long payback period. Thus, the viability of 5G after the introduction is a major challenge.
- **Pricing:** Next challenge in the 5G deployment will be the pricing of the spectrum. DoT will price the spectrum but heavy upfront investment associated with 5G technologies will increase the price of the spectrum.But the telecom operators with a stressed balance sheet might not have that much capital to invest in the 5G technologies and spectrum.
- **Security issues**: China is preparing to dominate the world by rolling out its 5G technology warfare across countries. By deploying the 5G in India without indigenisation of technology will make India vulnerable to China. This will make the data of individuals, groups or even security agencies at risk.

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**Steps to be taken**

- Affordability has surely helped a major chunk of the country to shift from 2G to 4G. Free data offers are what attracted users to upgrade. The idea should be to offer better value at an aggressive price point.
- India needs to create an ecosystem capable of leveraging 5G, Like skilled manpower, technology, R&D and investment, etc.
- India should work towards becoming Fibre-ready in the upcoming years. A wider adoption of the technology will enable India to outperform most other countries. The digital-first era will necessitate an increase in data carriage and fiber connectivity will be a much-needed step as this has almost unlimited data carriage capacity.
- India has to work on Indigenous 5G technology. This will also help bring down the cost of 5G technology and benefit the end users.

**Conclusion**

The shift from 4G to 5G is not incremental, but transformational. Skipping of 5G is not a choice India can afford. The economic impact of 5G in India is expected to be over $1 trillion by 2035 according to the report of KPMG. The Sooner the deployment of 5G in India is the better for India.

## DAILY QUIZ

Q1. Consider the following statements about Sri Aurobindo:
1. He was arrested in connection with the Alipore Conspiracy Case.
2. In 1914, he started publishing a magazine Arya.
3. His greatest literary achievement was 'Savitri'.

Which of the statements given above is/are correct?
- a. 1 and 2 only
- b. 2 and 3 only
- c. 1 and 3 only
- **d. 1, 2 and 3**

Q2. Consider the following statements about Shyama Prasad Mukherji Rurban Mission (SPMRM):
1. It is a scheme launched by the Ministry of Rural Development (MoRD) in 2016.
2. It is a Centrally Sponsored Scheme (CSS).
3. The main objectives of SPMRM are to stimulate local economic development, enhance basic services, and create well planned Rurban clusters.

Which of the statements given above is/are correct?
- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- **d) 1, 2 and 3**

Q3. Recently, which one of the following has released the fourth edition of its state health index for 2019-20?
- a. Indian Council of Medical Research
- b. National Sample Survey Organization
- **c. NITI Aayog**
- d. Centre for Policy Research

Q4. The Joint Comprehensive Plan of Action was in news recently, is related to:
- a) Indo-US defence agreement
- **b) Iran nuclear deal**
- c) Military ties between India and Russia
- d) None of the above

Q5. What is 'Tokamak', sometimes seen in the news?
- a. An Israeli radar system
- b. An American anti-missile system
- c. A defence collaboration between Japan and South Korea
- **d. A device used in nuclear-fusion research for magnetic confinement of plasma**

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