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

1. How FTI-TTP will ensure faster, smoother immigration clearance

Context: Union Home Ministry inaugurated the Fast Track Immigration-Trusted Traveller Programme (FTI-TTP) on Thursday at the Sardar Vallabhbhai Patel International Airport in Ahmedabad. FTI-TTP was first introduced at the Indira Gandhi International Airport in Delhi last year. It has since been implemented at the airports in Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad and Kochi. The FTI-TTP is accessible through an online portal where applicants must complete their registration. This involves filling out personal information and uploading necessary documents. Biometric data will be captured either at the Foreigners Regional Registration Office (FRRO) or upon arrival at the airport.

Key points

- **Overview:** The initiative is designed to revolutionize the travel experience for Indian nationals and Overseas Citizen of India (OCI) cardholders by making it faster, easier, and more secure. The program represents a significant step towards modernizing India's immigration system and enhancing travel efficiency.
- **Fast Track Immigration Trusted Traveller Program (FTI-TTP):** The Fast Track Immigration Trusted Traveller Program (FTI-TTP) is an initiative aimed at enhancing immigration processes in India. Launched by Union Home Minister Amit Shah, the programme aims to provide seamless and secure international travel experiences for eligible travellers. Following its initial launch in New Delhi, the programme is now expanding to seven additional major airports across India.
- **Objective:** The FTI-TTP aims to make the immigration process more efficient and secure for pre-verified Indian nationals and OCI cardholders. This program is expected to reduce waiting times at immigration counters, thereby enhancing overall travel convenience.
- **Eligibility:** The program is open to Indian nationals and OCI cardholders who meet specific eligibility criteria. This includes individuals who have a clean record with immigration authorities and have provided accurate information during the application process.
- **Application Process:** *Online Application* - Applicants must submit their application online through the designated portal. This process involves filling out personal details, travel history, and other relevant information.
  Biometric Submission - As part of the application process, applicants are required to submit their biometrics, including fingerprints and facial images. This can be done at designated international airports in India or at the nearest Foreigners Regional Registration Office (FRRO) following a scheduled appointment.
- **Information Verification:** *Residential Address* - Providing a current residential address is mandatory. This is crucial for the verification process and helps avoid rejection of the application.
  Accuracy - Applicants must provide accurate information. False information or failure to capture biometrics can result in disqualification from the program.

Q. Consider the following statements with reference to the Fast Track Immigration Trusted Traveller Programme (FTI-TTP):

Statement-I: It is an initiative by the Central Government offering expedited emigration and immigration clearance for only Indian citizens.

Statement-II: It will be implemented through an online portal and the Bureau of Immigration will be the nodal agency.

Which one of the following is correct in respect of the above statements?

a) Both Statement-I and Statement-II are correct, and Statement-II is the correct explanation for Statement-I.

b) Both Statement-I and Statement-II are correct, and Statement-II is not the correct explanation for Statement-I.

c) Statement-I is correct, but Statement-II is incorrect.

d) Statement-I is incorrect, but Statement-II is correct. **Answer: D**

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

2. Singapore to help India's semiconductor industry

Context: Singapore is exploring new initiatives such as manufacturing of semiconductors and building a semiconductor ecosystem in India and participating in the creation of a new generation of technological solutions. The two sides are working in the areas such as renewable energy and spoke about India's "high ambition" for the eastern states such as Odisha and Assam. In addition to that the visiting President Tharman Shanmugaratnam Droupadi Murmu jointly launched the joint logo here to commemorate the 60th anniversary of the establishment of diplomatic relations between India and Singapore.

Key points

- **Overview:** President Shanmugaratnam's visit is part of a series of exchanges that will take place during the year as both sides plan to celebrate the 60th anniversary through visits and events.
- **Importance of Securing Semiconductor Supply Chains:** The pandemic highlighted the fragility of the global supply chain, particularly in the semiconductor industry, where disruptions led to a global chip shortage.
- **India and Singapore agreement on Semiconductor:** Singapore contributes around 10% of the global semiconductor output, along with 5% of the global wafer fabrication capacity (silicon wafer is a circular piece of ultra-pure silicon, out of which chips are carved) and 20% of semiconductor equipment production. Singapore has players in all segments of the semiconductor value chain: integrated circuit (IC) design, assembly, packaging and testing; wafer fabrication, and equipment/ raw material production.
  Challenge - Singapore's semiconductor industry is limited to "mature-node chips", which are used in appliances, cars, and industrial equipment. It is not equipped to make high-end logic chips like the ones used in the AI sector.
- **India-Singapore Trade and Economic Relations:** Singapore is currently India's largest trade partner within the Association of Southeast Asian Nations (Asean) and the sixth largest trade partner worldwide. It was the top source of foreign direct investment (FDI) in India in 2023, with investments valued at USD 11.77 billion.
- **India's Initiatives:** *India Semiconductor Mission (ISM)* - The ISM, launched in 2021 is an independent division under Digital India Corporation, will drive the implementation of the initiative, focusing on the development of semiconductor fabs, display fabs, compound semiconductors, and semiconductor design.
  Semicon India Programme - This initiative focuses on the development of semiconductor and display manufacturing ecosystems. Semicon India aims to attract investments and provide financial support to companies in the semiconductor sector.
- **Conclusion:** The semiconductor industry is crucial to modern technology but faces supply chain and geopolitical challenges. India's strategic initiatives position it as a key player in this evolving landscape. As global demand grows, collaboration and innovation will be crucial in addressing industry challenges and ensuring a resilient future for semiconductor manufacturing.

Q. How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered off by the science-based technologies? (বিজ্ঞান আমাৰ জীৱনৰ সৈতে কেনেদৰে গভীৰভাৱে জড়িত? বিজ্ঞানভিত্তিক প্ৰযুক্তিৰ ফলত কৃষিক্ষেত্ৰত কি কি উল্লেখযোগ্য পৰিৱৰ্তন ঘটিছে?)

Q. Which one of the following laser types is used in a laser printer?

(a) Dye laser

(b) Gas laser

(c) Semiconductor laser

(d) Excimer laser

Answer: (c)

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

3. Satellites dock in space, ISRO gets a boost for Moon & beyond

Context: The Indian Space Research Organisation on Thursday successfully docked the two satellites in space, demonstrating a capability that is critical to executing the more ambitious future missions like the building of a permanent space station or landing human on the Moon. With the success of the Space docking experiment (SpaDeX), India has become the fourth country after the US, Russia and China to accomplish the feat. Docking refers to joining together of two or more fast-moving objects in space. Most larger space assets, particularly those that involve two-way journeys from and to Earth, are made of several parts that are taken one at a time and integrated in space.

Key points

- **Overview:** The SpaDeX mission reached its historic milestone just days after ISRO's successful trial attempt on January 12, 2025. In this trial, two spacecraft were maneuvered to three meters and then safely placed back at a greater distance, simulating the docking process.
- **SpaDeX Launch Details:** The SpaDeX mission was launched aboard the PSLV C60 rocket from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh. The rocket carried-
  - Two small satellites - SDX01 (Chaser) and SDX02 (Target), each weighing approximately 220 kg.
  - 24 additional payloads for various experimental purposes.
- **Mission Objectives and Technologies of SpaDeX:** The mission proves that high-end space technologies can be developed and demonstrated with minimal expenditure. Here are some objectives and technologies of SpaDeX-
  - *Primary Objectives* - Develop and demonstrate docking technologies for spacecraft. Enable power transfer between docked spacecraft. Enhance controllability in docked conditions to extend the operational life of spacecraft.
  - *Technological Highlights* - The aircraft is equipped with advanced sensors like a laser range finder and rendezvous sensors. Robust attitude and orbit control systems with reaction wheels, magnetometers, and thrusters. Docking mechanism with motor-driven capture, retraction, and rigid capabilities.
  - *Payloads and Functionalities* - Spacecraft A, features a High-Resolution Camera and Spacecraft B is equipped with Miniature Multispectral and Radiation Monitor payloads.
- **Significance:** The SpaDeX mission signifies ISRO's forward-looking approach to enhancing India's capabilities in space technology, paving the way for ambitious future endeavours in space exploration and interplanetary missions.

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

4. Significance of Advantage Assam

Context: The Government of Assam is poised to host one of the most anticipated economic events of the year: Advantage Assam 2.0 – Investment and Infrastructure Summit 2025, a flagship initiative aimed at propelling the State into the global investment spotlight. The high-profile event, organised by the Assam Industrial Development Corporation (AIDC), will take place from February 25 to 26 next at the Veterinary College Field at Khanapara, Guwahati. It will mark Assam's largest investment promotion and facilitation initiative.

Key points

- **Overview:** According to data Assam's economic progress in fiscal year 2022-23, the State recorded an impressive 19.5% year-on-year growth.
- **Recent Investors:** Among recent investments, Tata's USD 3.3 billion Outsourced Semiconductor Assembly and Test (OSAT) project Jagiroad underscores Assam's capability to attract transformative projects in high-tech sectors.
- **Advantage assam 2.0:** The Assam Advantage 2.0 Investment and Infrastructure Summit 2025 will take place in Guwahati and is set for February 24-25. Prime Minister Narendra Modi will inaugurate the event and Assam Chief Minister Himanta Biswa Sarma announced the summit at a press conference.
- **Summit Objectives:** The summit aims to attract investment, which also focuses on boosting infrastructure development in Assam. Previous events have successfully brought important investments to the state.
- **Government Participation:** Prime Minister Modi's participation is confirmed, and Union Finance Minister Nirmala Sitharaman will be invited to the closing ceremony. Other Union Ministers will also be invited. They include Nitin Gadkari, Ashwini Vaishnaw, and Shivraj Singh Chouhan.
- **Investment Climate:** Assam has become increasingly attractive to investors. The state has maintained a peaceful and stable environment. This has led to a growing interest from various sectors over the last four years.
- **Features:** The summit will feature various seminars and focus on different infrastructure sectors. Experts will share insights and strategies to enhance development.
- **Promotional Activities:** To promote the summit, three groups will conduct roadshows. They will visit countries such as Singapore, Japan, the USA, the UK, and Dubai.
    - *Mega Jhumoir Dance* - The Mega Jhumoir Dance will feature 7,500 dancers. It marks Assam's vibrant culture and traditions, showcasing talent from the tea garden communities of the region.
    - *Roadshows* - Roadshows will promote the summit in Singapore, Japan, the USA, the UK, and Dubai. These activities aim to attract both domestic and international investors to Assam.

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

5. Long overdue, short-term regimen for TB set to be a game changer

Context: Multidrug-resistant tuberculosis (MDR-TB) is a strain of the TB disease in which the infecting tuberculosis germs are resistant to the effects of rifampicin and isoniazid, two of the most potent drugs available for TB treatment. Being infected with such TB strains carries up to a 30-40% risk of death, making

MDR-TB a serious, life-threatening illness. India bears a significant burden of TB and has a growing burden of MDR-TB; of the 1,75,923 persons reported to the World Health Organization in 2023, 27% were from India.

Key points

- **Overview:** Evolution of resistant germs was largely attributed to the lack of adherence to TB treatment and misuse of TB drugs, especially through improper drug regimens, both of which aid the selection of mutant strains of the bacterium.
- **BPaLM Regimen:** It is a new treatment regimen against multi-drug-resistant tuberculosis (MDR-TB). It was introduced by the Union Health Ministry under its National TB Elimination Program (NTEP).
  Composition - The regimen combines four drugs—Bedaquiline, Pretomanid, Linezolid, and optionally Moxifloxacin.
  Efficacy - The BPaLM regimen is a safer and more effective treatment option compared to traditional MDR-TB treatments. It is an all-oral regimen with a low overall pill burden, which makes it patient-friendly.
- **National TB Elimination Program (NTEP):** It is a public health initiative of the Government of India that organizes the country's tuberculosis elimination efforts. It has set an ambitious goal of eradicating TB by 2025.
  NI-KSHAY Portal - NI-KSHAY (Ni=End, Kshay=TB) is the web enabled patient management system for TB control under the National Tuberculosis Elimination Programme (NTEP).
- **Tapping Technology:** Leveraging technology and innovation holds promise in enhancing TB care efforts in India. The adoption of AI and digital health solutions for TB diagnosis, adherence and surveillance can revolutionise the way TB care is delivered and accessed in the country. By investing in developing better vaccines, we can hope to ultimately eliminate this airborne disease.
- **Nucleic Acid Amplification Test (NAAT):** Nucleic Acid Amplification Tests (NAATs) are molecular diagnostic tests that detect the presence of specific genetic material (DNA or RNA) from pathogens such as bacteria and viruses. It is a powerful tool for diagnosing a wide range of infections, including, COVID-19, influenza, HIV, hepatitis, tuberculosis etc.
  - *Sample Collection* - A sample is collected from the patient, such as a swab from the nose or throat, blood, or urine.
  - *Extraction* - The nucleic acid (DNA or RNA) is extracted from the sample.
  - *Amplification* - The target nucleic acid sequence is multiplied (amplified) millions of times using specific techniques like Polymerase Chain Reaction (PCR).
  - *Detection* - The amplified nucleic acid is detected and identified, confirming the presence of the target organism.
- **Way Forward:** *Prioritise TB vaccine trials* - Bacille Calmette-Guérin (BCG) vaccine for TB does not adequately protect adolescents and adults who are at the highest risk for developing and spreading TB. Streamline clinical trials for over 15 TB vaccine candidates in the pipeline.
  Regulatory frameworks - Need to create regulatory and policy frameworks for strict enforcement of drug control and non-compliance with treatment regimens to tackle antibiotic resistance.

Q. Eradication of Tuberculosis is in the dire need of global focus and synergy. What role can India play in the global effort to eradicate Tuberculosis? Also, highlight India's initiatives in this regard. (যক্ষ্মা নির্মূলকৰণৰ বাবে বিশ্বব্যাপী মনোযোগ আৰু সমন্বয়ৰ প্ৰয়োজন। যক্ষ্মা নির্মূলৰ বাবে বিশ্বব্যাপী কৰা প্ৰচেষ্টাত ভাৰতে কি ভূমিকা পালন কৰিব পাৰে? লগতে, এই ক্ষেত্ৰত ভাৰতৰ পদক্ষেপসমূহৰ ওপৰতো আলোকপাত কৰক।)