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1

Anti-satellite (A-SAT) missile test 'Mission Shakti '

CONTEXT

• India conducted its first anti-satellite (ASAT) missile test, successfully destroying a low earth orbit satellite in a 'Hit to Kill' mode in space by using a missile which covered a distance of 300 km to engage the target.

ABOUT



- A DRDO-developed Ballistic Missile Defence (BMD) Interceptor Missile successfully engaged an Indian orbiting target satellite in Low Earth Orbit (LEO).
- The test was done in the lower atmosphere to ensure that there is no space debris.
- The interceptor missile was a three-stage missile with two solid rocket boosters.
- The test has demonstrated the Nation's capability to defend its assets in outer space.
- It is a vindication of the strength and robust nature of DRDO's programmes.
- The test has once again proven the capability of indigenous weapon systems.
- The test places India in a select group alongside the US, Russia and China, countries with demonstrated anti-satellite capability.
- Mission Shakti does not violate the 1967 Outer Space Treaty of which India is a signatory. The treaty prohibits only weapons of mass destruction in outer space, not ordinary weapons.

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• It is much less harmful than the Chinese ASAT test in 2007 that led to a large-scale scattering of debris in space that threatened other satellites.

What is an anti-satellite missile test?

- ASAT is the technological capability to hit and destroy satellites in space through missiles launched from the ground.
- The first anti-satellite test (ASAT) was carried out by the US military way back in 1959. The then Soviet Union followed a year later.
- Thereafter, the two countries carried out a series of such tests up till early 1980s.
- After that there was a lull, broken only by the Chinese test in 2007.
- India became the fourth country to carry out an anti-satellite missile test.
- Other countries which could have the capability, like Israel, have not shown an intention to test.

Objective of ASATs:

- The technology is aimed at destroying, if necessary, satellites owned by enemy countries.
- With large number of crucial applications being satellite-based, satellites are extremely critical infrastructure of any country these days.
- Some of them include navigation systems, communication networks, banking systems, weather forecasting, disaster management, and military applications.
- Destroying a satellite would render these applications useless.
- It can cripple enemy infrastructure without causing any threat to human lives.
- As per the norms, the test, however, can be carried out only on one's own satellite.

Outer Space Treaty (1967)

- Also known as 'Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies' laid down the basic framework for international regulation on space related activities.
- It prohibits countries from deploying "nuclear weapons or any other kinds of weapons of mass destruction" in outer space.
- ► The treaty repeatedly emphasises that space is to be used for peaceful purposes. Presently, more than 100 countries are signatories to it. United States is also one of the signatories.
- The law universalises the outer space. It emphasises that no country can claim exclusive sovereignty of jurisdiction over space.

Moon Agreement (1979)

- ► It is a multilateral treaty that turns jurisdiction of all celestial bodies (including the orbits around such bodies) over to the international community. Thus, all activities must conform to international law, including the United Nations Charter.
- The treaty makes a declaration that the Moon should be used for the benefit of all states and all peoples of the international community. It also expresses a desire to prevent the Moon from becoming a source of international conflict.
- In practice it is a failed treaty because it has not been ratified by any state that engages in self-launched manned space exploration or has plans to do. As of January 2018, 18 states are parties to the treaty.

➤ As a follow-on to the Outer Space Treaty, the Moon Treaty intended to establish a regime for the use of the Moon and other celestial bodies similar to the one established for the sea floor in the United Nations Convention on the Law of the Sea.

Low Earth orbit

- ► A low Earth orbit is normally at an altitude of less than 1000 km and could be as low as 160 km above the Earth.
- Satellites in this circular orbit travel at a speed of around 7.8 km per second. At this speed, a satellite takes approximately 90 minutes to circle the Earth.
- In general, these orbits are used for remote sensing, military purposes and for human spaceflight as they offer close proximity to the Earth's surface for imaging and the short orbital periods allow for rapid revisits.
- ► The International Space Station is in low Earth orbit.



2 Blockchain based Coffee e-Marketplace

CONTEXT:

• Commerce Secretary launched blockchain based coffee e-marketplace in New Delhi.

ABOUT:

- India is the only country in the world where entire coffee is grown under shade, handpicked and sun dried.
- Blockchain based market place app for trading of Indian coffees is intended to bring in transparency in the trade of Indian coffee.
- The blockchain will reduce the number of layers between coffee growers and buyers and help farmers double their income.
- This initiative will help in creating a brand image for Indian Coffee throught traceability in reducing
 growers dependency an intermediaries by having a direct access to buyers for a fair price for their
 produce, in finding right coffee suppliers for exporters and within the stipulated time to meet
 the growing demands and in building a better trust and long term relationship due to increased
 visibility towards the traceability and transparency of the produce.
- A block is created for each of the lot the farmer sells on the Blockchain. The credentials of the block/ lot will be stored on the Blockchain throughout its journey and are immutable.



- It is nothing but a digital ledger. That is a book containing accounts to which debits and credits are posted from books of original entry.
- A blockchain is an anonymous online ledger that uses a data structure to simplify the way we transact. Without the help of third party blockchain allows users to manipulate the ledger in a secure way.
- ➤ It protects the identities of the users. This way blockchain is a more secure way to carry out transactions. Each list of records in a blockchain is called a block. That is why it is known as blockchain because the various growing list of records i.e. blocks are linked and secured.
- ► It brings everyone to the highest degree of accountability. With the help of this technology no more transactions will be missed, human or machine errors will be minimised etc.
- ► In 2008, Blockchain Technology was invented by Satoshi Nakamoto for use in the cryptocurrency bitcoin, as its public transaction ledger.

3 Single-use Plastics and Sustainable Nitrogen management

CONTEXT:

• In a significant first, India piloted resolutions on two important global environment issues relating to Single-use Plastics and Sustainable Nitrogen management at the fourth session of United Nations Environment Assembly (UNEA) which was held in Nairobi from 11th to 15th March 2019.

ABOUT:

- UNEA adopted both the resolutions with consensus. The theme of the UNEA this year was Innovative Solutions for environmental challenges and sustainable production and consumption.
- The global nitrogen use efficiency is low, resulting in pollution by reactive nitrogen which threatens human health, eco system services, contributes to climate change and stratospheric ozone depletion.
- Only a small proportion of the plastics produced globally are recycled with most of it damaging the environment and aquatic bio-diversity.



• Both these are global challenges and the resolutions piloted by India at the UNEA are vital first steps towards addressing these issues and attracting focus of the global community.

What is single-use plastic and why is it a problem?

- Single-use plastics, or disposable plastics, are used only once before they are thrown away or recycled. These items are things like plastic bags, straws, coffee stirrers, soda and water bottles and most food packaging.
- We produce roughly 300 million tons of plastic each year and half of it is disposable. Worldwide only 10-13% of plastic items are recycled. The nature of petroleum based disposable plastic makes it difficult to recycle and they have to add new virgin materials and chemicals to it to do so. Additionally there are a limited number of items that recycled plastic can be used.
- Petroleum based plastic is not biodegradable and usually goes into a landfill where it is buried or it gets into the water and finds it's way into the ocean. Although plastic will not biodegrade (decompose into natural substance like soil,) it will degrade (break down) into tiny particles after many years. In the process of breaking down, it releases toxic chemicals (additives that were used to shape and harden the plastic) which make their way into our food and water supply.
- These toxic chemicals are now being found in our bloodstream and the latest research has found them to disrupt the Endocrine system which can cause cancer, infertility, birth defects, impaired immunity and many other ailments.
- We produce hundreds of millions of tons of plastic every year, most of which cannot be recycled. It's obvious that we need to use less plastic, move towards environmentally sustainable products and services and come up with technology that recycles plastic more efficiently.

Nitrogen pollution- impact on the environment:

- It creates harmful algal blooms and dead zones in our waterways and oceans; the algae produce toxins which are harmful to human and aquatic organisms (and indirectly affects fisheries and biodiversity in coastal areas).
- Contamination of drinking water: 10 million people in Europe are potentially exposed to drinking water with nitrate concentrations above recommended levels. This can have an adverse effect on human health.
- Food Security: Excessive nitrogen fertiliser application contributes to soil nutrient depletion. As the world needs to feed an ever growing population, loss of arable land is major global problem.
- The release of Nitrous Oxide is essentially a greenhouse gas which is harmful to the environment.

UN Environment Assembly and Governing Council

- The United Nations Environment Assembly is the world's highest-level decision-making body on the environment.
- > It addresses the critical environmental challenges facing the world today.
- ► Understanding these challenges and preserving and rehabilitating our environment is at the heart of the 2030 Agenda for Sustainable Development.
- ► The Environment Assembly meets biennially to set priorities for global environmental policies and develop international environmental law.
- ► Through its resolutions and calls to action, the Assembly provides leadership and catalyses intergovernmental action on the environment.
- Decision-making requires broad participation, which is why the Assembly provides an opportunity for all peoples to help design solutions for our planet's health.

4 AFINDEX-19

CONTEXT:

• Inaugural Africa-India Field Training Exercise-2019 for India and African nations called AFINDEX-19 from 18 March to 27 March 2019 started with a grand opening ceremony on 18 March 2019 at Aundh Military Station, Pune.

ABOUT:

- The aim of the exercise was to practice the participating nations in planning and conduct of Humanitarian Mine Assistance and Peace Keeping Operations under Chapter VII of United Nations Peace Keeping Operations.
- The exercise focussed on exchange of best practices between the participating nations, team building and tactical level operations in conduct of United Nations mandated tasks to include establishment of a new mission, siting of a United Nations Headquarters for Peace Keeping operations, siting of Military Observer sites during the peace keeping missions, protection of civilians, nuances of standing combat deployment, convoy protection, patrolling aspects and aspects related to Humanitarian Mine Assistance.
- AFINDEX-19 aimed to train the participating contingents in Humanitarian Mine Assistance (HMA) and Peace Keeping Operations (PKO) under the United Nations Charter through practical and comprehensive discussions and tactical exercises
- Contingents from Egypt, Ghana, Nigeria, Senegal, Sudan, South Africa, Tanzania, Namibia, Mozambique, Uganda, Niger & Zambia were part of the joint exercise together with officers from Rwanda, Democratic Republic of Congo and Madagascar as Observers.
- AFINDEX-19 has greatly facilitated sharing of Indian Armed Forces experiences in United Nations Peace Keeping operations with countries in Africa and significantly enhanced relations with the African continent.

5 33rd IND-INDO CORPAT

CONTEXT:

• 33rd edition of India-Indonesia Coordinated Patrol (Ind-Indo Corpat) Concluded at Port Blair.

ABOUT:

- The IND-INDO CORPAT Series of bilaterals seek to underscore India's peaceful presence and solidarity with friendly Maritime neighbours countries to ensure good order in the maritime domain, consolidate interoperability and strengthen existing bonds of friendship between India and Indonesia.
- During the stay in Port Blair harbour, various activities such as official calls, formal reception onboard ship, sporting fixtures between both navies, ship open to visitors and professional interactions were done.
- Indian Naval assets have been increasingly deployed in the recent times to address the maritime concerns on the region.
- In addition, as part of the Indian Government's vision of SAGAR (Security and Growth for All in the Region), the Indian Navy has also been involved in assisting countries in the Indian Ocean Region with EEZ Surveillance, Search and Rescue, and other capacity-building and capability-enhancement activities.



• The 33rdIND-INDO CORPAT, also coincided with 70 years of India-Indonesia diplomatic ties, contribute towards the Indian Navy's efforts to consolidate inter-operability and forge strong bonds of friendship across the seas.

6 Exercise Mitra Shakti-VI

CONTEXT:

• The joint exercise Mitra Shakti-for the year 2018-19 was conducted from 26 March to 08 April 2019 in Sri Lanka.

ABOUT:

- Exercise MITRA SHAKTI is conducted annually as part of military diplomacy and interaction between armies of India & Sri Lanka.
- The aim of the exercise is to build and promote close relations between armies of both the countries and to enhance ability of joint exercise commander to take military contingents of both nations under command.
- The exercise involved tactical level operations in an international Counter Insurgency and Counter Terrorist environment under United Nations mandate.
- Exercise MITRA SHAKTI-VI helped both nations in going a long way in furthering cementing relationship and acted as a catalyst in bringing synergy and cooperation at grassroots levels between both the armies.

7 FinTech Conclave 2019

CONTEXT:

• NITI Aayog organised FinTech Conclave in New Delhi on 25th March, 2019.

ABOUT

- The objective was to shape India's continued ascendancy in FinTech, build the narrative for future strategy and policy efforts, and to deliberate steps for comprehensive **financial inclusion**.
- The Conclave featured representatives from across the financial space central ministries, regulators, bankers, startups, service providers and entrepreneurs.
- Government of India's efforts focused on Digital India and developing India Stack including Voluntary Aadhaar for financial inclusion have evoked significant interest from various stakeholders in the area of **Financial Technology (FinTech)**.

BACKGROUND:

- India is one of the fastest growing FinTech markets globally and industry research has projected that USD 1 Trillion or 60% of retail and SME credit, will be digitally disbursed by 2029.
- The Indian FinTech ecosystem is the third largest in the globe, attracting nearly USD 6 billion in investments since 2014.
- The Indian FinTech industry is creating cutting edge intellectual property assets in advanced risk management and artificial intelligence that will propel India forward in the global digital economy while simultaneously enabling paperless access to finance for every Indian.

Financial Technology (Fin Tech)

- FinTech is the new technology and innovation that aims to compete with traditional financial methods in the delivery of financial services.
- > It is an emerging industry that uses technology to improve activities in finance.
- ► The use of smartphones for mobile banking, investing services and cryptocurrency are examples of technologies aiming to make financial services more accessible to the general public.
- Financial technology companies consist of both startups and established financial institutions and technology companies trying to replace or enhance the usage of financial services provided by existing financial companies.
- Many existing financial institutions are implementing Fintech solutions and technologies in order to improve and develop their services, as well as gaining an improved competitive stance.

8 Chinook Heavy-lift Helicopters

CONTEXT:

• The Indian Air Force has formally inducted four US-made Chinook heavy-lift helicopters at Chandigarh's Air Force Station 12 Wing.

ABOUT:

- The India specific CH- 47F (I) is a heavy lift, tandem rotor helicopter which currently serves the armed forces of 19 countries.
- The aircraft is all-weather capable and state-of-the-art night vision goggles will permit all operations even at night.
- This massive helicopter can carry 9.6 tons of cargo, including heavy machinery, artillery guns and even light armoured vehicles to high altitude.
- The helicopter is expected to greatly enhance India's capabilities across a range of military & HADR missions.
- Our country faces a multitude of security challenges and we require a vertical-airlift capability for a much diversified terrain. The Chinook will give the IAF a quantum leap to transport cargo to precarious high-altitude locations.
- Although we have been operating the medium lift Mi-17 and heavy lift Mi-26 helicopters, the Chinook, with its operating ceiling of 20,000 feet, will redefine heli-lift not only in operations like intervalley transport of troops, airlifting artillery guns and heavy under slung loads for the Border Roads Organisation, but also for humanitarian assistance and disaster relief to far-flung crisis hit areas.
- While the original Chinook first flew in 1962, it has undergone several upgrades and is now one of the most modern heavy lift choppers in the world.
- Its missions range from ferrying troops to disaster relief operations.

9 LIMA-2019

CONTEXT:

• Langkawi International Maritime and Aerospace Exhibition (LIMA) is a maritime and aerospace exhibition that takes place once every two years in Langkawi, Malaysia.



ABOUT

- The event is one of the largest maritime and aerospace exhibitions in the Asia-Pacific.
- It is focused mainly on the defence industry, but also supports civilian industries.
- Commanding results since 1991, the event is one of the most influential shows within the maritime and aerospace industries.
- A significant gateway to the heart of the world's most dynamic market region, LIMA brings top decision makers—from senior Government officials to military and civil industry leaders—together with prominent manufacturers and suppliers from around the globe, in creating the ideal platform where partnerships are forged and business opportunities seized.
- Its insightful roundtables, conferences and dedicated business programmes; combined with trademark air shows and maritime demonstrations make LIMA a truly comprehensive affair; an event that certainly has a priority on every industry player's calendar.
- INS Kadmatt participated in Langkawi International Maritime and Aerospace Exhibition (LIMA)-19.
- INS Kadmatt is an indigenous stealth anti-submarine warfare corvette. It was commissioned into the Indian Navy in January 2016. It is named after one of the large islands amongst the Lakshadweep group of Islands off the west coast of India.

10 Biomedical Research Career Programme

CONTEXT:

• Cabinet approved five year's extension of Biomedical Research Career Programme.

ABOUT:

- It is implemented by Department of Biotechnology and UK-based biomedical research charity Wellcome Trust.
- It was launched in 2008 and has fulfilled its objectives of building and nurturing talent of highest global standards in cutting-edge biomedical research in India.
- It has enabled high quality Indian scientists working abroad to return to India and has increased number of locations geographically within India where world-class biomedical research is undertaken.
- It has also led to important scientific breakthroughs and applications to meet societal needs.
- With five-year extension, DBT will increase its commitment to programme by two times, in comparison to that of Welcome Trust.
- In the five-year extension phase, the programme will continue to capacity building and strengthening clinical research and address important health challenges for India.

11 GI Certification for five varieties of Indian coffee

CONTEXT:

• The Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India recently awarded Geographical Indication (GI) to five varieties of Indian coffee.



ABOUT:

Coffee Varieties which have been awarded GI tag

- Coorg Arabica coffee: It is grown specifically in the region of Kodagu district in Karnataka.
- **Wayanaad Robusta coffee:** It is grown specifically in the region of Wayanad district which is situated on the eastern portion of Kerala.
- **Chikmagalur Arabica coffee:** It is grown specifically in the region of Chikmagalur district and it is situated in the Deccan plateau, belongs to the Malnad region of Karnataka.
- Araku Valley Arabica coffee: It can be described as coffee from the hilly tracks of Visakhapatnam district of Andhra Pradesh and Odisha region at an elevation of 900-1100 Mt MSL. The coffee produce of Araku, by the tribals, follows an organic approach in which they emphasise management practices involving substantial use of organic manures, green manuring and organic pest management practices.
- **Bababudangiris Arabica coffee:** Grown specifically in the birthplace of coffee in India and the region is situated in the central portion of Chikmagalur district. Selectively hand-picked and processed by natural fermentation, the cup exhibits full body, acidity, mild flavour and striking aroma with a note of chocolate. This coffee is also called high grown coffee which slowly ripens in the mild climate and thereby the bean acquires a special taste and aroma.

Facts related to coffee cultivation in India

- In India, coffee is cultivated in about 4.54 lakh hectares by 3.66 lakh coffee farmers of which 98% are small farmers. Coffee cultivation is mainly done in the Southern States of India:
 - Karnataka 54%
 - o Kerala − 19%
 - Tamil Nadu 8%
- Coffee is also grown in non-traditional areas like Andhra Pradesh and Odisha (17.2%) and North East States (1.8%).
- India is the only country in the world where the entire coffee cultivation is grown under shade, hand-picked and sun dried. India produces some of the best coffee in the world, grown by tribal farmers in the Western and Eastern Ghats, which are the two major bio-diversity hotspots in the world. Indian coffee is highly valued in the world market and sold as premium coffee in Europe.
- The recognition and protection that comes with GI certification will allow the coffee producers of India to invest in maintaining the specific qualities of the coffee grown in that particular region.
- It will also enhance the visibility of Indian coffee in the world and allow growers to get maximum price for their premium coffee.
- The Monsooned Malabar Robusta Coffee, a unique specialty coffee from India, was given GI certification earlier.

Geographical indication (GI)

➤ GI is a name or sign used on products which corresponds to a specific geographical location or origin (e.g. a town, region, or country).



- ➤ The use of a GI, as a type of indication of source, may act as a certification that the product possesses certain qualities, is made according to traditional methods, or enjoys a certain reputation, due to its geographical origin.
- ► India, as a member of the World Trade Organization (WTO), enacted the Geographical Indications of Goods (Registration & Protection) Act, 1999 has come into force with effect from 15th September 2003.
- > Darjeeling Tea was the first Indian product to get the geographical indication tag.
- India has 236 GI products registered so far and over 270 more products have applied for the label.







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