My Notes....

NATIONAL

WORLD'S FIRST EVER CHEETAHS RELOCATED IN INDIA

Seven decades after it was *reported extinct in India*, the cheetah was reintroduced in the country on 17 September 2022. Under '*Project Cheetah*', the Central government is "*re-introducing" eight African cheetahs* – five females and three males -- at the *Kuno National Park* in Madhya Pradesh.

What is the Project Cheetah?

1. *Project Cheetah* was approved by the *Supreme Court of India in January 2020* as a pilot programme to reintroduce the species to India.

2. The concept of bringing the cheetah back was *first put forth in 2009* by Indian conservationists, along with *Cheetah Conservation Fund (CCF)*, a not-for-profit organisation, headquartered in Namibia, which works towards saving and rehabilitating the big cat in the wild.

3. In July 2020, *India and the Republic of Namibia* signed a Memorandum of Understanding (MoU), with the Namibian government agreeing to donate the eight felines to launch the programme.

4. This is the *first time that a wild southern African cheetah introduced in India*, or anywhere in the world. The cheetah is believed to have *disappeared from the Indian landscape in 1947* when *Maharaja Ramanuj Pratap Singh Deo* of *Koriya princely state* hunted down and shot the last three recorded Asiatic cheetahs in India.

5. The cheetah was *officially declared extinct* by the Indian government **in 1952**.

> **Why are cheetahs being reintroduced?**
>
> 1. The major purpose of the project is *to develop healthy meta-populations in India* that allow the cheetah to execute its functional role as a top predator.
>
> 2. The *cheetah is a flagship grassland species*; whose conservation also helps in preserving other grassland species in the predator food chain.

THE DOT ISSUED DRAFT TELECOM BILL

In a bid to do away with *British-era laws* governing the telecom sector, *the Department of Telecommunications (DoT)* issued the *draft Indian Telecommunication Bill, 2022*. The proposed Bill aims to bring in sweeping changes to *how the telecom sector is governed*, primarily by giving the Centre more powers in several areas to do so.

Key amendments in existing telecom laws

1. One of the key changes is inclusion of *new-age over-the-top communication services* like *WhatsApp*, *Signal* and *Telegram* in the definition of telecommunication services.

2. As per the draft law, providers of telecommunication services will be covered under the

> **Why a draft Telecommunication Bill?**
>
> 1. Through the *Indian Telecommunication Bill, 2022*, the Centre aims to consolidate and *amend the existing laws* governing the provision, development, expansion and operation of telecommunication services, *telecom networks and infrastructure*, in addition to assignment of spectrum.
>
> 2. The draft Bill, which was published by the DoT on 21 September 2022, consolidates *three separate acts* that govern the telecommunications sector — *Indian Telegraph Act 1885*, **Indian Wireless Telegraphy Act 1933**, and *The Telegraph Wires, (Unlawful Protection) Act 1950*.

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licensing regime, and will be subjected to similar rules as other telecom operators.

3. This issue has been under contention for several years now with telecom service providers seeking a *level-playing field with OTT apps* over communication services such as *voice calls*, *messages*, etc. where operators had to incur high costs of *licences and spectrum*, while OTT players rode on their infrastructure to offer *free services*.

4. The draft Bill also accords the Centre powers to defer, *convert into equity*, write off or grant relief to any licensee under extraordinary circumstances, including *financial stress*, *consumer interest*, and *maintaining competition*, among other things.

5. It also proposes to replace the *Universal Service Obligation Fund (USOF)* with the *Telecommunication Development Fund (TDF)*.

6. *USOF* is the pool of funds generated by the *5 per cent Universal Service Levy* that is charged upon all telecom fund operators on their Adjusted Gross Revenue.

7. *The USOF* has largely been used to aid rural connectivity. However, with the TDF, the objective is also to boost connectivity in underserved urban areas, R&D, skill development, etc.

THE CONTROVERSY OVER NAAC'S SYSTEM

The *National Assessment and Accreditation Council (NAAC)*, which carries out *quality checks or assessments* of Indian *Higher-level Educational Institutions (HEIs)*, courted controversy over the rating of the *Maharaja Sayajirao University* of Baroda and allegations of bribery in the process. When the *NAAC released the ratings*, the institute's score changed *from A to A+* on the back of improvement across parameters.

What is NAAC?

1. *The NAAC*, an *autonomous body* under the *University Grants Commission (UGC)*, assesses and certifies HEIs with gradings as part of accreditation.

2. Through a *multi-layered process*, a higher education institution learns whether it meets the standards of quality set by the evaluator in terms of *curriculum*, *faculty*, *infrastructure*, *research*, and *other parameters*.

3. The ratings of institutions range *from A++ to C*. If an institution is *graded D*, it means it is *not accredited*.

How is the accreditation process carried out?

1. The current approach has been described as "*input-based*". In other words, *NAAC relies heavily on self-assessment reports* of applicant institutions.

> **How many institutions in India are accredited?**
> 1. There are *1,043 universities* and *42,343 colleges* listed on the portal of the *All India Survey on Higher Education*.
> 2. As per the latest data from 21 June 2022, there were *406 universities* and *8,686 colleges* that were *NAAC-accredited*.
> 3. Among the states, Maharashtra accounts for the highest number of accredited colleges at 1,869 – more than twice as many as Karnataka's 914, the second highest. *Tamil Nadu has the most accredited universities at 43*.

2. The first step has an applicant institution submitting a *self-study report of information* related to *quantitative and qualitative metrics*.

3. The data is then validated by *NAAC expert teams*, followed by peer team visits to the institutions. This last step has sparked controversy.

AROGYA MANTHAN 2022

Union Health Minister Mansukh Mandaviya inaugurated "*Arogya Manthan 2022*" to celebrate *four years* of the implementation of *Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)* and *one year of the Ayushman Bharat Digital Mission (ABDM)* on 25 September 2022.

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More about ABDM

1. The ***Ayushman Bharat Digital Mission (ABDM)*** aims to develop the backbone necessary to support the ***integrated digital health infrastructure*** of the country.

2. It will ***bridge the existing gap*** amongst different stakeholders of the ***Healthcare ecosystem through digital highways***.

3. On 26 February 2022, the Union Cabinet, chaired by Prime Minister approved the national rollout of the ***Central Sector Scheme***, the ***Ayushman Bharat Digital Mission (ABDM)*** of the Ministry of Health and Family Welfare with a budget of Rs 1,600 crores for five years.

4. The ***National Health Authority (NHA)*** will be the ***implementing agency*** of the ***Ayushman Bharat Digital Mission (ABDM)***.

5. ***Digital health*** solutions across the ***healthcare ecosystem*** have proven to be of immense benefit over the years, with ***CoWIN***, ***Arogya Setu*** and ***e-Sanjeevani*** further demonstrating the role technology can play in enabling access to healthcare.

> **Flashback**
>
> 1. Based on the foundations laid down in the form of ***Jan Dhan, Aadhaar and Mobile (JAM) trinity*** and other digital initiatives of the government, ***Ayushman Bharat Digital Mission (ABDM)*** is creating a seamless online platform through the provision of a ***wide range of data***, ***information and infrastructure services***, duly leveraging open, interoperable, standards-based digital systems while ensuring the security, confidentiality and privacy of health-related personal information.
>
> 2. Under the ABDM, citizens will be able to create their ***ABHA (Ayushman Bharat Health Account) numbers***, to which their ***digital health records*** can be linked.
>
> 3. This will enable the ***creation of longitudinal health records*** for individuals across various healthcare providers, and improve clinical decision-making by healthcare providers.

6. The mission will improve ***equitable access to quality healthcare*** by encouraging use of technologies such as ***telemedicine*** and enabling national portability of health services.

PFI DECLARED 'TERRORIST ORGANISATION'

The central government has announced a ***ban*** on the ***Popular Front of India (PFI)***, the organisation whose leaders and offices were raided by the ***National Investigation Agency (NIA)*** and the ***Enforcement Directorate (ED)*** in states across the country on 28 September 2022.

What does the ban notification say?

1. The ***notification*** issued by the ***Ministry of Home Affairs (MHA)*** imposed a ***ban on the PFI*** and its associate organisations, including the ***Rehab India Foundation (RIF)*** and ***Campus Front of India***, for five years under ***The Unlawful Activities (Prevention) Act (UAPA), 1967***.

2. The notification gave a number of reasons, including

> **What is PFI?**
>
> 1. The PFI calls itself a "***neo-social movement***" with a vision to empower ***all marginalised sections in India***.
>
> 2. Its ***creation in 2006*** was the result of a merger of three Muslim interest groups — Kerala-based ***National Democratic Front (NDF)***, ***Karnataka Forum for Dignity (KFD)*** and Tamil Nadu-based ***Manitha Neethi Pasarai (MNP)***.
>
> 3. While its influence is most prominent in Kerala, the PFI has expanded its base across the country and now has a ***presence in almost 23 states***.
>
> 4. The ***PFI emerged*** in the aftermath of the ban on the ***Students Islamic Movement of India (SIMI)***.
>
> 5. The PFI now has various ***allied organisations*** including its political arm ***Social Democratic Party of India (SDPI)***, the student wing ***Campus Front of India***, ***National Women's Front***, an NGO called ***Rehab India Foundation*** and a think tank called Empower India Foundation.

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that **the PFI and its associates or affiliates or fronts** operate openly as **socio-economic**, **educational and political organization** but, they have been pursuing a secret agenda to **radicalize a particular section of the society.**

3. They are working towards **undermining the concept of democracy** and show sheer disrespect towards the **constitutional authority** and **constitutional set up** of the country.

4. **The PFI and its associates or affiliates or fronts** have been **indulging in unlawful activities**, which are prejudicial to the **integrity**, **sovereignty** and **security of the country.**

5. Therefore, the notification said, the central government had decided to declare the PFI and its various fronts as an "**unlawful association**" with "**immediate effect**".

INTERNATIONAL

101ST COUNTRY TO RATIFY ISA AGREEMENT

The US has ratified the **International Solar Alliance Agreement** on 17 September 2022. The ISA was conceived as a **joint effort by India and France** to mobilize efforts against climate change through the deployment of **solar energy solutions**.

What

1. The **International Solar Alliance (ISA)** is an **action-oriented**, member-driven, collaborative platform for **increased deployment of solar energy technologies**.

2. Its basic motive is to facilitate energy access, **ensure energy security**, and **drive energy transition** in its member countries.

3. **A total of 106 countries** have signed the ISA Framework Agreement. Out of 106 nations, **86 have signed and ratified the ISA Framework Agreement**. All member states of the United Nations are eligible to join the ISA.

4. The United Nations General Assembly (UNGA) has granted **Observer Status** to the **International Solar Alliance (ISA)**.

5. It will help provide for regular and well-defined cooperation between the Alliance and the United Nations that would **benefit global energy growth and development**.

6. The ISA will help member countries develop **low-carbon growth trajectories**, with a particular focus on delivering impact in countries categorized as **Least Developed Countries (LDCs)** and the **Small Island Developing States (SIDS)**.

7. One of the important products of ISA is **One Sun One World One Grid (OSOWOG)**. The OSOWOG focuses on a **framework for facilitating global cooperation**, building a global ecosystem of interconnected renewable energy resources (mainly solar energy) that can be seamlessly shared.

I2U2 GROUP MEETING HELD

The **I2U2 grouping** of **India**, **Israel**, **UAE** and the **US** have expressed commitment to **deepening their economic partnership** and has taken stock of current projects in **agriculture** and **clean energy** and reviewed potential projects to help the group's objectives. The group met on 20 September 2022 on the margins of the **United Nations General Assembly Meeting**.

What

1. The group expressed its commitment **to deepening the economic partnership** among the four countries.

2. They took stock of current projects in **agriculture and clean energy** and reviewed potential projects to help further the group's objectives. The group looks forward to building on the **success of the Leaders' Summit** in July.

3. The **I2U2 Grouping** was conceptualised during the **meeting of the foreign ministers** of the **four countries** held in **October 2021**.

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4. The group is aimed *to encourage joint investments* in *six mutually identified areas* such as water, energy, transportation, space, health, and food security.

5. It intends *to mobilize private sector capital* and expertise to help *modernize the infrastructure*, *low carbon development pathways* for our industries, improve public health, and promote the development of critical emerging and *green technologies*.

JOINT DRILL 'ABHYAS' HELD

The *Indo-US Coast Guard joint exercise "Abhyas-01/22*" was held off the coast Chennai on 19 September 2022. The focus of the exercise was to *familiarise the personnel of Coast Guards* of both the nations with each other's capabilities. The objectives included *strengthening working relationship* between the forces of the two nations, *enhancing inter-operability in the area of maritime search and rescue (SAR)*, boarding operations and other maritime law enforcement duties.

What

1. The highlights are *fleet manoeuvers*, creating a scenario of *hijacking of a vessel* and subsequent rescue of its crew in a coordinated *anti-piracy joint operation*.

2. *Interdiction of pirated vessel*, coordinated joint boarding operation, SAR demonstration and external fire-fighting to salvage burning ships were the other highlights of the exercise.

3. The 4-day visit of United States Coast Guard Cutter Midgett to Chennai on a goodwill visit culminated today.

4. During the visit, *USCG ship* had professional exchanges on visit-board-search-seizure operations, cross-deck visits, friendly volleyball match with Indian Coast Guard counterparts from 16 to 19 September.

SAPTA KOSI HIGH DAM PROJECT

India and Nepal have agreed to take forward the *Sapta Kosi high dam project* through further studies, as senior officials of the two sides met in Kathmandu and comprehensively reviewed the *bilateral water-sector cooperation*, including the implementation of the *Mahakali Treaty* and cooperation in areas of *flooding and inundation*.

What

1. The 9th meeting of the *Joint Committee on Water Resources (JCWR)* was preceded by the 7th meeting of the *Joint Standing Technical Committee on Water Resources* on 21-22 September 2022.

2. These meetings comprehensively reviewed the *bilateral water-sector cooperation* between *India and Nepal*, including the implementation of the *Mahakali Treaty*, the *Sapta Kosi-Sun Kosi Project* and cooperation in areas of flooding and inundation.

3. The *Mahakali Treaty was signed in 1996* over the integrated development of the *Mahakali River*, including *Sarada Barrage*, *Tanakpur Barrage* and *Pancheshwar project*.

4. The progress of various bilateral committees, including *Joint Committee on Inundation and Flood Management (JCIFM)* and *Joint Committee on Kosi and Gandak Project (JCKGP)*, was also discussed.

5. It was agreed to take forward the *Sapta Kosi high dam project* through further studies which take into consideration the *planned upstream projects*, submergence area of the Project as well as other *social*, *environmental* and *technical aspects*.

ECONOMY

NATIONAL LOGISTICS POLICY LAUNCHED

The Prime Minister on 17 September 2022 launched the *National Logistics Policy (NLP)* at the Vigyan Bhawan in New Delhi. The policy is aimed at *promoting seamless movement of goods* and *enhancing the competitiveness of the industry*. It is expected to focus on areas such as *process re-engineering*, *digitisation*, and *multi-modal transport*.

More about NLP

1. The policy seeks to *support faster growth* after two pandemic-ridden years. It will *streamline rules* and *address supply-side constraints*, besides providing a roadmap to *reduce fuel costs* and lower logistics costs.

2. The draft policy provides for the government creating a *single point of reference for all logistics* and trade facilitation matters, reducing costs for the logistics sector to *10 per cent* in five years. The logistics sector is estimated at *13-14 per cent of GDP*.

3. The policy is an endeavour *to improve the competitiveness of Indian goods*, enhancing economic growth and *increasing employment opportunities*.

4. An *unified logistics interface platform (ULIP)* will be developed as part of the *national logistics policy* to help different government and private agencies; shippers, service providers enable information exchange on a real time basis in a confidential manner.

> **Flashback**
>
> 1. The Central government has been working on the *National Logistics Policy* for three years. The commerce ministry released a *draft logistics policy for consultation in 2019*, but it was delayed by the Covid-19 pandemic.
> 2. The *National Logistics Policy* was once again announced by Finance Minister Nirmala Sitharaman in the Budget for 2022-23.
> 3. The government is using technology *to strengthen the logistics sector*. Faceless assessment has started in customs and *e-way bills* and *FASTag* are bringing efficiency in the logistics sector.
> 4. *Sagarmala project* to connect ports and dedicated freight corridors have started to improve logistics connectivity and systematic infrastructure development work.

5. The other interventions proposed include *Standardisation of physical assets and benchmarking service quality standards*; **Logistics Human Resources Development and Capacity Building**; *state engagement*; export-import logistics; Service Improvement framework; Sectoral Plan for Efficient Logistics; and Facilitation of Development of Logistics Parks.

6. *NICDC's (National Industrial Corridor Development Corporation)* Logistics Data Bank Project has been leveraged to develop ULIP.

RBI INTRODUCED UPI LITE

Shaktikanta Das, governor of the Reserve Bank of India (RBI), introduced *UPI Lite* on 20 September 2022, to speed up and simplify *low-value UPI payments*. Users will be able to conduct *real-time small-value payments up to Rs 200* using UPI Lite, an on-device wallet function, without *entering a UPI PIN*.

What is UPI

1. The term "*Unified Payment Interface" (UPI)* refers to a *smartphone application* that enables users *to transfer money between bank accounts*.

2. It is a *mobile payment system* created by the *National Payments Corporation of India*.

3. Customers are no longer required to initiate transactions by *divulging private information* like bank account numbers or other financial details.

What is UPI123Pay

1. *To decrease cash-based transactions* in India, the RBI introduced UPI. For a *sizable percentage of the population* who *lacked smartphones*, UPI was unavailable.

2. The RBI introduced *UPI123Pay* to solve this issue. Customers will be able to use *their feature phones* for almost all transactions using *UPI123Pay*, with the exception of scan and pay.

What is UPI Lite?

1. *UPI Lite* is an "*on-device wallet*". To use *UPI Lite*, users must *first contribute money to the app's wallet* from their bank accounts.

2. Users can make *real-time payments without the Internet* because it is a "*on-device wallet*."

3. In phase one, *UPI Lite will process transactions in near offline mode*, i.e., debit (payments) can be made without Internet connection and credits into the account will be done online, NPCI said.

4. However, there is a *plan to make UPI Lite offline in the future* where customers can process transactions — *both debit and credit* — in complete offline mode.

5. The *maximum amount* that can be transferred via UPI LITE is *Rs. 200*, and the *maximum amount that can be in your UPI LITE balance* at any given moment is *Rs. 2000*, or any additional limits that may occasionally be set by NPCI.

> **How UPI lite works**
>
> 1. You can *access UPI LITE* and complete UPI LITE transactions by logging into the app you downloaded on your phone and *providing the necessary information* for the *device's biometric or pattern validation*.
>
> 2. *UPI LITE* does not require a separate authorization or UPI PIN to complete a transaction.

UN'S ECW FUND RECEIVES FUND

Education Cannot Wait (ECW), the *UN global fund for education* in emergencies and protracted crises, has *received $42 million in new funding* from the LEGO Foundation, Germany and the US, said the fund.

What

1. The new funding catalyses much-needed support to address a *global learning crisis* where *over 78 million crisis-impacted girls and boys* are out of school, and nearly two-thirds of 10-year-olds are unable to read a simple text.

2. There are *222 million children* out there that will allow us to see the *full potential of humanity*, said ECW Director Yasmine Sherif.

3. Since its *inception in 2016*, the ECW and its strategic partners have mobilised more than $1.1 billion and directly supported *nearly 7 million children and adolescents*.

4. *Education Cannot Wait (ECW)* is the United Nations global, billion-dollar fund for education in emergencies and protracted crises.

5. ECW support and *protect holistic learning outcomes for refugee*, internally displaced and other crisis-affected girls and boys, so no one is left behind.

6. ECW is administered under *UNICEF's financial*, human resources, and administrative rules and regulations; operations are run by the *Fund's own independent governance structure*.

SCIENCE AND TECHNOLOGY

INDIA'S PUSH FOR HOME-GROWN NAVIGATION SYSTEM

The *Indian government* is *pushing smartphone makers* to enable support for its *NavIC navigation system* in new devices sold in the country from next year, a move that has spooked the industry due to additional costs and tight time frame.

What is NavIC?

1. *NavIC*, or *Navigation with Indian Constellation*, is an *independent stand-alone navigation satellite system* developed by the Indian Space Research Organisation (ISRO).

2. *NavIC* was *originally approved in 2006* at a cost of $174 million. It was expected to be completed by late 2011, but *only became operational in 2018*.

3. *NavIC consists of seven satellites* and covers the *whole of India's landmass* and *up to 1,500 km* (930 miles) from its boundaries.

4. Currently, *NavIC's use is limited*. It is being *used in public vehicle tracking in India*, for providing *emergency warning alerts to fishermen* venturing into the deep sea where there is *no terrestrial network connectivity*, and for tracking and providing information related to natural disasters. Enabling it in smartphones is the next step India is pushing for.

> **How does NavIC Compare?**
>
> 1. The main difference is the *serviceable area covered* by these systems. *GPS caters to users across the globe* and its *satellites circle the earth twice a day*, while NavIC is currently for use in India and adjacent areas.
>
> 2. Like GPS, there are *three more navigation systems* that have global coverage – *Galileo from the European Union*, Russia-owned *GLONASS* and *China's Beidou*. *QZSS*, operated by Japan, is another regional navigation system covering *Asia-Oceania region*, with a focus on Japan.
>
> 3. *India's 2021 satellite navigation draft policy* stated the government will work towards "*expanding the coverage from regional to global*" to ensure availability of NavIC signal in any part of the world.
>
> 4. NavIC is "*as good as GPS of the United States in terms of position accuracy*," the Indian government said in August 2022.

NASA'S DART SUCCESSFUL TESTED

NASA's *Double Asteroid Redirection Test (DART) spacecraft* successfully *crashed* into the *asteroid Dimorphos* on 27 September 2022. *With the collision*, humanity's *first planetary defence test* has been completed successfully in a mission that went exactly as planned without any hitches.

More about DART

1. The *targeted asteroid Dimorphos* is *actually a moon* to a slightly *larger asteroid called Didymos*.

2. While Didymos is 780 m at its widest, Dimorphos is about 160 metres. *Dimorphos orbits around Didymos*, and *this two-body system go around the Sun*.

3. One of the reasons scientists chose to target Dimorphos was because of *its relatively shorter orbit around Didymos*.

4. A deviation in this orbit was likely to be more noticeable, and thus *easier to measure*, than say, if Didymos itself was targeted and an attempt was made to measure the change in *its orbit around the Sun*.

5. The *DART mission* was launched in November last year. The collision is likely *to create a crater on Dimorphos*.

What are asteroids?

1. **Asteroids are rocky objects** that **orbit the Sun**, much **smaller than planets.** They are also called **minor planets.**

2. **Asteroids are divided into three classes. First**, those found in the **main asteroid belt between Mars and Jupiter**, which is estimated to contain somewhere between **1.1-1.9 million asteroids.**

3. The **second group** is of **Trojans** which **are asteroids** that **share an orbit with a larger planet.** NASA reports the **presence of Jupiter, Neptune and Mars trojans.** In 2011, they reported an **Earth trojan as well.**

4. The **third classification is Near-Earth Asteroids (NEA)**, which **have orbits that pass close by the Earth.** Those that **cross the Earth's orbit are called Earth-crossers.**

5. **More than 10,000 such asteroids are known**, out of which over 1,400 are classified as **potentially hazardous asteroids (PHAs).**

NEW PROPULSION SYSTEM FOR ROCKETS TESTED

The *Indian Space Research Organisation (ISRO)* said on 21 September 2022, that it has successfully demonstrated a *hybrid propulsion system* that uses a *solid fuel and liquid oxidiser*. The *hybrid motor* was tested at the *ISRO Propulsion Complex (IPRC)*, Mahendragiri.

More about the propulsion system

1. The *hybrid system* is more efficient, "*greener*" and *safer to handle* and paves the way for *new propulsion technologies for future missions*, the *Vikram Sarabhai Space Centre (VSSC)* which tested it with support from the *Liquid Propulsion Systems Centre (LPSC)*, said.

2. In the ground-based test, the flight equivalent *30 kN hybrid motor* used *Hydroxyl-terminated polybutadiene (HTPB)*-based *aluminised solid fuel* and *liquid oxygen (LOX)* as the oxidiser. The test was performed for 15 seconds on a *300-mm sounding rocket motor*.

3. Conventional *HTPB-based solid propellant motors* used in rockets use *ammonium perchlorate* as oxidiser. In rocket engines, *oxidisers supply the oxygen* needed for combustion.

4. While *both HTPB and LOX are green*, the *cryogenic LOX is safer to handle*. And unlike conventional solid motors, the hybrid technology permits restarting and throttling capabilities on the motor. The use of liquids facilitates *throttling and control over the flow rate of LOX*.

5. The *technology demonstration* paves the way for *hybrid propulsion-based sounding rockets* and an exciting platform for *vertical landing experiments* for spent-stage recovery.

6. As part of perfecting the technology, ISRO will try it out on a *sounding rocket launch* in future.

INDIA CLIMBS SIX NOTCHES IN GII 2022

India climbed *six notches to 40th position* in the *Global Innovation Index (GII) 2022* on account of improvement in several parameters, according to a report by the Geneva-based *World Intellectual Property Organization (WIPO)*. It said that *India's innovation performance* is above average for the *upper middle-income group* in almost every *innovation pillar*, with the *exception of infrastructure*, where it scores below average.

More about ranking

1. Ranking is based on two sub-indices, *Innovation Input Sub-Index* and *Innovation Output Sub-Index.*

2. *Türkiye and India* enter the *top 40 for the first time*, placed 37th and 40th, respectively.

3. *India overtakes Viet Nam (48th)* as the top lower middle-income economy for innovation.

4. In the middle-income economies *China, Türkiye*

GII 2022 puts its hopes in two novel innovation waves:

1. *Digital Age innovation wave* built on *supercomputing*, *artificial intelligence* and *automation* that is on the verge of making ample productivity impacts across all sectors – including services – and helping to achieve *scientific breakthroughs* in basic sciences of all fields.

2. *Deep Science innovation wave* built on breakthroughs in *biotechnologies*, *nanotechnologies*, new materials and other sciences that are revolutionizing innovations in *four fields of key importance* to society: *health*, *food*, *environment*, and *mobility*.

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and India continue to change the innovation landscape; others like the Islamic Republic of Iran and Indonesia show promising potential.

5. In the rankings, the *top position was occupied by Switzerland*. It was followed by the *US*, *Sweden*, the *UK* and the *Netherlands*. China was placed in the 11th position.

DOT MAKES IMEI REGISTRATION MANDATORY

The *Department of Telecommunications (DoT)* has made it mandatory for mobile phone manufacturers to register the *International Mobile Equipment Identity (IMEI)* – the *15-digit numbers* that uniquely identify each mobile device – of all handsets made in India with the government. *Importers, too*, will have to register with the government the IMEI number of each phone before importing it.

How is the DoT mandating these changes?

1. In a *gazette notification* on 26 September 2022 amending the prevention of tampering of the *Mobile Device Equipment Identification Number, Rules, 2017*, the DoT said.

2. The manufacturer shall register the *international mobile equipment identity number* of every mobile phone manufactured in India with the *Indian Counterfeited Device Restriction portal* of the Government of India in the *Department of Telecommunications* prior to the first sale of the mobile phone.

3. It added that the *IMEI number of mobile phones imported in India for sale*, testing, research or "*any other purpose*" will also have to be registered on the same government portal "*prior to the import of the mobile phone into the country*".

> **What is the IMEI number?**
> 1. The *IMEI is a unique number* that is *used to identify a device on a mobile network*.
> 2. It has *15 digits* and is like a phone's unique identity. The number is used to verify the identity of a device when a user uses the Internet or places a call through it. Phones with a *dual-SIM option have two IMEI numbers*, one for each SIM.
> 3. The IMEI number can *help network providers track down a device* in case it gets stolen or is lost.
> 4. *Once such loss or theft* is reported, the carriers can deny the device access to the cellular network even with a *new SIM card*.

DRDO TESTED VSHORADS MISSILES

THE Defence Research and Development Organisation (DRDO) on 27 September 2022 conducted two successful test flights of *Very Short Range Air Defence System (VSHORADS) missiles* capable of *neutralising low altitude aerial threats* at short ranges.

What

1. The *Very Short Range Air Defence System (VSHORADS) missile* was successfully flight tested from a ground based portable launcher, off the coast of Odisha.

2. The *VSHORADS missiles* were launched on 27 September 2022 from a *ground-based portable launcher* at the *Integrated Test Range (ITR)* of the DRDO at Chandipur, off the coast of Odisha.

3. The missile is a *Man Portable Air Defence System (MANPAD)* designed and developed indigenously by *DRDO's Research Centre Imarat (RCI)*, Hyderabad in collaboration with other DRDO facilities and various Indian industry partners.

4. The *air defence missile* incorporates *many novel technologies* including *miniaturised Reaction Control System (RCS)* and *integrated avionics*, which have been successfully tested during the trials.

5. The missile has been *designed to neutralise low altitude aerial threats* at short ranges and is propelled by a dual thrust solid motor.

WORLD'S FIRST CLONED WILD ARCTIC WOLF 'MAYA'

A *wild Arctic wolf* was *successfully cloned for the first time* in the world by a *Beijing-based gene firm*. The *cloning of the Arctic wolf*, also known as the *white wolf* or *polar wolf*, which is native to the High Arctic tundra of Canada's Queen Elizabeth Islands, is considered a milestone achievement in conserving rare and endangered species through *cloning technology*.

What

1. To *save the endangered animal*, we started the research cooperation with *Harbin Polarland* on cloning the *Arctic wolf in 2020*. After two years of *painstaking efforts*, the *Arctic wolf* was cloned successfully. It is the *first case of its kind in the world*, the Beijing-based Sinogene Biotechnology Co's said.

2. The wolf named *Maya* is in good health. The *donor cell of the wolf* came from the *skin sample of a wild female Arctic wolf* and *its oocyte* was taken from a *female dog*.

3. *Maya's surrogate mother* was a *beagle*, a dog breed. The dog was selected as the surrogate as it *shares genetic ancestry with ancient wolves* and hence, ensures success in cloning.

4. The process began with constructing *137 new embryos from enucleated* (process of removing the nucleus from a cell) *oocytes* and *somatic cells followed by the transfer of 85 embryos* to the uteri of seven beagles, of which one was born as a healthy wolf.

> **Flashback**
>
> 1. *Cloning*, the *process of creating copies of living organisms*, including *cells*, *tissues*, etc, was first used to create an animal *in 1996 by a Scottish scientist*.
>
> 2. The animal, a *sheep named Dolly*, was made using an *udder cell from an adult sheep*.

MISCELLANEOUS

CARBON DATING FOR THE GYANVAPI

A district court in Varanasi on 22 September 2022 allowed a petition seeking *carbon dating* of the structure inside the *Gyanvapi mosque* that the Hindu side has claimed is a '*Shivling*'. The court has issued notices to other parties wanting to know whether they have any objection to carbon dating.

What is carbon dating?

1. *Carbon dating* is a widely-used method applied to *establish the age of organic material*, things that were *once living*.

2. *Living things* have carbon in them in various forms. The dating method makes use of the fact that a *particular isotope of carbon called C-14*, with an *atomic mass of 14*, is radioactive, and decays at a rate that is well known.

3. The *most abundant isotope of carbon* in the atmosphere is *carbon-12* or a carbon atom whose atomic mass is 12. A *very small amount of carbon-14 is also present*. The *ratio of carbon-12 to carbon-14 in the atmosphere is almost static*, and is known.

> **What about non-living things?**
>
> 1. Though extremely effective, *carbon dating cannot be applied in all circumstances*. Specifically, it *cannot be used to determine the age of non-living things*, like rocks, for example.
>
> 2. Also, the age of things that are more than 40,000-50,000 years cannot be arrived at through *carbon dating*. This is because after eight to ten cycles of half-lives have been crossed, the amount of *carbon-14* becomes almost negligible and undetectable.
>
> 3. There are *other methods* to calculate the age of *inanimate things*, but *carbon dating* can also be used in an *indirect way in certain circumstances*.

4. *Plants get their carbon* through the *process of photosynthesis*, while animals get it mainly through food. Because *plants and animals get their carbon* from the

atmosphere, they **too acquire carbon-12 and carbon-14 isotopes** in roughly the same proportion as is available in the atmosphere.

5. But **when they die,** the **interactions with the atmosphere stops**. There is no further intake of carbon (and no outgo either, because metabolism stops).

6. Now, **carbon-12 is stable and does not decay**, while **carbon-14 is radioactive**. **Carbon-14 reduces to one-half of itself in about 5,730 years**. This is what is known as its '**half-life**'.

7. So, after a plant or animal dies, the ratio of **carbon-12 to carbon-14** in the body, or its remains, begins to change. This **change can be measured** and can be used to deduce the approximate time when the organism died.

WORLD TOURISM DAY 2022

The **statutes of United Nations World Tourism Organisation (UNWTO)** came about **in 1970** on this day (27 September) and therefore coincided with the choice of celebrating **World Tourism Day**. There was a purpose behind the adoption of those statutes and today it is to **throw light on the role of Tourism** and how it creates lifetime opportunities for the people who benefit from it.

What

1. A whole industry is involved, simultaneously creating **social values**, **cultural habits**, **political ethics**, and **economic development**.

2. **In 1997** a host country was appointed, and people from the industry were encouraged to meet there. It was decided at a meeting in Istanbul in, Turkey.

3. **World Tourism Day 2022**, the theme is to "**rethink tourism**." A theme was adopted at every annual meeting. The idea was to help **spread awareness** and **increase tourism internationally**.

4. The various countries send their spokespeople **to promote their respective tourism packages** and garner business for their country's service establishments.

5. Tourism has been segregated to specialise in various branches like **Health Tourism**, **Heritage Tourism**, **Wildlife**, and **Nature Tourism**.

6. The **local cultures** have also started marketing themselves that way, and the business potential is humongous and growing yearly.

7. The **jungles**, the **mountains**, the **rivers**, and the beaches all attract tourists of various types.

8. **World Tourism Day** this year is being hosted by **Bali**, Indonesia.

DADASAHEB PHALKE AWARD FOR ASHA PAREKH

Veteran actor **Asha Parekh** will be conferred the **Dada Saheb Phalke award** for 2020, the **highest recognition in the field of Indian cinema**, Union information and broadcasting Minister Anurag Thakur said on 27 September 2022. Parekh, 79, will receive the award from President Droupadi Murmu at the **68th National Film Awards** on 30 September 2022.

What

1. **Parekh**, a **much-celebrated actor** whose career spans nearly five decades is **only the seventh female actor** to be awarded the top honour.

2. Known for **starring in over 95 films** including "Dil Deke Dekho", "Kati Patang", "Teesri Manzil", "Baharon Ke Sapne", "Pyar Ka Mausam", and "Caravan", Parekh

Flashback

1. **Instituted in 1969**, the **Dadasaheb Phalke Award** commemorated Phalke's contribution to Indian cinema and was **first presented to Devika Rani**.

2. Last year, south superstar **Rajinikanth received the 2019 Dadasaheb Phalke Award**.

3. Previously, veteran megastars such as **Amitabh Bachchan** and **Vinod Khanna** have also received the honour in 2018 and 2017, respectively.

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began as a child artist with 'Aasmaan' in 1952.

3. She also **turned director and producer** with the acclaimed TV drama 'Kora Kagaz' in the late 1990s and became the **first women to head** the **Central Board of Film Certification (CBFC)** from 1998-2001.

4. Parekh was conferred the **Padma Shri in 1992**.

SUPREME COURT'S ABORTION RULING

The **Supreme Court** in a significant judgment on 29 September 2022 said it is **unconstitutional to distinguish between married and unmarried women** for allowing **termination of pregnancy** on certain exceptional grounds when the foetus is **between 20-24 weeks**. The decision follows an interim order in July by which the court had allowed a **25-year-old woman to terminate her pregnancy**.

What is the court's decision?

1. A **three-judge Bench** comprising **Justices D Y Chandrachud**, **A S Bopanna**, and **J B Pardiwala** framed the interpretation of **Rule 3B** of the **Medical Termination of Pregnancy Rules, 2003**, as per which only some categories of women are allowed to seek termination of pregnancy between 20-24 weeks under certain extraordinary circumstances.

2. The **challenge to the provision** was made in July by a 25-year-old unmarried woman who moved the court seeking an abortion after the Delhi High Court declined her plea.

3. The woman's case was that she wished to terminate her pregnancy as "**her partner had refused to marry her at the last stage**".

4. She also argued that the continuation of the pregnancy would involve a risk of grave and immense injury to her mental health.

5. However, the law allowed such change in circumstances only for "**marital**" relationships.

6. The Supreme Court, holding that the law had to be given a **purposive interpretation**, had allowed the petitioner to terminate her pregnancy in an interim order.

> **What does the law on abortion say?**
>
> 1. The **Medical Termination of Pregnancy Act** allows termination of pregnancy by a medical practitioner in **two stages**.
>
> 2. After a **crucial amendment in 2021**, for **pregnancies up to 20 weeks**, termination is allowed under the opinion of one registered medical practitioner.
>
> 3. For pregnancies between **20-24 weeks**, the Rules attached to the law prescribe certain criteria in terms of who can avail termination. It also requires the opinion of **two registered medical practitioners** in this case.

7. However, the **larger challenge to the law**, which would benefit other women as well, was kept pending.

INDIA'S NEW CHIEF OF DEFENCE STAFF

Gen **Anil Chauhan** on 30 September 2022 became **India's new Chief of Defence Staff** with a mandate to implement the ambitious **theaterisation plan** that seeks to ensure **tri-services synergy** and prepare the military for **future security challenges**.

What

1. **Gen Chauhan**, a former Eastern Army Commander, took charge as the country's senior-most military commander over nine months after **first Chief of Defence Staff (CDS)** Gen **Bipin Rawat** died in a helicopter crash in Tamil Nadu.

2. Gen Chauhan is the **first retired three-star officer** to return to service in **four-star rank**.

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3. **Sixty-one-year-old Chauhan** will also function as Secretary in the **Department of Military Affairs**.

4. He retired from service on 31 May 2021 when he was serving as the **Eastern Army Commander**.

5. After his retirement, he was serving as the military adviser to the **National Security Council Secretariat (NSCS)** headed by National Security Adviser (NSA) Ajit Doval.

6. Born on 18 May 1961, **Gen Chauhan** was commissioned into the **11 Gorkha Rifles** of the **Indian Army in 1981**.

7. As CDS, Gen Chauhan's primary task will be to implement the **theaterisation model** to bring in tri-services synergy by rolling out integrated military commands.

What is theaterisation model

1. As per the **theaterisation plan**, each of the **theatre commands** will have units of the **Army, the Navy and the Air Force** and all of them will work as a **single entity** looking after security challenges in a specified geographical territory under an operational commander.

2. At present, the three forces have a total of **17 commands**. Initially, a plan was firmed up for the creation of an **Air Defence Command** and **Maritime Theatre Command**.

3. The **Indian Air Force** has some reservations about the **proposed theatre commands**.

FACT TO REMEMBER:

1. **WORLD'S FIRST EVER CHEETAHS RELOCATED IN INDIA**
2. **THE DOT ISSUED DRAFT TELECOM BILL**
3. **PFI DECLARED 'TERRORIST ORGANISATION'**
4. **101ST COUNTRY TO RATIFY ISA AGREEMENT**
5. **I2U2 GROUP MEETING HELD**
6. **NATIONAL LOGISTICS POLICY LAUNCHED**
7. **RBI INTRODUCED UPI LITE**
8. **NASA'S DART SUCCESSFUL TESTED**
9. **INDIA CLIMBS SIX NOTCHES IN GII 2022**
10. **WORLD'S FIRST CLONED WILD ARCTIC WOLF 'MAYA'**

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