

# My Notes....

## NATIONAL

### WOMEN GET COMMAND ROLES IN THE INDIAN ARMY

As many as **108 women officers in the Army** are **cleared** for the rank of **Colonel (selection grade)** on 22 January 2023 by a **special selection board**, which will make them **eligible to command units and troops** in their respective arms and services for the **first time**. A **total of 244 women officers** are being considered **for promotion against the vacancies** — from the **batch of 1992 to 2006** — in arms and services

#### Why is this significant?

1. Most importantly, **it grants women officers' parity with their male counterparts.**
2. Earlier, with a **limited period career in the force**, there were **no promotion avenues for women officers** to become a Colonel and command a unit like male Army officers.
3. **It is not that women officers did not reach the rank of Colonel** or beyond in the past, but they were only in two branches — the **Judge Advocate General (JAG) branch** and the **Army Education Corps** — where they were granted permanent commission in 2008.
4. However, these were staff appointments — which are **more administrative in nature** — and **not purely command appointments** in which an officer commands troops on ground.
5. The **Supreme Court's order to grant permanent commission to women Army officers in February 2020** opened the doors for promotion to women officers across all streams of the Army, **except pure combat arms.**

#### What did the Supreme Court order in 2020?

1. **In 2019, the Army changed its rules allowing SSC women officers to opt for permanent commission** who would have otherwise retired after 14 years of service. However, **this was not retrospective**, and **applied only to the batches of women officers starting their career in the Army in 2020.**
2. With the **landmark Supreme Court judgment of February 2020**, permanent commission was granted to women officers **with retrospective effect.**
3. All major countries including the **United States, United Kingdom, Russia, and Israel** allow women in **command positions of their national armed forces.**

### INDIA ENTRY FOR UNESCO WORLD HERITAGE TAG

**Assam's Charaideo Moidams, or royal burial mounds, are India's only entry to UNESCO** for recognition as a **World Heritage site in the cultural category** in 2023-24. **Charaideo Moidams are mounds** containing the **remains of the royalty of the Ahom dynasty** that ruled present-day Assam for 600 years — from the **13th century to the 19th century.**

#### What are Moidams?

1. The **Moidams contain the remains of Ahom dynasty royalty.** Previously, the Ahoms were buried, but after the 18th century, **they adopted the Hindu mode of cremation, and bones and ashes were enclosed in a "moidam"** which is an earthen pyramid. These moidams are commonly known as the **pyramids of Assam.**
2. **386 Moidams** have been **explored so far, 90 royal burials at Charaideo** are the best preserved, representative, and **most complete examples of this tradition.**

3. **Charaideo**, or the “**shining town on a hill top**”, was the **first capital established by King Chaolung Sukapha**, the **founder of the dynasty**, in **1229 CE**.
4. Through the 600 years of the Ahom rule, the capital was shifted several times. Yet, **Charaideo remained the symbolic centre of power**.

#### Who were the Ahoms?

1. The **Ahoms** reportedly represented a time when the “**Assamese race was united and able to fight an alien, formidable force such as the Mughals**”.
2. **The Ahoms**, who were **non-Hindus**, adopted the **local religion, Hinduism**, during the **reign of Sudangpha (1397-1407)**.
3. It was the **first time** that Hinduism, which was the **predominant religion outside the Ahom realm**, penetrated into it right at the very top.
4. Hindu rituals, including **worship of Laxmi-Narayan Shaligram** in addition to the **Shan idol Somdeo**, began to be performed at the royal palace.

## ASER 2022

According to the latest Annual Status of Education Report (**ASER**), the **spike in dropout rate** after the **outbreak of the Covid-19 pandemic** was “temporary” in nature as enrolment numbers, across age groups, **touched a record high in 2022**, reaching the **highest level since** the introduction of the **Right to Education Act in 2009**.

### More about ASER 2022

1. **Pre-COVID, the last national ASER rural field survey** was conducted in 2018. That year, **the all-India enrolment figure** for the **age group 6 to 14 was 97.2 per cent**.
2. The **2022 data shows** that this number has increased to 98.4 per cent,” said the CEO of **Pratham Foundation which led the survey**.

### Effect of pandemic

1. The **pandemic had triggered** alarm bells on school enrollment, with **ASER 2020 and 2021** reports capturing a fall in the proportion of children in schools in **the 6-14 age groups**.
2. The **out of school numbers rose** from 2.8 per cent in 2018 to 4.6 per cent in 2020, a level at which it **remained in 2021** as well.

### After pandemic results:

1. **ASER 2022, which covered seven lakh children** across 616 districts and was conducted by 27,536 volunteers, shows that the **proportion of out of school children is down to 1.6%**.
2. The **ASER report also highlights another trend** that found reflection in other government reports such as **the Unified District Information System for Education Plus data** which came out last year.

#### What led to this more enrolment in government than private?

1. It is **due to uncertainty of income and closure** of budget private schools in rural areas.
2. If **family income goes down or becomes more uncertain**, it is likely that **parents may not be able to afford private school fees**. Hence, they are likely to pull their children out of private schools and put them in government schools.
3. In rural areas, **most private schools are of the low cost or budget variety**, many of which had to shut down during COVID because it was not economically viable to retain the staff.

### Enrolment in government schools has increased:

1. ASER 2022 states that for **the country as a whole, the percentage of all children aged 11 to 14 who are enrolled in government schools** has risen from 65 per cent in 2018 to 71.7 per cent in 2022.
2. **According to the UDISE+ data** for 2021-22, between 2020 and 2021, enrollment in government schools increased by 83.35 lakh while in private schools it dipped by 68.85 lakh.

### NEW SUPREME COURT ORDER FOR EUTHANASIA

On 24 January 2023, a **five-judge Bench of the Supreme Court** headed by **Justice K M Joseph** agreed to significantly **ease the procedure for passive euthanasia** in the country by altering the **existing guidelines for 'living wills'**, as laid down in its **2018 judgment in Common Cause vs. Union of India & Anr**, which allowed passive euthanasia.

#### What is euthanasia and living will?

1. **Euthanasia** refers to the **practice of an individual deliberately ending their life**, oftentimes to get relief from an **incurable condition**, or **intolerable pain and suffering**.
2. Euthanasia, which can be administered **only by a physician**, can be either **'active' or 'passive'**.
3. **Active euthanasia** involves an **active intervention to end a person's life with substances or external force**, such as administering a **lethal injection**. **Passive euthanasia** refers to withdrawing life support or treatment that is essential to keep a terminally ill person alive.
4. **Passive euthanasia** was **legalised in India by the Supreme Court in 2018**, contingent upon the person having a **'living will'** or a written document that specifies what actions should be taken if the person is unable to make their own medical decisions in the future.
5. **In case a person does not have a living will**, members of their family can make a plea before the High Court to seek permission for **passive euthanasia**.

#### What did the SC rule in 2018?

1. The **Supreme Court allowed passive euthanasia** while recognising the living wills of **terminally-ill patients** who could go into a **permanent vegetative state**, and issued guidelines regulating this procedure.
2. A **five-judge Constitution Bench** headed by then Chief Justice of India (CJI) Dipak Misra said that **the guidelines would be in force until Parliament passed legislation** on this.
3. However, this has not happened, and the absence of a law on this subject has rendered the **2018**

#### Different countries, different laws

1. **NETHERLANDS, LUXEMBOURG, BELGIUM** allowed both **euthanasia and assisted suicide** for anyone who faces **"unbearable suffering"** that has no chance of improvement.
2. **SWITZERLAND bans euthanasia** but **allows assisted dying** in the presence of a doctor or physician.
3. **CANADA** had announced that **euthanasia and assisted dying would be allowed for mentally ill patients by March 2023**; however, the decision has been widely criticised, and the move may be delayed.
4. **UNITED STATES** has different laws in different states. **Euthanasia** is allowed in some states like Washington, Oregon, and Montana.
5. **UNITED KINGDOM** considers **it illegal and equivalent to manslaughter**.

**judgment** the last conclusive set of directions on euthanasia.

4. The guidelines pertained to questions such as **who would execute the living will**, and the process by which approval could be granted by the medical board.
5. We declare that an **adult human being having mental capacity** to take an informed decision has right to refuse medical treatment including withdrawal from **life-saving devices**, the court said in the 2018 ruling.

## OBC PANEL GETS 14TH EXTENSION

The **Justice G. Rohini-led commission** for the **sub-categorisation of other backward classes (OBCs)** has now been given **yet another extension** in its tenure by the President, according to a gazette notification issued by the Union Ministry of Social Justice and Empowerment.

### More about the extension

1. This is the **14th extension in tenure** that the commission has been given. The commission, **formed in October 2017**, was **initially given 12 weeks to finish the task of sub-categorising** the nearly 3,000 castes within the OBC umbrella and recommend division of the **27% OBC quota** among them equitably.
2. Initially, the government cited **more time required by the panel to gather information** and data and then it cited the pandemic.
3. As part of its work, the commission had identified **dominant caste groups** among all OBC communities in the Central list, finding that a small group of dominant OBC communities were crowding out a **large number of communities from the 27% OBC quota**.
4. Consequently, the commission decided **to divide all OBC communities into four broad categories**, with the largest share of the quota pie going to the group that has **historically been deprived of OBC quota** as a result of being pushed out by dominant OBC groups.
5. The fresh extension comes as the Bihar government is in the middle of its much-anticipated **caste-based survey** in the State and the Uttar Pradesh government is in the process of conducting a fresh survey to assess the need for OBC reservation in its local body elections, with other States like **Madhya Pradesh and Maharashtra** also looking to form panels to implement OBC reservation in local body polls.
6. The last time a **country-wide survey** was conducted to enumerate the number of castes and their population was in 2011 as part of the **Socio-Economic Caste Census**. However, data from this were never made public.

## INTERNATIONAL

### INDIA ISSUED NOTICE TO PAKISTAN ON THE IWT

**New Delhi** has issued **notice to Islamabad** seeking modification of the more than six-decade-old **Indus Waters Treaty (IWT)** in view of Pakistan's "**intransigence**" in implementing it, government sources said on 27 January 2023. The notice, sent on 25 January through **the Commissioner for Indus Waters**, will open the process of making changes to the treaty, the sources said.

#### What is the Indus Waters Treaty?

1. The **IWT was signed on 19 September 1960**, by Prime Minister Jawaharlal Nehru and Pakistan's President Mohammed Ayub Khan in Karachi after **nine years of World Bank-brokered negotiations** between India and Pakistan.
2. The treaty defines the **water-sharing arrangement for six rivers** of the **Indus basin** that flow through both India and Pakistan. It has **12 Articles** and **8 Annexures** (from A to H).

3. As per the treaty's provisions, India can make **"unrestricted use"** of **all the water of the "Eastern Rivers" — Sutlej, Beas, and Ravi** — while **Pakistan shall get water from the "Western Rivers", Indus, Jhelum, and Chenab.**
4. **All the waters of the Eastern Rivers** shall be available for the **unrestricted use of India**, except as otherwise expressly provided in this Article, states **Article II (1) of the treaty.**
5. The **Article III (1)** which has provisions related to the **Western Rivers**, states, **"Pakistan shall receive for unrestricted use all those waters of the Western Rivers which India is under obligation to let flow under the provisions of Paragraph (2)"**

#### What is this notice that India has sent?

1. **The notice for modification** was to provide Pakistan with an **opportunity to enter into intergovernmental negotiations within 90 days** to rectify the **material breach of IWT.**
2. This process would also update the IWT to incorporate the lessons learned over the **last 62 years.**
3. India has issued the notice to Pakistan **under Article XII (3) of the IWT.**
4. The provisions of this Treaty may from time to time be **modified by a duly ratified treaty** concluded for that purpose between the two Governments.

## WORLD ECONOMIC FORUM'S 2023 EVENT ENDS

The **World Economic Forum's Annual Meeting 2023**, held in the **Swiss town of Davos**, ended 20 January 2023 – a conference that started in a world possibly fundamentally altered, but whose **processes and outcomes** remained pretty much business as usual. The theme this year was **'Cooperation in a Fragmented World'**.

### Key takeaways from WEF Davos 2023

#### On the economy

1. **Most business leaders** were **upbeat about the economy**, with **US and the European Union (EU)** seemingly **beyond the risk of a recession now.**
2. China ending its **zero Covid curbs** and opening shop again added to the positive outlook.
3. However, **central banks of the major economies** cautioned that **concerns still remained**, and said they would keep interest rates high **to ensure inflation** is under check.
4. The richer nations look to focus inwards, **protecting their own workers, energy sufficiency, supply lines**, etc., concerns were raised that **this policy direction would hit developing economies.**

#### On Ukraine

1. **Ukraine kept up its demand for more military aid** to fight its war against Russia, and **more financial aid to rebuild after the war**, saying the **reconstruction fund commitments** should start coming in now and not after the war ends.
2. In his address, Zelenskyy made **an indirect criticism of the US and Germany** dithering over sending tanks to his country.

#### Climate

1. Everyone agreed upon the **need for green energy** and the **need for more money to flight climate change.**
2. The World Economic Forum, supported by more than 45 partners launched the **Giving to Amplify Earth Action (GAEA)**, a **global initiative to fund and grow new and existing public, private and philanthropic partnerships (PPPPs)** to help **unlock the \$3 trillion** of financing needed each year to reach **net zero, reverse nature loss and restore biodiversity** by 2050.

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3. Greta Thunberg and other activists organised a protest, with slogans such as “**There is no planet B**” and “**Fossil fuels have got to go**”. Pakistan brought up the issue of a **loss and damage fund** for the developing countries.

#### Projects launched

1. The Press Trust of India (PTI) reported that **more than 50 “high-impact initiatives”** was launched at the event.
2. **Maharashtra Institution for Transformation (MITRA)** signed a partnership with the forum on urban transformation to give the state government “**strategic and technical direction**”, while a **thematic centre on healthcare and life sciences** is to be set up in Telangana.
3. The **Coalition for Epidemic Preparedness and Innovations (CEPI)** aims to develop new vaccines for future pandemics.

#### VEER GUARDIAN 2023 CONCLUDE

The inaugural edition of the **16-day bilateral air exercise** between the **Indian Air Force** and the **Japan Air Self-Defence Force** has **concluded in Japan**. The exercise, ‘**Veer Guardian 2023**’, involved **precise planning** and **skilful execution** by both the air forces, the Indian Air Force said on 27 January 2023. The exercise concluded on 26 January 2023.

#### What

1. The **IAF and JASDF** engaged in **air combat manoeuvring, interception** and **air defence missions**, both in **visual** and **beyond visual range** settings.
2. Aircrew of the **two participating air forces** also flew in each other's fighter aircraft to gain a deeper understanding of each other's operating philosophies, the IAF said.
3. It said the JASDF participated in the exercise with its **F-2 and F-15 aircraft**, while the IAF contingent participated with the **Su-30 MKI aircraft**.
4. The IAF fighter contingent was complemented by **one IL-78 flight refuelling aircraft** and two **C-17 Globemaster strategic airlift** transport aircraft.
5. The exercise also **witnessed numerous ground interactions** between **IAF and JASDF** personnel wherein various aspects were discussed by both sides.
6. This enabled the **participating contingents** to obtain **an invaluable insight** into each other's best practices and learn from each **other's unique capabilities**.

#### NAVAL EXERCISE 'VARUNA' STARTS

The **21st edition** of the **bilateral naval exercise** between **India and France** commenced on the western seaboard on 16 November 2023, the Indian Navy said. **Initiated in 1993**, the exercise was christened ‘**Varuna**’ in 2001 and has become “a hallmark of **India-France strategic bilateral relationship**”.

#### More about the exercise

1. This edition of the exercise will witness participation of **indigenous guided missile stealth destroyer INS Chennai**, guided missile frigate **INS Teg**, maritime patrol aircraft **P-8I** and Dornier, **integral helicopters** and **MiG29K fighter aircraft**.
2. The French Navy will be represented by the aircraft carrier **Charles De Gaulle**, frigates **FS Forbin** and Provence, support vessel FS Marne and maritime patrol aircraft Atlantique, it said.
3. The exercise will be conducted **over five days from 16 to 20 January 2023** and will witness **advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment** and other maritime operations, it said.
4. Units of both navies will endeavour to **hone their war-fighting skills** in maritime theatre, **enhance their interoperability** to undertake **multi-discipline operations** in the

maritime domain and demonstrate their ability as an integrated force to promote **peace, security and stability** in the region.

5. Having grown in **scope and complexity over the years**, this exercise provides an opportunity to learn from each other's best practices.
6. The exercise facilitates **operational level interaction** between the two navies to **foster mutual cooperation** for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the **global maritime commons**.

## ECONOMY

### ECONOMIC SURVEY 2023

The **Economic Survey is a detailed report** of the state of the national economy in the financial year that is coming to a close. It is **prepared by the Economic Division of the Department of Economic Affairs (DEA)** under the guidance of the CEA. Once prepared, the Survey is approved by the Finance Minister. **The Chief Economic Adviser (CEA)** released the Economic Survey for the current financial year (2022-23).

#### What is the Economic Survey's significance?

1. It **comes just a day before the Budget**, the assessment and recommendations carried in the survey are not binding on the Budget.
2. The survey **remains the most authoritative and comprehensive analysis of the economy** that is conducted from within the Union government.
3. Its **observations and details provide** an official framework for analysing the Indian economy.

#### Key takeaways:

1. The latest **Economic Survey has laid out** not just the growth forecast for the current financial year (2022-23) but also **commented on the growth outlook** in the coming financial year (2023-24).
2. It has also **shared its assessment of the inflation trajectory** and the unemployment rate in the country.

#### GDP growth in the current financial year:

1. The **Survey states that India's growth estimate** for FY23 is higher than for almost all major economies.
2. In fact, **the Survey pointed out** that India's growth is "even slightly above the average growth of the **Indian economy in the decade** leading up to the pandemic".

#### Inflation trajectory:

1. The **RBI has projected headline inflation** at 6.8 per cent in FY23. This is outside the **RBI's comfort zone**, which ranges between 2 per cent and 6 per cent.
2. **High inflation is seen as** one big factor that is holding back the demand among Indian consumers.

#### Outlook for 2023-24

1. The **Survey projects a baseline GDP growth** of 6.5 per cent in real terms in FY24. The **projection is broadly comparable** to the estimates provided by multilateral agencies such as the World Bank, the IMF, and the ADB and by RBI, domestically.
2. A **key downside risk is to the external sector** is "strong domestic demand amidst **high commodity prices** will raise India's total import bill and contribute to unfavourable developments in the current account balance.
3. These may be **exacerbated by plateauing export growth** on account of slackening global demand. Should **the current account deficit widen further**, the currency may come under depreciation pressure.

### Unemployment:

1. The **Survey states that employment** levels have risen in the current financial year”.
2. It **states that “Job creation appears to have moved** into a higher orbit with the initial surge in exports, a strong release of the “pent-up” demand, and a swift rollout of the capex.”
3. It **points to the Periodic Labour Force Survey (PLFS)**, which showed that **the urban unemployment rate** for people aged 15 years and above declined from 9.8 per cent in the quarter ending September 2021 to 7.2 per cent one year later.

### INDIA'S FIRST-EVER SGRBS AUCTION

The **Reserve Bank of India (RBI)** auctioned **maiden sovereign green bonds (SGrBs)** worth Rs 8,000 crore on 25 January 2023. This is **part of the Rs 16,000 crore Sovereign Green Bond auction** that the RBI will conduct in the current financial year. The **second green bond auction** will be conducted on 9 February 2023.

#### Why are these bonds important?

1. Over the last few years, **Green Bonds** have emerged as an **important financial instrument** to deal with the **threats of climate change and related challenges**.
2. According to the **International Finance Corporation (IFC)**, a **World Bank Group’s institution**, climate change threatens communities and economies, and it poses risks for **agriculture, food, and water supplies**.
3. A **lot of financing** is needed to address these challenges. **It’s critical to connect environmental projects** with capital markets and investors and channel capital towards sustainable development – and **Green Bonds are a way to make that connection**.

#### How beneficial is it for investors?

1. **Green Bonds** offer investors a **platform to engage in good practices, influencing the business strategy** of bond issuers.
2. They provide a means **to hedge against climate change risks** while achieving at least similar, if not better, returns on their investment.
3. In this way, **the growth in Green Bonds and green finance** also indirectly works to **disincentivise high carbon-emitting projects**, as per the IFC.

#### What are Green Bonds?

1. **Green bonds** are **bonds issued by any sovereign entity, inter-governmental groups** or alliances and **corporates** with the aim that the proceeds of the bonds are **utilised for projects classified as environmentally sustainable**.
2. The framework for the **sovereign green bond** was issued by the government on 9 November 2022.
3. The RBI is auctioning **two green bonds with tenures of 5 and 10 years**, worth Rs 4,000 crore each. The two bonds auctioned today are **New GOI SGrB 2028** and **New GOI SGrB 2033**.

#### Where will the proceeds go?

1. The government will use **the proceeds raised from SGrBs** to finance or refinance expenditure (in parts or whole) for various **green projects**, including in **renewable energy, clean transportation, energy efficiency, climate change adaptation, sustainable water and waste management, pollution and prevention control and green buildings**.
2. In renewable energy, investments will be made in **solar, wind, biomass and hydropower energy projects**.



## PAYTM BANK GETS RBI NOD TO OPERATE AS BBPOU

**Paytm Payments Bank** on 16 January 2023 said it has **received final approval** from the **Reserve Bank of India** to operate as a **Bharat Bill Payment Operating Unit (BBPOU)**. So far, **Paytm Payments Bank Ltd (PPBL)** has been undertaking this activity under **in-principle authorisation from RBI**.

### What

1. Under **Bharat Bill Payment System (BBPS)**, a **BBPOU** is allowed to **facilitate bill payment services** of **electricity, phone, DTH, water, gas insurance**, loan repayments, **FASTag recharge**, education fees, credit card bill and municipal taxes.
2. **BBPS** is owned by the **National Payments Corporation of India**.
3. PPBL has got the final approval from RBI to operate as Bharat Bill Payment Operating Unit (BBPOU) under the **Payment and Settlement Systems Act, 2007**.
4. As an entity under **Bharat Bill Payment System (BBPS)**, PPBL has got the final authorization to conduct bill payment and aggregation business as a BBPOU. Under RBI's guidance, **PPBL will display all agent institutions onboard** on its website.

## SCIENCE AND TECHNOLOGY

### DRDO DEVELOPS UFRA FOR SPACE RADAR

In a key development, **Electronics and Radar Development Establishment (LRDE)**, a Bengaluru lab of the **Defence Research and Development Organisation (DRDO)**, has developed a **major subsystem for space radar**, which holds significant potential not only for the Indian Space Research Organisation (Isro), but also for the military.

#### More about Space radar

1. **LRDE** has been involved in the development of **space-borne imaging radar** — mainly consisting of **electronic radar subsystems** and **antenna deployment mechanisms** — for installation on satellites has completed the development of an **UnFurlable Reflector Antenna (UFRA)**.
2. **UFRA is one of the major subsystems of a radar**, LRDE said, adding that radars for space applications require an antenna to be stowed in compact volume during launch and then deployed in the required shape **once the satellite is in the required orbit**.
3. To meet this requirement, **LRDE has developed the UFRA system** which consists of a **rim truss-based deployable mechanism, primary arm, reflector mesh, tension ties, nets, and motor**. A cable is routed through the diagonal members of the rim truss elements.
4. The **UFRA** was realised and the deployment of the antenna to the required height was achieved successfully by an **unfurlable deployment mechanism**. The design can be adapted **to realise any size of UFRA**.
5. The antenna, sources said, is likely to be part of **space-based military radar**, which LRDE is working on. The specific details about the radar cannot be divulged at this moment, but **the development of UFRA is a key milestone** in the development of the radar.
6. **LRDE is a key DRDO lab with a mission** to design and develop state-of-the-art radar systems meeting current and futuristic requirements of the tri-services, paramilitary forces, intelligence and strategic missions.
7. It is also tasked with **establishing indigenous production capability** through industry partnership to achieve total self-reliance in the field radars besides promoting in-house research, engaging academia and industry to build competence towards creating a centre of excellence in the field of **radar technologies**.

## INS VAGIR COMMISSIONED INTO THE INDIAN NAVY

The **Indian Navy** on 23 January 2023 commissioned the **fifth diesel-electric Kalvari-class submarine Vagir**. It is among the **six submarines** being built by the **Mazagon Dock Shipbuilders Limited (MDL)**, Mumbai, in collaboration with the **French M/s Naval Group** under **Project 75**. Four of these submarines have already been commissioned into the Navy and a **sixth will be commissioned next year**.

### Kalvari-class background

1. **Vagir** is a **Kalvari-class submarine**, which includes **other vessels**, such as the **INS Kalvari**, **INS Khanderi**, **INS Karanj**, **INS Vela** and **INS Vagsheer**.
2. Of these, **Kalvari and Khanderi** were **commissioned in 2017 and 2019**, and **Vela and Karanj** were **inducted in 2021**.
3. **Vagir** has now been commissioned and **Vagsheer was launched in 2022** and is expected to be inducted next year.
4. The submarines in the **current Kalvari-class** take their names from erstwhile decommissioned classes of submarines named **Kalvari**, which included **Kalvari**, **Khanderi**, **Karanj** and **Vela** classes — comprising **Vela**, **Vagir**, **Vagshir**.
5. The now-decommissioned **Kalvari and Vela** classes were **one of the earliest submarines** in the post-independence Indian Navy, which belonged to Soviet origin Foxtrot class of vessels.

### What are the specifications of Vagir?

1. The latest submarine gets its name from the **erstwhile Vagir**, a submarine which **served the Navy between 1973 and 2001** and undertook numerous operational missions.
2. The **construction of the new Vagir began in 2009** and it took its maiden sea sortie in February last year. Also known as **Sand Shark**, the submarine was delivered to the Indian Navy in December 2022.
3. **Vagir represents stealth and fearlessness**, as it comes with features like an **advanced acoustic absorption technique**.
4. **Vagir will boost the Indian Navy's capability** to further **India's maritime interests** and is capable of **undertaking diverse missions** including **anti-surface warfare**, **anti-submarine warfare**, **intelligence gathering**, **mine laying** and **surveillance missions**, the government release said.

## 'IMMUNE IMPRINTING' MAKING BIVALENT BOOSTERS LESS EFFECTIVE

Countries like the **UK** and the **US** have rolled out **variant-specific** or **bivalent boosters**, in the hope that they **would provide better protection against infection** in comparison to the original vaccine. However, a slew of recent studies has shown that a phenomenon in our bodies, called **immune imprinting**, might be making these new boosters **far less effective than expected**.

### What is immune imprinting?

1. **Immune imprinting** is a **tendency of the body to repeat its immune response** based on the **first variant it encountered** — through **infection or vaccination** — when it comes across a newer or **slightly different variant of the same pathogen**.
2. The **phenomenon was first observed in 1947**, when scientists noted that **“people who had previously had flu, and were then vaccinated against the current circulating strain, produced antibodies against the first strain they had encountered”**, according to a report published in the journal Nature.
3. At the time, it was termed the **‘original antigenic sin’** but today, it's commonly known as **imprinting**.

4. Over the years, scientists have realised that **imprinting acts as a database for the immune system**, helping it **put up a better response to repeat infections**.
5. After our body is **exposed to a virus for the first time**, it produces **memory B cells** that circulate in the bloodstream and **quickly produce antibodies** whenever the same strain of the virus infects again.
6. The problem occurs **when a similar, not identical, variant of the virus** is encountered by the body.
7. In such cases, **the immune system**, rather than **generating new B cells**, activates memory B cells, which in turn produce “**antibodies that bind to features found in both the old and new strains**”, known as **cross-reactive antibodies**”, the Nature report said.
8. Although these **cross-reactive antibodies do offer some protection** against the new strain, they aren’t as effective as the ones produced by the B cells when the body first came across the original virus.

## INDIA’S BHAROS REPLACE ANDROID, IOS

**BharOS** is being pitched as India’s answer to the **Google-owned Android** and **Apple’s iOS**, the two most dominant mobile operating systems in the world. **BharOS’s endorsement** by the government **not only signals India’s ambitions** to have a localised competitor to **Silicon Valley operating systems**, but also ensures that competitors have a fair chance to succeed against these heavyweights.

### Key aspects about BharOS

1. **BharOS** is actually developed from the **source code of Google's Android Operating System Package (AOSP)**. But, it does not come **pre-loaded with apps**, thus freeing more space in the phone and consumers can install apps that they really want to use, which is not the case with the Android and iOS platform
2. **BharOS software can be side-loaded** to most of the Android phones available in the market, and for obvious reasons, it **cannot be installed on Apple iPhones**
3. **BharOS can run most of Android apps**, but **cannot run iOS apps**. Users can side-load any **APKs (Android Package Kits)** of Android apps.
4. **BharOS offers more control to users over the permissions** that apps have on the device. He/she can choose **to only allow apps** that they trust to access certain features or data on their device.
5. **JandKops developers claim that phones with BharOS** can be updated to the new version with the **latest security patch via Over-The-Air**, like any other smartphones in the market
6. Unlike Google Play Store (for Android) and Apple App Store (for iOS devices), **BharOS-based Phone users can access trust-worthy apps** from organization-specific **Private App Store Services (PASS)**. The latter offers access to a curated list of apps that have been thoroughly vetted and have met **certain security and privacy standards of organisations**.
7. For now **BharOS is not available to the public just yet**. As noted above, private organisations, which emphasise security and user privacy for communication purpose, can approach JandKops to get access to BharOS
8. JandKops is incubated by **IIT Madras Pravartak Technologies Foundation**. It is backed by the **Department of Science and Technology (DST)**, Government of India, under its **National Mission on Interdisciplinary Cyber-Physical Systems (NMICPS)**.

## INDIA'S FIRST NASAL COVID VACCINE

On the **occasion of Republic Day, India** got its **first-ever intranasal vaccine iNCOVACC**, which was manufactured by **Hyderabad-based Bharat Biotech**. The vaccine, dubbed "game changer" by some experts, was launched by Union health minister Mansukh Mandaviya and science and technology minister Jitendra Singh on 26 January 2023.

### More about vaccine

1. The **nasal vaccine — BBV154** — had received the **Drugs Controller General of India's (DCGI)** approval in November for restricted emergency use among adults as a heterologous booster dose.
2. The dose will be priced at **Rs 800 per dose** for the private markets and **Rs 325 per dose** for central and state governments.
3. **iNCOVACC is a recombinant replication deficient adenovirus vectored vaccine** with a pre-fusion stabilised spike protein.
4. This vaccine candidate was evaluated in **phase I, II and III clinical trials** with successful results.
5. The **vectored intranasal delivery platform** gives us the capability for **rapid product development**, scale-up and easy and **painless immunization** during public health emergencies and pandemics.

### How does iNCOVACC work?

1. **iNCOVACC is a recombinant replication-deficient adenovirus vectored vaccine** with a **pre-fusion-stabilized SARS-CoV-2 spike protein**.
2. **iNCOVACC** has been specifically formulated to allow **intranasal delivery through nasal drops**.
3. The nasal delivery system has been designed and developed to be **cost-effective** in low- and middle-income countries.

## MISCELLANEOUS

### PADMA AWARDS 2023 ANNOUNCED

On 25 January, the government announced **one Padma Vibhushan** and **25 Padma Shri awards**. The **Padma Vibhushan** will be awarded posthumously in the field of Medicine (Pediatrics) to **Dilip Mahalanabis**, who **came up with ORS**. The **Padma Awards** are **India's highest civilian honours** after the **Bharat Ratna**, seeking to "**recognize achievements in all fields of activities or disciplines** where an element of public service is involved," the Padma Awards website said.

### The history of Padma Awards

1. **Two awards**, the **Bharat Ratna** and **Padma Vibhushan** were **first instituted in 1954** as India's highest civilian honours.
2. The latter had **three classes: Pahela Varg (1st Class), Dusra Varg (Second Class) and Tisra Varg (Third Class)**. In 1955, these were subsequently named as **Padma Vibhushan, Padma Bhushan** and **Padma Shri** respectively.
3. While the **Bharat Ratna is treated as an exceptional award** with **only 45 Bharat Ratnas** being handed over till date, **the Padma Awards** are **annually conferred to deserving civilians**.
4. Except for **interruptions in 1978, 1979** and **between 1993 and 1997**, every year the names of the recipients are announced on Republic Day eve.
5. Typically, **not more than 120 awards** are given in a year, but this **does not include posthumous awards** or **awards given to NRIs and foreigners**.
6. While the award is normally not conferred posthumously, the Government can consider **posthumous felicitation** in exceptional circumstances.

[www.ksgindia.com](http://www.ksgindia.com)

7. The **first ever Padma Vibhushan awardees in 1954** were scientist **Satyendra Nath Bose**, artist **Nandalal Bose**, educationist and politician **Zakir Hussain**, social worker and politician **Balasaheb Gangadhar Kher**, and diplomat and academic V.K. Krishna Menon. The **first ever non-Indian Padma Vibhushan awardee** was Bhutanese king **Jigme Dorji Wangchuk**, who also received the award in 1954.

#### What the Padma Awards entail

1. The awards are presented by the **President of India**, typically at the **Rashtrapati Bhavan**.
2. The **awardees do not get any cash reward** but a certificate signed by the President apart from a medallion which they can wear at public and government functions.
3. The awards are, however, **not a conferment of title** and the **awardees are expected** to not use them as prefix or suffix to their names.
4. While a **Padma awardee can be given a higher award** (i.e. a **Padma Shri awardee can receive a Padma Bhushan or Vibhushan**), this can only happen after five years of the conferment of the previous award.
5. The awards are given in **certain select categories** which include **Art, Social Work, Public Affairs, Science & Engineering, Trade & Industry**, Medicine, Literature & Education, Civil Service and Sports. Awards are also given for propagation of Indian culture, protection of human rights, **wildlife protection** among others.

## MUGHAL GARDENS RENAMED

The **iconic Mughal Gardens at the Rashtrapati Bhavan** (President's House) in Delhi have been renamed. "**The collective identity** of all the gardens at Rashtrapati Bhavan will be '**Amrit Udyan**'. Earlier there were **descriptive identities**, now a new identity has been given to the gardens.

### A long history of Mughal Gardens in India

1. The **Mughals were known to appreciate gardens**. In **Babur Nama**, Babur says that his favourite kind of garden is the **Persian charbagh style** (literally, four gardens).
2. The **charbagh structure** was intended to create a representation of an **earthly utopia – jannat** – in which humans co-exist in perfect harmony with all elements of nature.
3. Defined by **its rectilinear layouts**, divided in **four equal sections**, these gardens can be found across lands previously ruled by the Mughals.
4. From the gardens surrounding **Humayun's Tomb in Delhi** to the **Nishat Bagh in Srinagar**, all are built in this style – giving them the moniker of Mughal Gardens.
5. A **defining feature of these gardens** is the **use of waterways**, often to demarcate the various **quadrants of the garden**.
6. These were not only crucial to maintain the flora of the garden, they also were an important part of its aesthetic. Fountains were often built, symbolising the "**cycle of life**."

### The gardens at the new Viceroy's house

1. In 1911, the British decided to shift the **Indian capital from Calcutta to Delhi**. This would be a mammoth exercise, involving construction of a whole new city – **New Delhi** – that would be built as the **British Crown's seat of power** in its most valuable colony.
2. **About 4,000 acres of land** was acquired to construct the **Viceroy's House** with **Sir Edwin Lutyens** being given the task of designing the building on **Raisina Hill**.
3. Lutyens' designs combined elements of **classical European architecture** with Indian styles, producing a unique aesthetic that defines **Lutyens' Delhi** till date.

4. Crucial in the design of the **Viceroy's House was a large garden in its rear**. While initial plans involved creating a garden with **traditional British sensibilities** in mind, **Lady Hardinge**, the wife of the then Viceroy, urged planners to create a **Mughal-style garden**.
5. It is said that she was inspired by the book **Gardens of the Great Mughals (1913)** by Constance Villiers-Stuart as well as her visits to Mughal gardens in Lahore and Srinagar.

## CHINA'S POPULATION DROPS FOR FIRST TIME

China saw its population fall by roughly 850,000 last year – its first drop in six decades, bringing its population to around 1.41 billion at the end of 2022, the country's National Bureau of Statistics said. The government said on 17 January 2023 that **9.56 million people were born in China in 2022**, while **10.41 million people died**. The drop, the worst since 1961, also makes it more probable that **India will become the world's most populous nation** this year.

### India to become most populous in 2023

1. **Both India and China**, in the **20th century**, were similar in terms of **key indicators impacting population growth**, such as life expectancy (the number of years a person is expected to live on average), the **Crude Death Rate** (the number of deaths in a population per 1,000 people) and **Total Fertility Rate or TFR** (the number of children a woman, on average, is expected to bear in her lifetime).
2. **Mortality falls with increased education levels, public health and vaccination programmes**, access to food and medical care, and provision of safe drinking water and **sanitation facilities**. In both countries, this happened, resulting in a **net increase in population** for many decades.
3. The **replacement rate is the number of children a woman is to have in order to at least replace the present generation** in the future.
4. **China's TFR**, according to its 2020 Census, was **1.3 births per woman** — marginally up from the **1.2 in the 2010 and 2000 censuses**, but way **below the replacement rate of 2.1**.
5. While **TFR is gradually declining in India too**, more important is the working-age population. Its share in the **overall population crossed 50% only in 2007** and will peak at 57% towards the mid-2030s.
6. **India**, therefore, has a window of opportunity well into the 2040s for reaping its **"demographic dividend"**, like China did from the late 1980s to 2015, contingent upon the creation of meaningful employment opportunities for a young population.

### The impact of the One-Child Policy

1. One cause behind the fall in numbers in China is the **one-child policy** imposed **between 1980 and 2015**, limiting the number of children couples could have to one.
2. China has said that **the policy has helped prevent nearly 400 million births**, but as the proportion of those in the **working-age population began reducing**, the policy became a matter of concern.
3. The country's statistics bureau said the **working-age population between 16 and 59 years old totalled 875.56 million**, accounting for **62.0% of the national population**, while those aged 65 and older totalled 209.78 million, accounting for 14.9% of the total. Men outnumbered women by 722.06 million to 689.69 million, reflecting the sex-selective births that were carried out because of the preference for the male child.

### FACT TO REMEMBER:

1. **WOMEN GET COMMAND ROLES IN THE INDIAN ARMY**
2. **INDIA ENTRY FOR UNESCO WORLD HERITAGE TAG**
3. **INDIA ISSUED NOTICE TO PAKISTAN ON THE IWT**

4. WORLD ECONOMIC FORUM'S 2023 EVENT ENDS
5. ECONOMIC SURVEY 2023
6. INDIA'S FIRST-EVER SGRBS AUCTION
7. INS VAGIR COMMISSIONED INTO THE INDIAN NAVY
8. INDIA'S BHAROS REPLACE ANDROID, IOS
9. PADMA AWARDS 2023 ANNOUNCED
10. CHINA'S POPULATION DROPS FOR FIRST TIME

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**PREVIOUS YEAR QUESTION 2022**

**Q. System of Rice Intensification" of cultivation, in which alternate wetting and drying of rice fields is practiced, results in:**

1. Reduced seed requirement
2. Reduced methane production
3. Reduced electricity consumption

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Source; My Notes, January 1-15, 2022, page no. 10**