

WHAT IS BRAHMOS?

India is all set to begin the export of ground systems for the BrahMos supersonic cruise missiles to the Philippines.



It is a **supersonic cruise missile** that can be launched from land, sea, and air.

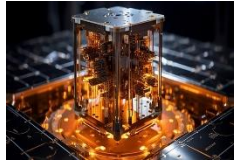
- It has been **developed by Brahmos Aerospace**, a **joint venture of India and Russia**.
- It is named after the rivers Brahmaputra (India) and Moskva (Russia).

Features:

- It is a **two-stage missile** with a **solid propellant** booster engine as its **first stage**, which **brings it to supersonic speed** and then gets separated. The **liquid ramjet, or second stage** then takes the missile closer to 3 Mach speed in the cruise phase.
- It is one of the fastest cruise missiles currently operationally deployed, with a **speed of Mach 2.8**, which is nearly three times more than the speed of sound.
- It has a **launch weight of 2,200-3,000 kg**.
- The extended-range variant of the missile can strike land and sea targets at a **maximum range of 400 to 500 kilometers** with supersonic speed all throughout the flight.
- It **operates on the "Fire and Forgets" principle**, adopting varieties of flights on its way to the target.
- Its cruising altitude could be up to 15 km, and its **terminal altitude is as low as 10 meters**.
- It carries a **conventional warhead** weighing 200 to 300 kg.
- It is equipped with **stealth technology** designed to make it less visible to radar and other detection methods.
- It has an **inertial navigation system (INS)** for use against ship targets, and an INS/Global Positioning System for use against land targets.

WHAT IS QUANTUM COMPUTING?

Researchers have unveiled a novel approach that integrates quantum computing with the study of living organisms.



About Quantum Computing:

- It is an **area of computer science** focused on the development of technologies **based on the principles of quantum theory**.
- **Quantum theory explains the behaviour of energy and material at the atomic and subatomic levels.**
- It is based **on the principles of the superposition of matter and quantum entanglement** and uses a different computation method from the traditional one.
- Quantum computers have the **capability to sift through huge numbers of possibilities and extract potential solutions to complex problems** and challenges.

How does it work?

- Where classical computers store information as bits with either 0s or 1s, **quantum computers use qubits.**
- While classical bits always represent either one or zero, a **qubit can be in a superposition of one and zero simultaneously** until its state is measured.
- In addition, the **states of multiple qubits can be entangled**, meaning that **they are linked quantum mechanically to each other.**
- Qubits can be made by manipulating atoms, electrically charged atoms called ions, or electrons, or by nanoengineering so-called artificial atoms, such as circuits of superconducting qubits, using a printing method called lithography.

What is Superposition and Entanglement?

- They are two features of quantum physics on which quantum computing is based.
- They empower quantum computers to handle operations at speeds exponentially higher than conventional computers and with much less energy consumption.

KASHI VISHWANATH-GYANVAPI MOSQUE MATTER: ASI REPORT SAYS TEMPLE EXISTED AT THE SITE OF GYANVAPI MOSQUE

Why in News?

- The Archaeological Survey of India (ASI) in its scientific survey report on the Gyanvapi mosque complex has concluded that “there existed a Hindu temple prior to the construction of the existing structure” at the site.

Background of the Kashi Vishwanath-Gyanvapi Mosque Matter:

- **How did it all begin?**
 - The legal tussle dates back to a **1991** petition filed in Varanasi district court, seeking the restoration of Gyanvapi land to the Kashi Vishwanath temple.
 - The claim was that the mosque was constructed under the orders of Aurangzeb, who **allegedly tore down a part of the temple in the 16th century**.
- **Case revived:**
 - In 2019, a petition was filed (in Varanasi district court) after the SC's **Babri Masjid-Ram Janmabhoomi dispute verdict**.
 - The court directed the **ASI to conduct a scientific survey**, sparking a series of legal actions and reactions.
 - **For example**, in 2021, the Allahabad HC put a halt to proceedings in the Varanasi court, emphasising **the Places of Worship Act 1991**.
 - The Act prevents changes in the religious character of a place of worship as of August 15, 1947.
- **Recent update:**
 - The ASI was tasked by the Varanasi district court in July 2023 to conduct a scientific survey of the mosque and ascertain if it was “constructed over a pre-existing structure of a Hindu temple”.
 - This faced a temporary pause from the SC and the ASI initiated the survey in August 2023.

Key Highlights of the ASI Report:

- **The pre-existing structure was probably destroyed in the 17th century, during the reign of Aurangzeb.**
 - A loose stone with an inscription engraved on it recorded the construction of the mosque during the reign of Mughal Emperor Aurangzeb between the years **1676 and 1677.**
 - According to **Maasir-i-Alamgiri** (1947) by Sir Jadunath Sarkar, the pre-existing structure was destroyed after Aurangzeb issued orders to the governors of all provinces to demolish the schools and temples of the infidels.
 - According to the Emperor's command his officers had **demolished the temple of Vishwanath at Kashi on September 2, 1669.**
- **Inscriptions in Devanagari, Grantha, Telugu and Kannada scripts with names of deities found.**
 - During the survey, a total of 34 inscriptions were recorded.
 - These are inscriptions on the stones of the pre-existing Hindu temples, which have been **re-used during the construction/ repair of the existing structure.**
 - The report added that names of deities like Janardhana (another name of Vishnu), Rudra (another name of Shiva), and "Umesvara" were found in the inscriptions.
 - Terms such as **Maha-muktimandapa** (while mukti means freedom, mandapa means platform) mentioned in three inscriptions are of great significance.
- **Parts of the pre-existing temple were mutilated for reuse.**
 - **Vyala** (a Hindu mythological creature) figures carved on either side of the lotus medallion were mutilated for reuse, and the area between the corners decorated with floral design after the stone mass was removed.
- **The central chamber and main entrance of the pre-existing structure are part of the existing structure.**
 - According to the report, the pre-existing temple had one big central chamber and at least one chamber to the north, south, east, and west respectively.
 - **The central chamber now forms the central hall of the existing structure.**

INDIA AND FRANCE DEEPEN TIES

Why in news?

- French President Emmanuel Macron visited India as the Chief Guest for the 75th Republic Day celebrations.
- During this visit, India and France made significant decisions with the primary focus on enhancing collaboration in the defence sector.

Indo-France Bilateral Relations:

- **Since the establishment of diplomatic ties in 1948**, India and France have enjoyed 75 years of close and friendly relations.
- **In 1998**, India and France elevated their diplomatic relationship to **Strategic Partnership** which completed 25 years in January, 2023.
- This Strategic Partnership, **first for France outside the EU**, has been instrumental in the comprehensive growth of India-France relationship.

Key Pillars of India-France Cooperation:

- **Defence Cooperation:** The Agreement on Defence Cooperation signed in 2006 and renewed for another 10 years in 2016 gives the framework for all defence cooperation activities between India and France.
- **Space Cooperation:** ISRO and the French Space Agency, CNES have been carrying on various joint research programmes and collaborating in satellite launches.
- **Civil Nuclear Cooperation:** An agreement on civil nuclear cooperation was signed between India and France in **2008**.
- **Economic Cooperation:** They have important bilateral investments and trade and commercial cooperation, particularly in sectors involving **IT corridors, smart-cities, railways, capital and trade exchanges, skill development, etc.**
- **Digital Cooperation:** India-France Roadmap on Cyber security and Digital Technologies was one of the outcomes of the visit of the PM of India to France in 2019.
- **Culture and Tourism Cooperation:** There are many Indo-French cultural associations which organise various events across France.

- **Marine and Maritime Cooperation:** Indo-French Maritime Cooperation is based on the India-France Roadmap on **Blue Economy and Ocean Governance** adopted in **2022**.
 - **Community in France:** The Indian community, including NRIs in mainland France number around 109,000, largely originating from French enclaves of **Puducherry, Karaikal, Yanam, Mahe and Chandernagore**.
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WHAT IS ARMADO?

The new Mahindra Armado recently made its first appearance at Republic Day Parade.



It is **India's first Armoured Light Specialist Vehicle (ALSV)**.

- It is a fully indigenous vehicle designed and built by the **Mahindra Defence Systems (MDS)** for the Indian armed forces.
 - It can be used in counter-terrorist and special forces operations. It can also be used by quick reaction teams, as a reconnaissance vehicle and for patrolling the borders.
 - **Features:**
 - It has a **seating capacity of six passengers**, including the driver, and can be configured to seat up to eight.
 - Above the standard **1,000 kg load capacity**, the ASLV can carry another 400 kg.
 - It gets ballistic protection up to the B7 level and STANAG level-2. This means that **its armour offers protection against armour-piercing rifles**.
 - Also, the ASLV gets **protection on all sides**(front, side and rear) **from ballistics** and explosives.
 - Powering the 4-wheeler is a 3.2-litre multi-fuel diesel engine that generates 216 hp of maximum power.
 - Armado takes just 12 seconds to accelerate from 0 to 60 kmph, and runs at a speed of more than 120 kmph.
 - It also gets a self-cleaning-type exhaust scavenging and air filtration system for extreme dusty climate, like deserts.
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PM YOUNG ACHIEVERS SCHOLARSHIP AWARD SCHEME (PM YASASVI)

A total of ₹32.44 Crore has been released for Pre-matric Scholarships and ₹387.27 Crore for Post-Matric Scholarships to States/Union Territories (UTs) under the PM YASASVI scheme in 2023.



About PM Young Achievers Scholarship Award Scheme (PM YASASVI):

- It is a scholarship scheme for **Other Backward Class (OBCs), Economically Backward Class (EBC), and Denotified Nomadic Tribes (DNT) students.**
- Under this scheme, students can avail of **Pre-Matric Scholarships from Classes 9 to 10 and Post-Matric Scholarships for their higher education** at the post-matriculation or post-secondary level.
- **Exceptional students** also have the opportunity to **receive scholarships for top-tier schools and colleges.**
- Additionally, **hostel facilities are provided for OBC students** through a construction scheme.

Eligibility:

- Other Backward Class (OBC), Economically Backward Classes (EBC), and **Denotified, Nomadic, and Semi-Nomadic Tribes (DNT)**
- **Parents or guardians annual income is not more than Rs. 2.50 Lakhs.**
- Studying in a Top Class School in Class 9 or 11.
- These scholarships shall be **available for studies in India only** and will be awarded by the Government of State/Union Territory to which the applicant actually belongs, i.e., permanently settled.
- **Entitlement: Upto Rs. 75,000 p.a. for Class 9/10, 1,25,000 p.a. for Class 11/12, covering the school tuition fee/hostel fee.**
- **Implementing Agency: Department of Social Justice and Empowerment, Ministry of Social Justice and Empowerment.**

ICJ ORDERS ISRAEL TO PREVENT GENOCIDAL ACTS IN GAZA

Why in news?

- The International Court of Justice (ICJ) ordered that Israel must take all measures within its power to prevent all acts within the scope of the Genocide Convention.
 - The court was ruling on the nine provisional measures requested by South Africa in its genocide claim against Israel.
- The court did not agree to South Africa's request for an immediate ceasefire in Gaza.
- However, it directed Israel to allow the entry of basic services and humanitarian assistance into the Palestinian enclave.

Genocide Convention

- **About**
 - The **Convention on the Prevention and Punishment of the Crime of Genocide** is an international human rights treaty that codified the crime of genocide for the first time.
 - This was the first human rights treaty adopted by the UN General Assembly on December 9, 1948, and has been in effect since January 12, 1951.

Genocide acts as per this convention

- The Convention defines genocide as five acts:
 - killing members of a group;
 - causing serious bodily or mental harm;
 - inflicting on the group conditions of life calculated to bring about their physical destruction;
 - imposing measures intended to prevent births within a group; and
 - forcibly transferring children of the group to another group — committed with intent to destroy, in whole or in part, a national, ethnic, racial, or religious group.

NILGIRI BIOSPHERE RESERVE (NBR)



Location:

It is located in the Nilgiri Mountains of the **Western Ghats**.

It encompasses parts of **Tamil Nadu, Kerala, and Karnataka**.

- It was the **first biosphere reserve in India**, established in 1986.
- The total area of the reserve is 5,520 sq. km. It is the **largest protected forest area in India**.
- The **Mudumalai Wildlife Sanctuary, Wyanaad Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, Mukurthi National Park, and Silent Valley** are the **protected areas present within this reserve**.
- **Vegetation:** It harbours a **wide spectrum** of ecosystem types, such as **tropical evergreen forests, Montane sholas and grasslands**, semi-evergreen forests, moist deciduous forests, dry deciduous forests, and thorn forests.
- **Climate:** The **annual rainfall** of the reserve ranges from **500 mm to 7000 mm**, with temperatures ranging from 0°C during the winter to 41°C during the summer.
- **Tribal Population:** Tribal groups like the **Todas, Kotas, Irullas, Kurumbas, Paniyas, Adiyans, Edanadan Chettis, Cholanaickens, Allar, Malayan, etc.**, are native to the reserve.
- It is **India's first biosphere reserve under UNESCO's Man and the Biosphere Programme**.
- **Flora:**
 - About 3,300 species of flowering plants can be seen here. Of the 3,300 species, 132 are endemic to the NBR.
 - Some of the plants entirely restricted to the NBR include species of Adenoon, Calacanthus, Baeolepis, Frerea, Jarodina, Wagatea, Poeciloneuron, etc.
- **Fauna:**
 - It includes the **largest known population** of two endangered animal species, namely the **Nilgiri Tahr and the Lion-tailed macaque** and the **largest South Indian population of elephant, tiger, gaur, sambar, and chital**.