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Daily Current Affairs Quiz 08 July 2026

Q1. The UNICORN mast is primarily designed to enhance which feature of naval platforms?

- (a) Cargo carrying capacity
- (b) Missile range
- (c) Stealth characteristics
- (d) Underwater endurance

Ans.(c)

Sol. The correct answer is (C) Stealth characteristics

Explanation:

- The UNICORN mast, formally known as the Unified Complex Radio Antenna, is a groundbreaking, integrated mast system designed to streamline a warship's upper structure. It merges multiple communication antennas, tactical data links, and radar elements that are traditionally scattered across the ship's superstructure into a single, unified, smooth column wrapped in advanced composite materials.
- By eliminating these scattered and exposed antennas, the system dramatically reduces the vessel's Radar Cross-Section (RCS). A lower RCS means that incoming enemy radar waves are deflected away or absorbed rather than reflected directly back to the transmitter, thereby making the warship significantly harder to detect on hostile radar networks.
- Consequently, this architectural consolidation directly enhances the stealth characteristics and tactical survival capabilities of modern naval platforms in contested environments, allowing them to carry out low-observability missions and evade hostile tracking systems.

Information Booster:

- The UNICORN mast is also designated as the Nora-50 antenna system and is widely recognized as one of the most advanced weapon-grade multi-band antenna systems globally, famously deployed on Japan's Mogami-class stealth frigates.
- During the 16th India-Japan Annual Summit held in New Delhi on 2 July 2026, India and Japan finalized their first-ever joint defence co-development agreement to manufacture this system domestically in India. This project represents a milestone for India's Atmanirbhar Bharat initiative, as Bharat Electronics Limited (BEL) will spearhead the manufacturing and system integration of the UNICORN masts for the future warships of the Indian Navy, substituting older Advanced Composite Communication Systems (ACCS).

Additional Knowledge:

- Cargo carrying capacity (Option A): This feature relates strictly to the vessel's internal hull volume, displacement, deadweight tonnage, and hull structural engineering, which are completely unaffected by the electronics mast assembly on the upper deck.
- Missile range (Option B): The range of onboard offensive missiles is determined by propulsion physics, fuel composition, aerodynamic design, and solid/liquid booster technologies (e.g., BrahMos or vertical launch systems), rather than the design of the radio antenna mast.
- Underwater endurance (Option D): This is a critical metric for submarines, primarily enhanced through Air-Independent Propulsion (AIP) systems, lithium-ion battery banks, or nuclear reactors, and has no bearing on a surface warship's mast structure.

Q2. The Indigenous Integrated Mast (IIM) project was showcased by the Indian Navy during:

- (a) Aero India 2023
- (b) DefExpo 2020
- (c) DefExpo 2022
- (d) India Maritime Summit 2024

Ans.(c)

Sol. The correct answer is (C) DefExpo 2022

Explanation:

- The Indigenous Integrated Mast (IIM) project was a major highlight showcased by the Indian Navy during the DefExpo 2022 exhibition, which was held in Gandhinagar, Gujarat. This project marks a significant step forward in Indian naval engineering, focusing on creating advanced, self-reliant defense systems.
- An Integrated Mast is a state-of-the-art structural system designed for modern warships that houses multiple sensors, radar systems, electronic warfare antennas, and communication equipment within a single, unified, and aerodynamically optimized structure.
- The primary objective of the IIM project is to replace traditional, cluttered lattice masts that feature multiple separate antenna pillars. This consolidation drastically reduces the warship's overall Radar Cross Section (RCS), thereby enhancing its stealth capabilities against enemy radar detection systems.
- By showcasing this technology at DefExpo 2022, the Indian Navy highlighted its collaborative efforts with domestic defense public sector undertakings and foreign technology partners to bring cutting-edge maritime technologies to fruition.

Information Booster:

- The development of the IIM is closely tied to India's strategic defense cooperation agreements with international partners, particularly Japan, aimed at sharing technology for unified complex radio antenna systems.
- Traditional warships suffer from electromagnetic interference (EMI) because multiple antennas are placed close to one another on separate masts. The integrated mast system solves this issue through advanced electromagnetic compatibility (EMC) shielding and smart structural placement of antenna elements.
- These masts are typically constructed using advanced composite materials that are lightweight, corrosion-resistant, and transparent to specific radio frequencies, ensuring optimal performance of internal sensors.

Additional Knowledge:

- Aero India 2023 (Option A): This is a premier biennial aviation exhibition held at Yelahanka Air Force Station in Bengaluru, which focuses almost exclusively on aerospace systems, fighter jets like the LCA Tejas, and military drones rather than naval structural systems.
- DefExpo 2020 (Option B): Held in Lucknow, Uttar Pradesh, this edition of the defense exposition focused heavily on land systems, digital transformation of defense, and early-stage indigenization roadmaps, preceding the formal showcase of the IIM project.
- India Maritime Summit 2024 (Option D): This event primarily focuses on commercial shipping, blue economy initiatives, port infrastructure modernization, and global maritime trade agreements rather than the direct display of classified military warship technologies.

Q3. Which Indian defence public sector undertaking was identified as the production partner for the Indigenous Integrated Mast (IIM) project?

- (a) Hindustan Aeronautics Limited
- (b) Bharat Electronics Limited
- (c) Bharat Dynamics Limited
- (d) Mazagon Dock Shipbuilders Limited

Ans.(b)

Sol. The correct answer is (B) Bharat Electronics Limited

Explanation:

- Bharat Electronics Limited (BEL), a premier Indian Navratna defense public sector undertaking, was identified as the key production and technology absorption partner for the Indigenous Integrated Mast (IIM) project.
- BEL specializes in manufacturing advanced electronic equipment for the Indian Armed Forces, making it the natural choice to lead the domestic manufacturing, assembly, and testing of complex naval mast structures.
- Under the framework of technology sharing and co-development, BEL is responsible for integrating indigenous Indian communication systems, radar warning receivers, and electronic countermeasures into the localized mast design.
- This partnership ensures that the Indian Navy does not remain dependent on foreign original equipment manufacturers (OEMs) for spare parts, software upgrades, or routine maintenance of these vital stealth systems.

Information Booster:

- The involvement of BEL aligns perfectly with the Government of India's 'Atmanirbhar Bharat' (Self-Reliant India) and 'Make in India' initiatives, which mandate high levels of indigenous content in major defense acquisitions.
- BEL operates specialized testing facilities, including specialized chambers to evaluate electromagnetic interference and compatibility, which are critical for ensuring that the consolidated antennas inside the integrated mast do not disrupt one another's operations.
- By mastering the production of integrated masts, BEL positions itself to supply these systems not just for future Indian Navy warships, but also for potential export markets among friendly foreign nations looking to upgrade their naval fleets.

Additional Knowledge:

- Hindustan Aeronautics Limited (Option A): HAL is India's leading aerospace giant, focusing almost exclusively on the design, production, and maintenance of military aircraft, helicopters, and related avionics, with no direct mandate for naval mast production.
- Bharat Dynamics Limited (Option C): BDL is the primary manufacturer of guided missile systems, anti-tank guided missiles, torpedoes, and allied defense hardware, acting as a weapons production unit rather than an electronics and structural integration house.
- Mazagon Dock Shipbuilders Limited (Option D): MDL is a leading defense shipyard that constructs the actual physical hulls of destroyers and submarines, such as the Project 15B destroyers and Project 17A frigates. While MDL installs the masts onto the ships, it does not manufacture the electronic mast systems themselves, which are supplied by BEL.

Q4. Which of the following correctly identifies the companies that jointly developed Japan's UNICORN integrated mast system?

- (a) Mitsubishi Heavy Industries, Toshiba and Hitachi
- (b) NEC, Mitsubishi Electric and IHI Corporation
- (c) NEC, Sampa Kogyo and Yokohama Rubber
- (d) Kawasaki Heavy Industries, NEC and Toshiba

Ans.(c)

Sol. The correct answer is (C) NEC, Sampa Kogyo and Yokohama Rubber

Explanation:

- The UNICORN integrated mast system was jointly developed by a consortium of Japanese industrial giants consisting of NEC Corporation, Sampa Kogyo, and Yokohama Rubber, blending their respective expertise to create a highly advanced naval product.
- NEC Corporation provided the foundational electronics, signal processing capabilities, and advanced antenna arrays necessary to combine multiple communication and electronic warfare systems into a single functional unit.
- Sampa Kogyo contributed its deep engineering expertise in maritime structures and structural integration, ensuring that the mast could be safely mounted onto a warship hull without compromising the vessel's center of gravity or stability.
- Yokohama Rubber utilized its advanced materials division to design and manufacture the specialized composite radome structures that encapsulate the antennas, providing structural integrity while remaining transparent to electromagnetic signals.

Information Booster:

- The creation of the UNICORN mast required solving complex material science challenges, as the outer casing must protect delicate electronic sensors from typhoon-force winds, extreme temperatures, and salt-induced corrosion.
- This joint corporate development showcases the unique synergy within Japan's defense industrial base, where electronics companies, heavy manufacturers, and materials specialists collaborate closely under government guidance.
- The integration of structural engineering with specialized coatings and composites allows the mast to effectively absorb or scatter radar waves, a capability that is highly guarded and sought after by global navies.

Additional Knowledge:

- Mitsubishi Heavy Industries, Toshiba and Hitachi (Option A): While Mitsubishi Heavy Industries (MHI) is the primary shipbuilder responsible for constructing the hulls of the Mogami-class frigates, it did not form the specific three-company development consortium for the UNICORN mast housing itself.
- NEC, Mitsubishi Electric and IHI Corporation (Option B): Mitsubishi Electric and IHI Corporation are major defense suppliers in Japan responsible for radar arrays (like the OPY-2) and marine gas turbine engines respectively, but they are not the co-developers of the UNICORN unified mast enclosure.
- Kawasaki Heavy Industries, NEC and Toshiba (Option D): Kawasaki Heavy Industries is famous for building submarines, aircraft, and heavy machinery, and Toshiba handles consumer and industrial electronics, but neither company collaborated on this specific integrated mast design with NEC and Yokohama Rubber.

Q5. The acronym UNICORN, used for the naval radio antenna system, stands for:

- (a) Unified Naval Integrated Communication and Radar Network
- (b) Unified Complex Radio Antenna
- (c) Universal Naval Communication Radar Node
- (d) Unified Communication Relay and Navigation System

Ans.(b)

Sol. The correct answer is (B) Unified Complex Radio Antenna

Explanation:

- The acronym UNICORN stands precisely for Unified Complex Radio Antenna. It represents a highly sophisticated, next-generation integrated mast system developed for modern surface warships. In naval engineering, standard superstructures feature various exposed, distinct antenna assemblies dedicated to specific bands, radars, and data networks, which clutter the ship's profile.
- The UNICORN mast consolidates these separate antennas into a singular, integrated, streamlined tower housing multi-band capabilities. This structural unification eliminates the geometric protrusions that reflect radio waves back to enemy tracking stations.
- By merging these complex systems under a uniform, cylindrical composite shell, the UNICORN mast significantly minimizes the ship's radar cross-section (RCS). This technological integration enhances the stealth characteristics, survivability, and electronic warfare capabilities of modern naval vessels in highly contested maritime zones.

Information Booster:

- The UNICORN mast, formally known in Japanese military development as the Nora-50 system, is standard on the Japan Maritime Self-Defense Force's (JMSDF) advanced Mogami-class frigates. It provides simultaneous processing of tactical data links, TACAN (Tactical Air Navigation), and communication frequencies without electromagnetic interference between systems.
- Under the landmark defense co-development agreement signed on 2 July 2026 during the 16th India-Japan Annual Summit, India's Bharat Electronics Limited (BEL) will collaborate with Japanese firms to manufacture and integrate the UNICORN system locally for the Indian Navy's upcoming frontline surface platforms.

Additional Knowledge:

- Option A (Unified Naval Integrated Communication and Radar Network), Option C (Universal Naval Communication Radar Node), and Option D (Unified Communication Relay and Navigation System) are plausible-sounding naval engineering terms engineered as distractors. They do not represent the official technical nomenclature of this specific military system co-developed by India and Japan.

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