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## DEFENCE & SECURITY

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Detailed  
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1. Ans: B

Exp:

- The **India-US Joint Special Forces exercise “Ex Vajra Prahar 2022”**, began at the **Special Forces Training School** in **Bakloh, Himachal Pradesh**. Hence, **statement 1 is not correct**.
- **Exercise Vajra Prahar 2022** is the **13<sup>th</sup> edition** of the annual exercise.
- The main objective of this joint exercise is to share the best practices and experiences in areas such as joint mission planning and operational tactics.
- Both armies would jointly train, plan and execute a series of **special operations, counter-terrorist operations, and airborne operations** in simulated conventional and unconventional scenarios in mountainous terrain. Hence, **statement 2 is correct**.

2. Ans: B

Exp:

**Exercise between India Russia:**

**Exercise Indra:**

- The exercise will entail the conduct of counter terror operations under the United Nations mandate by a joint force against international terror groups. Hence **statement 1 is correct**.
  - ◆ The **INDRA** series of exercises began in 2003 and was conducted as a bilateral naval exercise alternately between the two countries.
  - ◆ However, the first joint Tri-Services Exercise was conducted in 2017.

**The Russian War Games**

- **Indian and Chinese troops** will take part in **military exercises in Russia** at the end of August 2022, the first such **major war games (military drills)** to be **hosted by Russia** since its invasion of Ukraine in February 2022.
- **The Military Drill:**
  - ◆ Led by host Russia, the drill will **include troops from India, Belarus, Mongolia, Tajikistan and other countries besides China (It is a multilateral military exercise)**. Hence **statement 2 is not correct**.
  - ◆ The drills will **bring together the airborne forces, long-range and military transport aircraft and also military contingents of other countries**.

3. Ans: C

Exp:

- **AI NAJAH** is the joint exercise between **India and Oman** that would focus on Counter Terrorism Operations,

Regional Security Operations, and Peace Keeping Operations under United Nations charter apart from organising joint physical training schedules, tactical drills, techniques, and procedures. Hence, **pair 1 is not correctly matched**.

- **Nomadic Elephant** is a bilateral military exercise between **India and Mongolia**. Hence, **pair 2 is correctly matched**.
- **Exercise Khanjar** is a bilateral military exercise between **India and Kyrgyzstan** and not between **IRAN**. Hence, **pair 3 is not correctly matched**.
- Hence, **option C is correct**.

4. Ans: C

Exp:

- **‘Udarashakti’ Exercise:**

- ◆ It is a **bilateral exercise** between the **air forces of India and Malaysia**. Hence, **option C is correct**.
- ◆ The Indian Air Force is participating in the air exercise with Su-30 MKI and C-17 aircraft while Malaysian Air Force will be flying Su 30 MKM aircraft.
- ◆ The four days of exercise will witness the conduct of various aerial combat drills between the two Air Forces.

- **Background:**

- ◆ The first bilateral Air Force exercise that staged frontline Sukhoi-30 combat aircraft was conducted in 2018.
- ◆ From 2008 to 2010, the Indian Air Force Training Team was deployed in Malaysia to give training to Malaysian pilots on the SU-30SKM aircraft.

- **Significance:**

- ◆ Exercises will strengthen long-standing friendships and enhance defense cooperation between both armies. As a result, regional security will be strengthened.
- ◆ IAF will have an opportunity to share and learn best practices with the Royal Malaysian Air Force through this exercise. It is also likely that they will discuss mutual combat capabilities.

5. Ans: B

Exp:

- India-Russia military-technical cooperation has evolved from a **buyer-seller framework** to one involving **joint research, development and production of advanced defence technologies and systems**.
- Both countries regularly conduct the Tri-Services exercise **‘INDRA’**.

● The joint programmes between India and Russia include:

- ◆ BrahMos cruise missile programme
- ◆ 5<sup>th</sup> generation fighter jet programme
- ◆ Sukhoi Su-30MKI programme
- ◆ Ilyushin/HAL Tactical Transport Aircraft
- ◆ KA-226T twin-engine utility helicopters, Hence, statement 2 & 3 are correct.

● INS Vikramaditya aircraft carrier was purchased from Russia and is not a joint programme.

● BARAK Missile programme is a joint venture between India & Israel, Hence statement 4 is not correct.

6. Ans: B

Exp:

● HELINA is a third generation **Anti-Tank missile**, that has been **developed by the Defense Research and Development Laboratory (DRDL), Hyderabad** under the Missiles and Strategic Systems (MSS) cluster of the DRDO. Hence statement 1 is correct.

- ◆ It has a **maximum range of seven kilometers** and has been designed and developed for integration on the weaponized version of the **ALH (Advanced Light Helicopter)**.

● It's an Anti-Tank missile which has been developed by India and not by part of Israel's Iron Dome technology. Hence, statement 2 is not correct.

● The missile system has all-weather, day, and night capability and can defeat battle tanks with conventional armor as well as explosive reactive armor. Hence, statement 3 is not correct.

7. Ans: A

Exp:

● "Butterfly mine" is a very sensitive **anti-personnel landmine**. Hence, option A is correct.

● An applied force of 5 kg is enough to detonate the mine.

● It is extremely dangerous, even for small children.

● The UK Ministry of Defence, in its intelligence assessment of the ongoing war in Ukraine, sounded an alarm on the possible use of PFM-1 series 'Butterfly Mines' by the Russian military in Donetsk and Kramatorsk.

- ◆ The major difference between PFM-1 & PFM-1S is that the latter one comes with a self-destruction mechanism which gets activated within one to 40 hours.

● Uses:

- ◆ They can be dropped from helicopters or through ballistic dispersion using artillery and mortar shells.
- ◆ They glide to the ground without exploding and later explode on coming in contact.

8. Ans: C

Exp:

Exercise Pitch Black

● It's a **biennial exercise** to enhance interoperability and strengthen relationships among participants. Hence, statement 1 is not correct.

● It will take place in the **Southern hemisphere in Indian Ocean** which is hosted by the **Royal Australian Air Force (RAAF)**. Hence, statement 2 is not correct.

● **Indian Force** will join 16 other nations. Hence, statement 3 is correct.

- ◆ The participants' nations this year are Australia, Canada, France, Germany, Indonesia, **India**, Japan, Malaysia, Netherlands, New Zealand, the Philippines, South Korea, Singapore, Thailand, UAE, the U.K, and the U.S.

9. Ans: A

Exp:

● The **Central Reserve Police Force (CRPF)** is the premier central police force of the Union of India for internal security. **Originally** constituted as the **Crown Representative Police on 27<sup>th</sup> July 1939**.

● It became the **Central Reserve Police Force** on enactment of the **CRPF Act** on 28<sup>th</sup> December 1949.

● The Force has grown into a big organization with **246 battalions (Bns)**, (including 6 **Mahila Bns**, 15 **RAF Bns**, 10 **CoBRA Bns**, 5 **Signal Bns** and 1 **Special Duty Group**, 1 **Parliament Duty Group**).

● The **Parliament Duty Group** is an elite CRPF unit tasked with providing armed protection to Parliament House.

● The **Special Duty Group** is an elite battalion of the CRPF tasked with providing security for the outer cordon of the Prime Minister's official residence.

● Hence option A is correct.

10. Ans: A

Exp:

● Project 17A Frigates calls for the development of seven stealth frigates that will be hard to detect using radar or sonar equipment. Hence, statement 1 is correct.

- ◆ The key advanced stealth characteristics of the P-17A include the ship's lower radar cross-section, which is achieved by using a modified superstructure form that decreases radar wave reflections.

● The ships under Project 17A are:

- ◆ INS Nilgiri
- ◆ INS Himgiri
- ◆ INS Udaygiri
- ◆ INS Dunagiri, Hence, statement 2 is correct.



- **Brahmos SSM, LRSAM (Forward & Aft configuration) with MF STAR radar, indigenous Sonar, and Triple tube Heavy Torpedo launcher are the main armament and sensor suite of P-17A ships. Hence, statement 3 is not correct.**

11. Ans: D

Exp:

- **Mission Shakti is an integrated women empowerment programme is launched as an umbrella scheme for the safety, security and empowerment of women for implementation. Hence statement 1 is correct.**
- **'Mission Shakti' was launched during the 15<sup>th</sup> Finance Commission period 2021-22 to 2025-26, Hence statement 2 is correct.**
- **The Components of Mission Shakti are,**
  - ◆ **Sambal:**
    - It is for **Safety and Security of Women.**
    - It consists of schemes of **One Stop Centre (OSC), Women Helpline (WHL), Beti Bachao Beti Padhao (BBBP)**, with a new component of **Nari Adalats** - women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families. **Hence statement 3 is correct.**
  - ◆ **Samarthya:**
    - It is for **Empowerment of Women.**
    - It consists of erstwhile schemes of Ujjwala, Swadhar Greh and Working Women Hostel that have been included with modifications.
    - In addition, the existing schemes of National Creche Scheme for children of working mothers and Pradhan Mantri Matru Vandana Yojana (PMMVY) under umbrella Integrated Child Development Services ICDS have now been included in Samarthya.
    - A new component of **Gap Funding for Economic Empowerment** has also been added in the Samarthya Scheme.

12. Ans: C

Exp:

- Recently, the Indian Navy commissioned a new Indian Naval Air Squadron 324 at eastern Naval Command.
- It has been named "**KESTRELS**," which are birds of prey and have good sensory capabilities, symbolising the aircraft's and air squadron's intended role. **Hence, statement 1 is correct.**
- The unit is the **Eastern Seaboard's first Naval Squadron** to use **indigenously** designed and built Advanced Light Helicopters. **Hence, statement 2 is not correct.**

- **It's equipped with ALH MK III helicopters which have state-of-the-art equipment which includes modern surveillance radar and electro-optical sensors. Hence, statement 3 is correct.**

13. Ans: C

Exp:

- The Indian Army commemorated 75<sup>th</sup> Army Day on January 15 at the Parade Grounds in Hyderabad.
- On this day in 1949, **Field Marshal K.M. Cariappa took over as the first Indian Commander-in-Chief of the Indian Army**, replacing his British predecessor (General Sir Francis Butcher). General Cariappa was second of the only two Army officers to have held the five-star rank of Field Marshal (first being Sam Manekshaw). **Hence, statement 1 is correct.**
- The day honours the soldiers of the country, who have set the greatest example of selfless service and brotherhood and more than anything the love for the country.
- The Indian army originated from the forces of the East India Company, which later became the 'British Indian Army', and eventually, after Independence, the Indian Army. **Hence, statement 2 is correct.**

14. Ans: C

Exp:

- BrahMos is a joint venture between the Defence Research and Development Organisation of India (DRDO) and the NPOM of Russia.
- BrahMos is named on the rivers Brahmaputra and Moskva. **Hence, statement 1 is correct.**
- It is a two-stage (solid propellant engine in the first stage and liquid ramjet in second) cruise missile. **Hence, statement 2 is not correct.**
- It is a multiplatform missile i.e. it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the "Fire and Forget" principle i.e it does not require further guidance after launch. **Hence, statement 3 is correct.**

15. Ans: B

Exp:

- **The 21<sup>st</sup> edition of the bilateral naval exercise between India and France began** on the western seaboard. While the bilateral exercise between the two navies **was initiated in 1993, it was adopted as 'VARUNA' in 2001** and has become a **hallmark of the India – France strategic bilateral relationship.**

- The exercise will be conducted over five days from January 16-20, 2023.
- Hence, option B is correct.

16. Ans: A

Exp:

- BrahMos is a joint venture between the **Defence Research and Development Organisation of India (DRDO)** and the NPOM of Russia.
  - ◆ BrahMos is named on the rivers **Brahmaputra and Moskva**.
- It is a **two-stage** (solid propellant engine in the first stage and liquid ramjet in second) missile.
- It is a **multiplatform missile** i.e it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the **"Fire and Forgets" principle** i.e it does not require further guidance after launch.
- Brahmos is one of the **fastest cruise missiles** currently operationally deployed with speed of Mach 2.8, which is nearly 3 times more than the speed of sound.
- Hence, option A is correct.

17. Ans: D

Exp:

- **Integrated Guided Missile Development Programme (IGMDP)** aims to attain self-sufficiency in the field of missile technology.
  - ◆ The IGMDP formally got the approval of the **Indian government in 1983**.
- The missiles developed under IGMDP are:
  - ◆ Short-range surface-to-surface ballistic missile – Prithvi.
  - ◆ Intermediate-range surface-to-surface ballistic missile – Agni
  - ◆ **Short-range low-level surface-to-air missile – Trishul**
  - ◆ Medium-range surface-to-air missile – Akash
  - ◆ **Third generation anti-tank missile – Nag**
- Therefore, option D is correct.

18. Ans: A

Exp:

- It is a **military exercise conducted annually between India and Nepal**. Hence, statement 1 is correct.
- The objective of this exercise is to:
  - ◆ Establish military relations in inaccessible mountainous areas by the soldiers of both countries

- ◆ Provide humanitarian assistance under disaster management,
- ◆ Get training in anti-terrorist operations,
- ◆ Build interoperability and sharing expertise between the two countries.

- The **15<sup>th</sup> edition of Surya Kiran** took place at **Pithoragarh in Uttarakhand, India**. Hence, statement 2 is not correct.

19. Ans: B

Exp:

- The 5<sup>th</sup> Scorpene class submarine of Project-75 named **INS 'Vagir'** has been delivered to the **Indian Navy** recently.
- It is named after the **Sand Fish**, a deadly **deep-sea predator** of the Indian Ocean. Hence, statement 1 is not correct.
- It is a part of the six **Kalvari-class submarines being built in India**. Hence, statement 2 is correct.
  - ◆ The Kalvari-class submarines have the capability of **operating in a wide range of Naval combat** including anti-warship and anti-submarine operations.

20. Ans: B

Exp:

**Man-Portable Air-Defence Systems (MANPADS):**

- MANPADS are **short-range, lightweight and portable surface-to-air missiles** that can be fired by individuals or **small groups to destroy aircraft or helicopters**. Hence, statement 1 is correct.
- They help shield troops from aerial attacks and are **most effective in targeting low-flying aircrafts**. Hence, statement 2 is not correct.
  - ◆ MANPATs or Man-Portable Anti-Tank Systems work in a similar manner but are used to destroy or incapacitate military tanks.
- MANPADS have a maximum range of 8 kilometres and can engage targets at altitudes of 4.5 km.
- The first MANPADS were **introduced by the United States and Soviet Union in the 1960s**. Hence, statement 3 is correct.

21. Ans: A

Exp:

**About Quick reaction Surface to Air Missiles (QRSAM):**

- It is designed and developed by DRDO to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks. Hence, statement 1 is correct.



- ◆ QRSAM is a canister-based system, which means that it is stored and operated from specially designed compartments.
- ◆ In the canister, the inside environment is controlled, thus along with making its transport and storage easier, the shelf life of weapons also improves significantly.
- **Range and Mobility:**
  - ◆ It is a **short-range surface-to-air missile (SAM) system**, primarily designed and developed by DRDO to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks. **Hence, statement 2 is not correct.**
    - The entire weapon system has been configured on a mobile and manoeuvrable platform and is capable of providing air defence on the move.
    - It has been designed for induction into the Army and has a range of 25 to 30 km.

22. Ans: D

Exp:

- In the **domain of international relations**, military diplomacy has, in recent years, emerged as a **major tool to further diplomatic interests of nations**.
- **Participation in international level military exercises** is an indication of the highest level of trust and confidence between the member nations.
- On the operational side, **military exercises enable militaries to understand each other's drills and procedures**, overcome language barriers, and facilitate familiarization with equipment capabilities.
- Besides goodwill, it is a tool for projection of a nation's soft power – culture, language, customs, beliefs, food habits and lifestyle.
- Joint Military Exercises of India with Other Countries
  - ◆ Garuda Shakti - Indonesia
  - ◆ Hand-in-Hand - China
  - ◆ Kurukshetra - Singapore
  - ◆ Mitra Shakti - Sri Lanka
  - ◆ Nomadic Elephant - Mongolia
  - ◆ Yudh Abhyas - USA
- **Hence, option D is correct.**

23. Ans: C

Exp:

**Indian Navy:**

- It was established in 1612 by the East India Company. **Hence, statement 1 is correct.**

- It is headed by the **President of India** as its Supreme Commander. **Hence, statement 2 is correct.**
- **Indian Navy's Motto is - Sam no Varunah** (शानोवरुणः) that means that the God of water, Varuna, should be auspicious unto us.
- Some of the **earliest operations of the Indian Navy** include its contribution in liberating Goa from Portugal in 1961.
- The **Navy has developed as an admirable force** with the making of the nuclear-powered ballistic missile submarine **INS Arihant** and several other ships.

24. Ans: A

Exp:

- Recently, the **Indian Navy** participated in the first edition of **India-Mozambique-Tanzania Trilateral Exercise (IMT TRILAT)**, a **Joint Maritime Exercise** among the **Indian, Mozambique and Tanzanian navies** commenced at **Dar Es Salaam, Tanzania**.



- **Hence, option A is correct.**

25. Ans: C

Exp:

- The **K9 Vajra** is a **155 mm, 52-calibre tracked self-propelled howitzer** (a short gun for firing shells on high trajectories at low velocities) built in India by **Larsen & Toubro (L&T)** with **technology transferred from South Korean** defence major Hanwha Defense based on its **K9 Thunder**.

- ◆ The K9 Thunder platform is made of **all-welded steel armour protection material**. Hence, **statement 2 is correct**.

- The K9 gun has been developed under the '**Buy Global**' programme of the **Defence Procurement Procedure (DPP)** where foreign companies are allowed to participate. Hence, **statement 1 is correct**.

26. Ans: D

Exp:

- Pralay' is **India's first conventional quasi-ballistic missile** and is an answer to any conventional missile attack from northern or western borders. Hence, **statement 1 is correct**.
  - ◆ A quasi-ballistic missile has a low trajectory, and while it is largely ballistic, it can maneuver in flight.
  - ◆ The missile has been developed in a way that it is able to defeat the interceptor missiles and also has the ability to change its path after covering a certain range mid-air.
- It is powered with a solid propellant rocket motor and many new technologies.
- The missile guidance system includes state-of-the-art navigation system and integrated avionics.
- **Background:** It is a **derivative of the Prahaar missile programme**, which was first tested in 2011. Hence, **statement 2 is correct**.
  - ◆ Prahaar is a surface-to-surface missile with a range of 150 km.
- **Range:** The missile has a range of 150-500 kilometre and can be launched from a mobile launcher.
  - ◆ **Pralay is be the longest-range surface-to-surface missile** in the inventory of the Army. Hence, **statement 3 is correct**.
- **Significance:** It will completely change the tactical battlefield dynamics and India will have two conventional missiles with long range.

27. Ans: B

Exp:

- Exercise Varuna is a bilateral naval exercise **between India and France**, aimed at improving interoperability and enhancing defense cooperation between the two nations. Hence, **option B is correct**.
- It typically involves a range of naval activities, including training in anti-submarine warfare, search and rescue operations, and surface warfare tactics.
- The exercise takes place annually and alternates between Indian and French naval bases.

28. Ans: A

Exp:

TARKASH Exercise:

- The **exercise named TARKASH** by the National Security Guard (NSG) and US Special Operations Forces (SOF) is **currently underway in Chennai**.
- With chemical and biological warfare being recognised as a coming threat to the world, an ongoing Indo-US joint exercise has **for the first time included a Chemical, Biological, Radiological and Nuclear (CBRN)** terror response in its drill.
- The **objective of the joint exercise was** to rapidly neutralise the terrorists, rescue the hostages safely and deactivate the chemical weapons being carried by the terrorists.
- Hence, **option A is correct**.

29. Ans: A

Exp:

- **Military Exercises between India and Japan:**
  - ◆ JIMEX (Naval)
  - ◆ SHINYUU Maitri (Air Force)
  - ◆ Veer Guardian (Air Force)
  - ◆ Dharma Guardian (Military)
- Hence, **option A is correct**.

30. Ans: D

Exp:

● **About Aero India:**

- ◆ Aero India 2023 was Organised at **Air Force Station, Yelahanka, Bengaluru from 13<sup>th</sup> Feb-17<sup>th</sup> Feb 2023**. The event was the biggest ever to date and witnessed the **participation of 98 countries**, according to the **Ministry of Defence**.
- ◆ This year's **theme is 'The runway to a billion opportunities'** and the focus is on showcasing **India's growth in aerospace and defence capabilities**. Hence, **statement 1 is not correct**.
- ◆ Aero India 2023 featured a static display of aircraft and a flying display of fighter planes and helicopters, **but it is not limited to just Indian aircraft**.
  - Aero India is a platform for **international aerospace and defence companies to showcase their products and services**, and the event typically sees participation from several countries. The static and flying displays usually include a **mix of Indian and foreign aircraft**. Hence, **statement 2 is not correct**.



31. Ans: D

Exp:

- **About LCA Tejas Mk2:**
  - ◆ The **Indigenous LCA Tejas Mk2** is a fighter aircraft developed in India that can carry **eight Beyond-Visual-Range (BVR) missiles simultaneously**, along with integrating all native weapons and advanced weapons from **other countries**. Hence, **statement 1 is not correct**.
  - The **LCA Mk2 is an upgraded version of the LCA Tejas Mk1**, which has improved range and mission endurance.
  - The mission endurance for fighting a war was **57 minutes for LCA Tejas Mk1**, but it is **120 minutes for LCA Tejas Mk2**.
  - ◆ The **LCA Mk2 will be pitched as a replacement for the Jaguars, MiG-29s, and Mirage 2000s** when they start retiring in a decade. Hence, **statement 2 is not correct**.
  - The critical design review of the aircraft is ready and the manufacturing initiated, and the aircraft should be rolled out by 2024.
  - LCA Mk2 will have a weapon-carrying capacity of **6.5 tonnes**. The General Electric GE-414 engine will power the **LCA Mk2**.

32. Ans: B

Exp:

- **The exercise held between India and the United Kingdom (UK) include:**
  - ◆ Ajeya Warrior (Military)
  - ◆ Konkan (Navy)
  - ◆ Indradhanush (Air Force)
  - ◆ Konkan Shakti (First ever tri-services joint exercise)
- **Sitmex is a maritime exercise between Singapore-India-Thailand**
- **Hence, option B is correct.**

33. Ans: C

Exp:

- INS Sindhukesari is part of the Russian-made Sindhughosh-class submarines. Hence, **statement 1 is correct**.
- The submarine was first commissioned to the Indian Navy in 1989 before being refitted in 2018. Sindhughosh class submarines are the Kilo class diesel-electric submarines. The submarines have a displacement of 3,000 tonnes. Hence, **statement 2 is correct**.

34. Ans: D

Exp:

- **Project 17 Alpha frigates (P-17A)** were launched by the **Indian Navy in 2019 to construct a series of stealth guided-missile frigates**.
- **Hence, statement 1 is not correct**
- These are currently being constructed by two companies - **Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE)**.
- These guided-missile frigates have been constructed with a **specific stealth design**, which has **radar-absorbent coatings** and is **low-observable** which can make its approach undetectable for the enemies.
- The new technology also reduces the **infrared signals of the ship**.
- **The first stealth ship launched under Project 17A was the Nilgiri**, which was launched in 2019.
  - ◆ **Udaygiri**, the second ship, was launched in May 2022, and **will likely be commissioned in 2024**.
  - ◆ **Hence, statement 2 is not correct.**

35. Ans: B

Exp:

- **The BrahMos missile**, an **Indo-Russian joint venture**, has a range of 290 km and is the **fastest cruise missile in the world** with a top speed of Mach 2.8 (nearly three times the speed of sound).
- BrahMos is named **after the rivers Brahmaputra and Moskva**.
  - ◆ **Hence, statement 3 is correct.**
- It is a two-stage (**solid propellant engine in the first stage and liquid ramjet in second**) missile.
  - ◆ **Hence, statement 1 is not correct.**
- It is a **multiplatform missile** i.e., it can be launched from **land, air, and sea** and multi capability missile with **pinpoint accuracy** that works in both day and night irrespective of the weather conditions.
- It operates on the **"Fire and Forgets" principle** i.e., it does not require further guidance after launch.
  - ◆ **Hence, statement 2 is correct.**
- **Hence, option B is correct.**

36. Ans: D

Exp:

- Very Short-Range Air Defence System (VSHORADS) 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 laboratories and Indian Industry Partners. **Hence, statements 1 and 3 are correct.**

- VSHORADS missile incorporates many novel technologies including miniaturized Reaction Control System (RCS) and integrated avionics, which have been successfully proven during the tests.
- The missile, meant for neutralizing low-altitude aerial threats at short ranges, is propelled by a dual thrust solid motor. **Hence, statement 2 is correct.**
- The design of the missile including launcher has been highly optimized to ensure easy portability.

37. Ans: D

Exp:

- Recently, India conducted six successful flight-tests of the **Quick Reaction Surface to Air Missile (QRSAM)** system from **Integrated Test Range (ITR)** Chandipur off the Odisha coast.
- QRSAM is a **canister-based system**, which means that it is **stored and operated from specially designed compartments**.
  - ◆ In the canister, the inside environment is controlled, thus along with making its transport and storage easier, the shelf life of weapons also improves significantly.
  - ◆ **Hence, statement 1 is not correct.**
- It is a **short-range surface-to-air missile (SAM) system, primarily designed and developed by DRDO** to provide a protective shield to moving armoured columns of the Army from enemy aerial attacks.
  - ◆ **Hence, statement 2 is not correct.**
- The entire weapon system has been configured on a mobile and manoeuvrable platform and is capable of providing air defence on the move.
- **Hence, option D is correct.**

38. Ans: B

Exp:

Exercise DUSTLIK:

- The **3<sup>rd</sup> edition of joint training exercise** between **Indian and Uzbekistan armies, EX-DUSTLIK**, is being conducted at Yangiariq, Uzbekistan in 2022.
- The exercise would **focus on Counter Terrorism operations** in semi-urban terrain under a **United Nations Mandate**.
- The training schedule will focus primarily on sharing tactical level drills and learning of best practices from each other.

- It aims at enhancing understanding, cooperation and interoperability between two armies.
  - ◆ The last edition of DUSTLIK was conducted in Ranikhet (Uttarakhand) in March 2021.
- **Hence option B is correct.**

39. Ans: D

Exp:

- **LCA** is an advanced technology, single seat, single engine, supersonic, light-weight, all-weather, multi-role, air superiority fighter designed for air-to-air, air-to-ground and air-to-sea combat roles.
- It was started by the **Government of India in 1984** when they established the **Aeronautical Development Agency (ADA)** to manage the **LCA programme**.
- It is designed by **Aeronautical Development Agency** under the **Department of Defence Research and Development**.
  - ◆ But it is manufactured by State-owned Hindustan Aeronautics Limited (HAL).
  - ◆ **Hence, statement 1 is correct.**
- **Variants under Tejas (LCA) are:**
  - ◆ **Tejas Trainer:** 2-seater operational conversion trainer for training air force pilots.
  - ◆ **LCA Navy:** Twin- and single-seat carrier-capable for the Indian Navy.
  - ◆ **LCA Tejas Navy MK2:** This is phase 2 of the LCA Navy variant.
  - ◆ **LCA Tejas Mk-1A:** This is an improvement over the LCA Tejas Mk1 with a higher thrust engine.
  - ◆ **Hence, statement 2 is correct.**

40. Ans: A

Exp:

- An Indian Army contingent has arrived in Seychelles for the **ninth edition of the Joint Military Exercise Lamitiye 2022** between the **Indian Army and Seychelles Defence Forces (SDF)**.
- Lamitiye, which in **Creole means friendship**, is a biennial training event being conducted in Seychelles since 2001.
- The aim is to build and promote bilateral military relations in addition to exchanging skills, experiences and good practices between both armies.
- Exercise Lamitiye is **significant in terms of security challenges** faced by both the nations in the backdrop of the current global situation and growing security concerns in the Indian Ocean Region.
- **Hence, option A is correct.**





41. Ans: B

Exp:

- It is a missile propulsion technology jointly developed by **India and Russia**. Hence, **statement 1 is not correct**.
- SFDR technology is a missile propulsion system based on the concept of Ramjet Engine principle.
- A ramjet is a **form of air-breathing jet engine that uses the vehicle's forward motion** to compress incoming air for combustion without a rotating compressor. Hence, **statement 2 is correct**.
- In a ramjet, the high pressure is produced by "ramming" external air into the combustor using the forward speed of the vehicle. The external air that is brought into the propulsion system becomes the working fluid.
- Ramjets produce thrust only when the vehicle is already moving, ramjets cannot produce thrust when the engine is stationary or static.

42. Ans: C

Exp:

- The **Pinaka rocket system is a multi-barrel rocket system**, which is named after Lord Shiva's bow. Hence, **statement 1 is correct**.
  - ◆ It is developed by Pune-based Armament Research and Development Establishment (ARDE) and High Energy Materials Research Laboratory (HEMRL).
- The development of the Pinaka was started by the DRDO in the late 1980s as an alternative to the Multi Barrel Rocket Launcher systems of Russian make called the 'Grad', which are still in use by some regiments.

- After successful tests of Pinaka Mark-1 in late 1990, it **was first used in the battlefield during the Kargil war of 1999**, quite successfully. Subsequently, multiple regiments of the system came up in the 2000s. Hence, **statement 2 is correct**.

43. Ans: A

Exp:

- **Garuda Shakti** is a military exercise between **India and Indonesia** aimed at enhancing **understanding, cooperation and interoperability** between the Special Forces of both armies.
- The **eighth edition of this bilateral military exercise** began on 21 November 2022 in **Karawang, Indonesia**.
- This joint exercise will facilitate both armies to know each other better, and share their wide experiences and **combat experience on countering terrorist operations, Regional Security Operations & Peace Keeping Operations** in an international environment.
- Therefore, **option A is correct**.

44. Ans: D

Exp:

- Naseem Al Bahr is a bilateral maritime exercise between the Indian Navy (IN) and the **Royal Navy of Oman (RNO)**. Hence, **statement 1 is correct**.
- The **Indian and French Navies** have been conducting bilateral maritime exercises since 1993. Since 2001, these exercises have been called 'VARUNA'. This is an annual event. Hence, **statement 2 is correct**.
- In pursuance of India's Act East Policy, **Exercise 'Samudra Shakti' was conceived in 2018** as a bilateral Indo-Indonesian exercise. Hence, **statement 3 is not correct**.
- **India and Thailand** have been carrying out **CORPAT** along their International Maritime Boundary Line **twice a year since 2005**. Hence, **statement 4 is correct**.

45. Ans: A

Exp:

- **Indigenisation** is the **capability of developing and producing any defence equipment within the country for the dual purpose** of achieving self reliance and reducing the burden of imports. Hence, **statement 1 is correct**.
- Self-reliance in defence manufacturing is one of the key objectives of Department of Defence Production.
  - ◆ Defence Research Development Organisation (DRDO), Defence Public Sector Undertakings (DPSUs) and private organisations are playing a critical role in indigenisation of defence industries.

- Recently, the Ministry of Defence has released the third positive indigenisation list of 101 items, comprising major equipment/platforms.
  - The 'First Negative Indigenisation' List comprising 101 items was notified in August 2020.
  - The Second Indigenisation list was notified in June 2021 import list for 108 items.
  - So a total of more than 300 items has been banned for external imports. **Hence, statement 2 is not correct.**

46. Ans: B

Exp:

**Brahmos Missile:**

- BrahMos is a joint venture between the Defense Research and Development Organisation of India (DRDO) and the NPOM of Russia. **Hence statement 1 is not correct.**
- BrahMos is named for the rivers Brahmaputra and Moskva.
- It is a **two-stage (solid propellant engine in the first stage and liquid ramjet in second) missile.**
- It is a **multiplatform missile** i.e it can be launched from **land, air, and sea and multi capability missile** with pinpoint accuracy that works in both day and night irrespective of the weather conditions. **Hence statement 2 is correct.**
- It operates on the **"Fire and Forgets"** principle i.e., it does not require further guidance after launch.
- Brahmos is one of the fastest cruise missiles currently operationally **deployed with speed of Mach 2.8**, which is nearly 3 times more than the speed of sound.

47. Ans: B

Exp:

**Role of the Chief of Defence Staff (CDS):**

- CDS acts as the **permanent Chairman of the Chiefs of Staff Committee** which will also have three service chiefs as members. **Hence, statement 1 is correct.**
- His core function will be to foster greater operational synergy between the three service branches of the Indian military and keep inter-service frictions to a minimum.
- He also **heads the newly created Department of Military Affairs (DMA)** in the Ministry of Defence.
  - As the head of DMA, CDS is vested with the authority in prioritizing inter-service procurement decisions as Permanent Chairman-Chiefs of Staff Committee.

- He also performs an **advisory role in the Nuclear Command Authority (NCA)**. **Hence, statement 2 is not correct.**

- The CDS is also vested with the authority to provide directives to the three chiefs.
- However, he **does not enjoy any command authority over any of the forces**. **Hence, statement 3 is not correct.**
- CDS is first among equals, he enjoys the rank of Secretary within the DoD (Department of Defence) and his powers will be confined to only the revenue budget.

48. Ans: A

Exp:

- It is the **first and only Tri-Service theatre command of the Indian Armed Forces**, based at Port Blair in Andaman and Nicobar Islands of India. **Hence, statement 1 is correct.**
- It was created in 2001 to **safeguard India's strategic interests in Southeast Asia** and the Strait of Malacca by increasing rapid deployment of military assets in the islands. **Hence, statement 2 is correct.**
- It is commanded by a three-star officer from the Navy, under whom officers and men from all three services (Navy, Air Force, Army) work.
- It conducts bi-annual coordinated patrols (**CORPATs with the navies of Thailand and Indonesia**), the annual SIMBEX maritime exercise with Singapore, and the **biennial Milan multilateral naval exercise**. **Hence, statement 3 is not correct.**
- It also patrols India's exclusive economic zone to suppress gun running, narcotics smuggling, piracy, and poaching, and conducts maritime surveillance, humanitarian assistance and disaster relief (HADR).
- Lt Gen Ajai Singh is its current Commander-in-Chief.

49. Ans: A

Exp:

- The **HTT-40 (Hindustan Turbo Trainer-40)** indigenous trainer aircraft designed and developed by **Hindustan Aeronautics Limited (HAL)** launched during **DefExpo**. **Hence, statement 1 is correct.**
- Mission DefSpace'** is also launched under the ongoing **DefExpo**.
- Mission DefSpace** is an ambitious effort to develop innovative solutions for the three Services (**Indian airforce, Navy and Army**) in the **space domain** through the Indian industry and start-ups.
- This is the **Ministry of Defence's flagship biennial event**, featuring **land, naval, air, and homeland security systems**. **Hence statement 2 is not correct.**



50. Ans: D

Exp:

**Heads of Asian Coast Guard Agencies Meeting (HACGAM):**

- It is an apex level forum facilitating the congregation of all the major Coast Guard Agencies of the Asian region, it was established in 2004.
- It is a **multilateral forum of 23 countries** including Australia, Bahrain, Bangladesh, Brunei, **Cambodia**, China, **France**, India, Indonesia, Japan, South Korea, Lao PDR, Malaysia, Maldives, Myanmar, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Turkiye, Vietnam and one Region i.e., Hong Kong (China).
  - ◆ It includes nations from Europe as well. **Hence statement 1 is not correct.**
- The **Indian Coast Guard (ICG)** is hosting the 18<sup>th</sup> HACGAM in coordination with the HACGAM Secretariat. **Hence statement 2 is not correct.**
- A total of 55 representatives from 18 countries and two International Organisations — **Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia Information Sharing Centre (ReCAAP ISC)** and **United Nations Office on Drugs and Crime - Global Maritime Crime Programme (UNODC-GMCP)** are participating in the meeting.

51. Ans: A

Exp:

**Agni Prime:**

- Recently, **Defence Research and Development Organization (DRDO)** successfully test-fired indigenously developed new generation **medium-range ballistic missile Agni Prime (Agni-P)** from the APJ Abdul Kalam Island at Odisha coast.
- **It is a two-stage canisterised missile. Hence statement 1 is not correct.**
- **It is the latest and sixth variant of the Agni series missiles (under IGMDP - Integrated Guided Missile Development Program). Hence statement 2 is correct.**
- With multiple independently targetable re-entry vehicles, the missile is capable of delivering a number of warheads at separate locations at a distance of 1,000 - 2,000 km.
- The 10.5 metre tall missile with a diameter of 1.2 metre can carry warheads up to 1.5 tonne.
- **It can perform high maneuvers while homing in on targets. Hence statement 3 is correct.**
- These missiles will be inducted in the armed forces after a couple of user associated launches
- It has a dual redundant navigation and guidance system.
- The Agni-P missile would further strengthen India's credible deterrence capabilities.

52. Ans: A

Exp:

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- With multiple independently targetable re-entry vehicles, the missile is capable of delivering a number of warheads at separate locations at a distance of 1,000 - 2,000 km.
- The 10.5 metre tall missile with a diameter of 1.2 metre can carry warheads up to 1.5 tonne.
- **It can perform high maneuvers while homing in on targets. Hence statement 3 is correct.**
- These missiles will be inducted in the armed forces after a couple of user associated launches
- It has a dual redundant navigation and guidance system.
- The Agni-P missile would further strengthen India's credible deterrence capabilities.

53. Ans: A

Exp:

**Central Industrial Security Force (CISF):**

- CISF is **one of the seven Central Armed Police Forces in India** and is responsible for providing security to various public sector undertakings, airports, and other important installations. **Hence, statement 1 is correct.**
  - ◆ The BSF has **air wing, marine wing, an artillery regiment, and commando units**. It currently stands as the world's largest border guarding force. **Hence, statement 2 is not correct.**
- The **CISF was set up under the act of the Parliament of India on March 10, 1969**. Since then, CISF Raising Day is being celebrated on March 10 each year. However, in 2023, the date was revised (12<sup>th</sup> March).

54. Ans: C

Exp:

- Indian Navy's **indigenously built guided missile frigate, INS Sahyadri** participated in a **Maritime Partnership Exercise (MPX) with French Navy (FN)** ships in the **Arabian Sea in March 2023**. **Hence, statement 1 is correct.**



- ◆ The exercise witnessed a wide spectrum of sea evolutions, including cross-deck landings, boarding exercises and seamanship evolutions. The seamless conduct of the exercise reaffirmed the interoperability and high level of cooperation between the two navies.
- ◆ **INS Sahyadri** is fitted with state-of-the-art weapons and sensors, which makes it **capable of detecting and neutralising air, surface and sub-surface threats**. The ship is a part of Indian Navy's Eastern Fleet based at Visakhapatnam.
- **Vajra Prahar - US:** This is a **bilateral military exercise between the special forces of India and the United States**. The exercise focuses on counter-terrorism operations, close quarter combat, and special reconnaissance. **Hence, statement 2 is not correct.**
- **Garuda Shakti - Indonesia:** This is a **bilateral military exercise between the armies of India and Indonesia**. The exercise focuses on counter-terrorism operations, jungle warfare, and special forces operations. **Hence, statement 3 is correct.**

55. Ans: A

Exp:

**Exercise Bold Kurukshetra:**

- It is **conducted** under the ambit of the bilateral arrangement for the joint Army Training and exercises **between the Singapore Army and the Indian Army**.
  - ◆ The exercise was first conducted in 2005.
- **Other exercise between India and Singapore includes Joint Military Training (Air Force), Trilateral Maritime Exercise SIMTEX (With Thailand) and Exercise Agni Warrior (Army).**
- **Hence, option A is correct.**

56. Ans: D

Exp:

- Konkan Shakti is the first-ever tri-services joint exercise between United Kingdom. It started off the west coast of India. **Hence, Pair 1 is correctly matched.**
- Samudra Shakti is a maritime exercise between India and Indonesia, **Hence, Pair 2 is correctly matched.**
- IBSAMAR is a joint Multinational Maritime Exercise between the Indian, Brazilian and South African Navies, **Hence, Pair 3 is correctly matched.**

57. Ans: B

Exp:

- The Astra Mk-1 is a Beyond Visual Range (BVR), **Air-to-Air Missile (AAM)**. **Hence, statement 1 is not correct.**
  - ◆ BVR missiles are capable of engaging beyond the range of 20 nautical miles or 37 kilometers.

- AAMs are fired from an airborne asset to destroy an airborne target.
- The range for Astra Mk-1 is around 110 km. **Hence, statement 2 is correct.**
- The missile has been designed based on requirements specified by the Indian Air Force (IAF) for BVR as well as close-combat engagement, reducing the dependency on foreign sources.
- The missile can travel at speeds more than four times that of sound and can reach a maximum altitude of 20 km, making it extremely flexible for air combat.
- **Designed and developed by:** Defence Research and Development Organisation (**DRDO**), **Hence, statement 3 is correct.**

58. Ans: D

Exp:

**Joint Military Exercises of India with Other Countries**

| Name of Exercise | Country          | Name of Exercise | Country            |
|------------------|------------------|------------------|--------------------|
| Garuda Shakti    | Indonesia        | Vajra Prahar     | India & US         |
| Ekuverin         | Maldives         | Yudh Abhyas      | India & US         |
| Hand-in-Hand     | China            | Shakti Exercise  | India & France     |
| Kurukshetra      | Singapore        | Dharma Guardian  | India & Japan      |
| Mitra Shakti     | Sri Lanka        | Surya Kiran      | India & Nepal      |
| SAMPRITI-X       | Bangladesh       | SIMBEX           | India & Singapore  |
| Maitree Exercise | India & Thailand | Exercise LAMITYE | India & Seychelles |

- **Hence, option D is the correct option.**

59. Ans: D

Exp:

- **BRAHMOS** is a joint venture between the Defence Research and Development Organisation of India (**DRDO**) and the **NPOM of Russia**.
- It is a **two-stage** (solid propellant engine in the first stage and liquid ramjet in second) **air to surface missile** with a flight range of around 300 km. **Hence, statement 1 is not correct.**
- Brahmos is one of the fastest **cruise missiles** currently operationally deployed with speed of Mach 2.8, which is 3 times more than the speed of sound. **Hence, statement 2 is not correct.**

