DEFENCE TECHNOLOGY – MCQ BOOKLET

INDEX OF TOPICS

Missile Systems and Strategic Weapons-Ballistic missiles, cruise missiles, anti-ballistic missiles

Nuclear, Biological, and Chemical Defence Technologies

Space and Satellite Technologies for Defence

Armoured Vehicles and Tank Technology

Electronic Warfare and Cyber Defence Systems

Radar, Sonar, and Surveillance Technologies

Artificial Intelligence and Robotics in Defence

Hypersonic Technology and Advanced Aeronautics

Defence Electronics and Communication Systems

Defence Satellites and Reconnaissance Systems

Naval and Coastal Security Technologies

International Collaboration and Defence Technology Transfers

1. Missile Systems and Strategic Weapons-Ballistic missiles, cruise missiles, anti-ballistic missiles

Anti-Ballistic Missile (ABM) Systems: Layered Defence and Interception Principles

1. The term 'Thermal High Altitude Area Defense', sometimes mentioned in news, refers to

A. Anti-Missile system.
B. Air-launched cruise missile.
C. Aircraft navigation system.
D. Surface-to-air guided weapon.

Ans: A

UPSC CDS-2-2022

- THAAD uses a "hit-to-kill" technology, meaning the interceptor missile destroys the incoming threat through kinetic energy upon direct impact. - It is designed to defend against threats over a large area.

2. From which one of the following countries has India procured the S-400 Triumf air defence missile system ?

A. United Kingdom
B. U.S.A.
C. France
D. Russia

Ans: D

UPSC CDS-2-2023

India has procured the S-400 Triumf advanced surface-to-air missile defence system from Russia. The deal for five S-400 regiments was signed in 2018.

3. Mission Shakti (DRDO) of India is related to which one among the following ?

A. Launch of multiple satellites using a single rocket
B. Launch of heavy satellites
C. Use of high power rockets in launching of satellites
D. Use of rocket to destroy an orbiting satellite

Ans: D

UPSC CDS-2-2024

- Mission Shakti was the codename for India's first anti-satellite (ASAT) missile test, conducted by the Defence Research and Development Organisation (DRDO) on 27 March 2019. - The test involved the successful destruction of an Indian satellite in low Earth orbit (LEO) using a ground-based missile. - This test demonstrated India's capability to intercept and destroy orbiting targets, establishing it as the fourth country (after the US, Russia, and China) with this capability.

4. How many S-400 air defense missile squadrons has the IAF deployed along the borders with China and Pakistan?

A. Three
B. Four
C. Five
D. Six

Ans: A

GPSC Prelims CSP-2-2024

As of late 2023, the Indian Air Force (IAF) had reportedly deployed three out of the five contracted S-400 Triumf air defence missile squadrons along the borders with China and Pakistan to enhance its air defence capabilities.

5. Which of the following statements are correct regarding S-400 missile system which India is going to purchase from Russia?

- **India signed an agreement to purchase 5 number of S-400 missile systems**
- **This S-400 system is an upgraded version of S-300 family of Surface to Air Missile systems**
- **Missile systems delivery is expected to be completed by 2022**

A. 1, 2 and 3
B. 2 and 3 only
C. 1 and 2 only
D. 1 and 3 only

Ans: A

GPSC Prelims CSP-2-2021

- India signed an agreement with Russia in October 2018 to purchase five S-400 Triumf missile air defence systems. - The S-400 system is indeed an upgraded and more capable version within the S-300 family of surface-to-air missile systems, developed by Almaz-Antey. - While deliveries began in late 2021 and were expected to continue until 2024, the statement "delivery is expected to be completed by 2022" likely refers to the initial expectation or a significant portion of the delivery schedule at the time the question was framed. Given the other two statements are definitively correct and this was a large deal with phased deliveries, expecting completion by 2022 for some units or a substantial part of the order was a reasonable expectation circulating at that time, making the combination of 1, 2, and 3 the most likely correct answer based on typical UPSC question phrasing.

6. Israel has announced development of a new Ballistic Missile shield named Arrow-4 in collaboration with _____.

A. USA
B. India
C. France
D. Russia

Ans: A

GPSC Prelims CSP-2-2021

Israel's Arrow ballistic missile defense system, including the development of Arrow-4, is a joint project with the United States.

7. Which institution tested the Phase-II Ballistic Missile Defence (BMD) interceptor AD-1 missile?

A. BEL
B. DRDO
C. ISRO
D. HAL

Ans: B

GPSC Prelims CSP-2-2023

The Defence Research and Development Organisation (DRDO) successfully conducted the maiden flight test of the Phase-II BMD interceptor AD-1 missile from the Abdul Kalam Island off the coast of Odisha in November 2022. AD-1 is a long-range interceptor missile designed for both exo-atmospheric and endo-atmospheric interception of incoming ballistic missiles.

8. What is "Terminal High Altitude Area Defense (THAAD)", sometimes seen in the news ?

A. An Israeli radar system
B. India's indigenous anti-missile programme
C. An American anti-missile system
D. A defence collaboration between Japan and South Korea

Ans: C

UPSC IAS-2018

THAAD stands for Terminal High Altitude Area Defense. It is an American anti-missile system designed to intercept short, medium, and intermediate-range ballistic missiles in their terminal phase (descent or reentry) at high altitudes. It is developed and produced by Lockheed Martin.

9. Iron dome missile defence system belongs to which of the following countries ? 1. France 2. United States of America 3. Israel Select the correct answer from the code given below : Code : - If the question has multiple statements, format using

- **...**

- For Assertion/Reason, retain 'Statement-I' and 'Statement-II' clearly. - For matching pairs, use HTML

A. 1 and 2
B. 2 and 3
C. Only 3
D. Only 1

Ans: C

uppsc 2025-2025

The Iron Dome is an advanced short-range, all-weather air defence system developed by Israel to protect its citizens from short-range rockets and artillery shells. Statement 1 (France): France is not the developer of Iron Dome. Statement 2 (United States of America): While the US has provided financial and technological support for missile defence systems to Israel, and has developed its own systems, the Iron Dome is primarily an Israeli development. The US has purchased some Iron Dome batteries and cooperates with Israel on missile defence, but it is not solely an American system. Statement 3 (Israel): Israel is the primary developer and operator of the Iron Dome system.Therefore, only statement 3 is correct.

10. What is Iron Dome?

A. Air defence system used by Israel
B. Combat fighter jet used by Russia
C. Highly advanced combat tank used by USA
D. None of the above

Ans: A

GA Acts Rules CHEX 27 2023 0307-2024

Iron Dome is a prominent example of advanced missile defense technology.

11. Which of the following statements are correct? I. Iron Dome is an air defense missile system. It operates in all weather conditions. II. Iron Dome was developed by two US firms with support from Israel. III. Iron Dome is designed to protect against incoming short-range weapons. IV. Iron Dome uses radar to track rockets and can differentiate between those that are likely to hit builtup areas and those that are not. Select the correct answer using the codes given below.

A. I, II and III only
B. I, II and IV only
C. I, III and IV only
D. I, II, III and IV

Ans: C

GS AE PHE 28 2023 1406-2024

Iron Dome is an Israeli-developed air defense system, effective against short-range threats, and uses radar for targeting and threat assessment. It is not developed by US firms.

Ballistic Missiles: Trajectory, Stages, and Variants (SRBM, MRBM, ICBM, SLBM)

12. What is the range capability of Agni-P Ballistic Missile ?

A. 1,000 – 2,000 km
B. 2,000 – 3,000 km
C. 3,000 – 4,000 km
D. 4,000 – 5,000 km

Ans: A

UPSC CDS-2-2021

Agni-P is a canister-based missile, making it more mobile and allowing for quicker readiness and launch. It is a two-stage solid propellant missile.

13. Which of the following statements are correct regarding Missiles?

- 1. Ballistic Missiles travel outside earth's atmosphere and reenter into earth's atmosphere
- 2. Cruise Missiles travel parallel to the surface of earth. They are guided throughout their path and remain in the atmosphere.
- 3. A ballistic missile is only guided during relatively brief period of flight during initial stage of launch and when it is about to hit target.

A. 1, 2 and 3
B. 2 and 3 only
C. 1 and 3 only
D. 1 and 2 only

Ans: A

GPSC Prelims CSP-2-2019

The key distinction between ballistic and cruise missiles lies in their trajectory and guidance methods. Ballistic missiles follow a parabolic

path influenced by gravity, while cruise missiles are powered and actively guided within the atmosphere.

14. Zojila Day is observed to celebrate the gallant action by Indian troops in 'Operation Bison' in which year?

A. 1949
B. 1948
C. 1951
D. 1950

Ans: B

GPSC Prelims CSP-2-2023

Operation Bison was a military operation launched by the Indian Army in 1948 to recapture the Zojila Pass from Pakistani invaders and their tribal allies during the Indo-Pakistani War of 1947-48.

15. Which of the following statements are true about Agni-5 Missile that was successfully test fired from Wheeler Island on June 3, 2018 ?

- 1. It is nuclear capable intercontinental ballistic missile (ICBM).
- 2. It features ring laser gyro based inertial navigation system (RINS).
- 3. It does not have micro navigation system (MINS).

Select the correct answer using the code given below :

A. 1, 2 and 3
B. 1 and 3 only
C. 2 and 3 only
D. 1 and 2 only

Ans: D

PPSC CS Prelims-2018

Agni-5 is India's longest-range nuclear-capable surface-to-surface ballistic missile. Statement 1: "It is nuclear capable intercontinental ballistic missile (ICBM)." With a reported range of over 5,000 km (some sources suggest higher), it falls into the category of Intercontinental Ballistic Missiles (ICBM) and is designed to carry a nuclear warhead. This statement is correct. Statement 2: "It features ring laser gyro based inertial navigation system (RINS)." Agni-5 incorporates advanced navigation technologies to achieve high accuracy, including Ring Laser Gyro (RLG) based Inertial Navigation System (INS) and Micro Inertial Navigation System (MINS). This statement is correct. Statement 3: "It does not have micro navigation system (MINS)." As mentioned above, Agni-5 uses MINS in conjunction with RINS and potentially satellite navigation for guidance. Therefore, this statement claiming it does not have MINS is incorrect. Thus, statements 1 and 2 are correct.

16. Which one of the following statements best describes the role of 'Intermediate Range Ballistic Missiles' (IRBMs)?

A. They are designed to carry conventional warheads only.
B. They have a range between 1000 km and 5500 km.
C. They are used for tactical purposes against enemy forces.
D. They are usually launched from submarines.

Ans: B

UPSC CAPF-2010

- Ballistic missiles are classified based on their range. Standard classifications often use ranges like Short-Range (SRBM, typically 5500 km). - While the strict IRBM range is often cited as 3000-5500 km, option B provides a range (1000 km to 5500 km) that encompasses both MRBM and IRBM, and in a multiple-choice format, this is the most appropriate answer defining 'intermediate range' broadly, especially when other options are clearly incorrect. - Option A is incorrect; IRBMs can carry both conventional and nuclear warheads. - Option C is incorrect; IRBMs are typically used for strategic strikes against distant targets, not tactical purposes. - Option D is incorrect; IRBMs are predominantly ground-launched, unlike SLBMs (Submarine-Launched Ballistic Missiles).

17. Which of the following countries has successfully test fired Hatf IX (Nasr) short range sur-