**General Studies-3; Topic – Internal security.**

**India's Nuclear Triad**

1) **Introduction**
   - Nuclear Triad means the capability of delivering nuclear weapons by aircraft, land based ballistic missiles and submarine launched missiles.
   - India declared that its nuclear triad is operational after indigenous Ship Submersible Ballistic Nuclear (SSBN) INS Arihant achieved a milestone by conducting its first deterrence patrol.
   - India has put in place a robust nuclear command and control structure, effective safety assurance architecture and strict political control, under its Nuclear Command Authority.

2) **Significance**
   - INS Arihant, which is equipped with nuclear-tipped ballistic missiles completed a nearly month-long nuclear deterrence patrol.
   - INS Arihant will enable India to assert its rights on water, besides land and air.
   - It now joins a small group of countries — United States, Russia, China, France and United Kingdom — that have this capability.
   - Arihant’s successful nuclear deterrence patrol signifies India’s attainment of complete mastery over all the highly complex systems and procedures.
   - India’s nuclear deterrence 20 years after the country went nuclear is now secure as it rests on a triad of land, air and undersea vectors.
   - The success of INS Arihant enhances India’s security needs.
   - Given India’s ‘No-First-Use’ (NFU) in launching nuclear weapons, the SSBN is the most dependable platform for a second-strike.
   - SSBNs are designed to prowl the deep ocean waters and carry nuclear weapons.
   - Because they are powered by nuclear reactors, these submarines can stay underwater indefinitely without the adversary detecting it.
   - The other two platforms — land-based and air-launched are far easier to detect.

3) **Landmark Development**
   - It demonstrates that India, apart from its capability to deliver nuclear weapons both from land and from air, can now also do so from under water.
   - It provides the ultimate credibility to nuclear deterrence.
   - It sends out an unambiguous message that nuclear blackmail will not work.
   - The nuclear deterrence patrol signifies India having come off age as a mature nuclear-armed state.
   - This exercise is testimony to India’s technological prowess.
   - It shows a high degree of engineering skill and workmanship with substantial indigenous component.

4) **INS Arihant**
   - The Arihant is the lead ship of India's Arihant class of nuclear-powered ballistic missile submarines.
   - These will form a potent and formidable weapons system which will ensure national security.
   - Arihant is India’s first indigenously designed and built nuclear-powered submarine.
   - Arihant is armed with K-15 Sagarika missiles with a range of 750 km.
   - It will carry the longer 3,500 km range K-4 missiles being developed by the Defence Research and Development Organisation (DRDO).
This is the longest in the Navy’s fleet of submarines.
The second submarine in the series, Arighat is now undergoing sea trials after which it will be inducted into service.
INS Arihant was launched in 2009 by then Prime Minister Manmohan Singh.
Since then, it had undergone extensive sea trials.

5) India’s Approach Towards Nuclear Weapons
- Arihant’s nuclear deterrence patrol does not constitute any shift in India’s approach towards nuclear weapons.
- India remains committed to “the goal of a nuclear weapon free world, through global, verifiable and non-discriminatory nuclear disarmament”.
- India follows no first use of nuclear weapons, and non-use of nuclear weapons against non-nuclear weapon states.
- In the absence of a nuclear-free world, India continues to regard nuclear weapons as a deterrent designed to prevent a nuclear attack against it.
- Accordingly, as per its doctrine, India has sought to ensure that its deterrent is “credible”.

6) Nuclear Submarine Club
- US has 72 nuclear submarines, Russia over 40, UK and France have around 8-12 each.
- China has around 10 nuclear subs, including 5 advanced JIN-class SSBNs with 7400 Kms range JL-2 missiles.

7) Way Forward
- Augmenting naval strategic capabilities is an imperative for India, especially considering the strategic importance of the Indian Ocean region.
- It is imperative that the government revisit manpower costs, particularly pensions and benefits, if it is to increase funding for defence research and development.
- Experts believe a real sea-based deterrence requires at least three atomic-powered submarines.
- India now needs to focus ahead and move fast, if it is to fully secure and advance its cherished strategic autonomy.