Syllabus subtopic: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.

Prelims and Mains focus: About Avangard and its significance; tensions in US-Russia relations

News: Russia has deployed its first hypersonic nuclear-capable missiles, called Avangard, with Vladimir Putin boasting that it puts his country in a class of its own.

Background:

- Russian President Putin unveiled the Avangard and other prospective weapons systems in his state-of-the-nation address in March 2018, saying its ability to make sharp manoeuvres on its way to a target would render missile defense useless. “It heads to target like a meteorite, like a fireball,” he said at the time.
- In December 2018, the Avangard was launched from the Dombarovskiy missile base in the southern Urals and hit a practice target on the Kura shooting range on the Kamchatka peninsula, 3,700 miles (6,000km) away.

About Avangard missile

- The Avangard hypersonic glide vehicle can fly at 27 times the speed of sound, as a technological breakthrough comparable to the 1957 Soviet launch of the first satellite.

- The Russian leader said the Avangard had been designed using new composite materials to withstand temperatures of up to 2,000°C (3,632°F) which can be reached while travelling at hypersonic speeds. The missile can carry a nuclear weapon of up to 2 megatons.

- The Avangard is launched on top of an intercontinental ballistic missile, but,
unlike a regular missile warhead, which follows a predictable path after separation, it can make sharp manoeuvres en route to its target, making it harder to intercept.

- The Avangard had been put on duty with a unit in the Orenburg region in the southern Ural mountains.

Why Russia felt the need to develop such missile systems

Putin has said Russia had to develop the Avangard and other weapons systems because of US efforts to develop a missile defence system that he claimed could erode Russia’s nuclear deterrent. Moscow has scoffed at US claims that its missile shield isn’t intended to counter Russia’s missile arsenals.

Significance

- Putin has said Russia’s new generation of nuclear weapons can hit almost any point in the world and evade a US-built missile shield, though some western experts have questioned how advanced some of the weapons programmes are.
- This week, Putin noted that for the first time Russia was leading the world in developing a new class of weapons, unlike in the past when it was catching up with the US.
- The defence ministry said last month it had demonstrated the Avangard to a team of US inspectors as part of transparency measures under the New Start nuclear arms treaty between the two countries.

About China’s hypersonic missile

- China has tested its own hypersonic glide vehicle, believed to be capable of travelling at least five times the speed of sound.
- It displayed the weapon called Dong Feng 17, or DF-17, at a military parade marking the 70th anniversary of the founding of the Chinese state.

What about USA?
US officials have talked about putting a layer of sensors in space to more quickly detect enemy missiles, particularly the hypersonic weapons. The administration also plans to study the idea of basing interceptors in space, so the US can strike incoming missiles during the first minutes of flight when the booster engines are still burning.

The Pentagon has been working on developing hypersonic weapons in recent years, and the defence secretary, Mark Esper, said in August that he believed it would be a couple of years before the US had one.