

04-04-2024

New Generation Ballistic Missile Agni-Prime

Why in News?

- Strategic Forces Command (SFC), along with Defence Research and Development Organisation (DRDO), conducted the successful flight-test of New Generation Ballistic Missile Agni-Prime from Dr APJ Abdul Kalam Island off the coast of Odisha on April 03, 2024.



More About the News

- The test met all the trial objectives validating its reliable performance, as confirmed from the data captured by a number of range sensors deployed at

different locations, including two downrange ships placed at the terminal point.

- The launch was witnessed by the Chief of Defence Staff, Chief of Strategic Forces Command and senior officials from DRDO & the Indian Army.

About Agni- Prime (Agni-P)

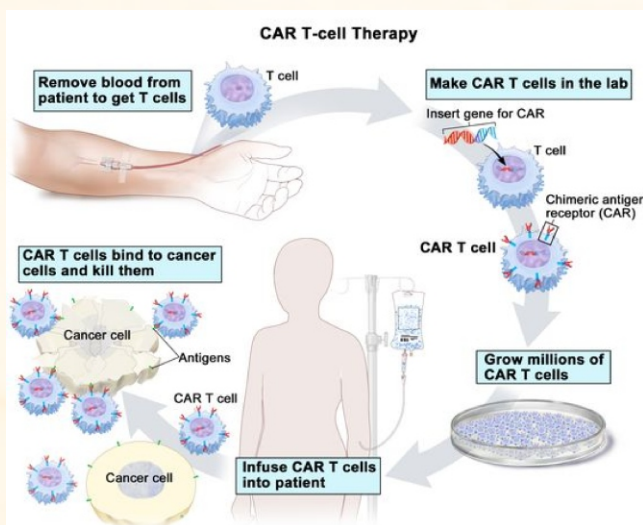
- Agni-P or Agni-Prime is a new generation nuclear-capable medium-range ballistic missile (MRBM) developed by the DRDO that incorporates technological advances from Agni-IV and Agni-V and is considered a successor for Agni-I and Agni-II missiles in the operational service of the SFC.
- Agni-Prime, with a strike range of 1,000 to 2,000 km, has significant upgrades, which include composite motor casing, Manoeuvrable Re-entry Vehicle (MaRV), improved propellants, and navigation and guidance systems.
- It is a two-stage, surface-to-surface, road-mobile and solid-fueled missile which is transported by a truck and launched via a canister, like the country's first intercontinental ballistic missile (ICBM), Agni-V (over 5,000 km). It is a ballistic missile with dual redundant navigation and guidance system.
- Although Agni-Prime looks similar to Agni-III, the weight is reduced by half. Agni-P will replace older generation missiles such as Prithvi-II (350 km), Agni-II (2,000 km), Agni-III (3,000 km) and Agni-4 (4,000 km) ballistic missiles. Agni-Prime incorporates upgrades such as propulsion systems, composite rocket motor casings, and advanced navigation and guidance systems.

- Along with Agni-V, Agni-P will provide India with stronger deterrence against countries such as China and Pakistan. While Agni-V brings all of China within its strike range, Agni-P seems to have been developed to counter Pakistan's forces.
- Agni-P is developed to achieve maximum manoeuvrability against missile defence systems and higher accuracy for precision strikes.

CAR-T Cell Therapy

Why in the News?

- President Droupadi Murmu will will dedicate CAR-T Cell Therapy to the nation at IIT Bombay on 4th April 2024. The Chimeric Antigen Receptor (CAR)-T Cell Therapy (used to treat cancer patients) has been developed in India by IIT Bombay-incubated Company Immuno-Adoptive Cell Therapy (Immuno ACT).



More About the CAR-T Therapy

- The CAR-T Cell Therapy product has been developed as a collaborative effort between IIT Bombay and Tata Memorial Centre (TMC). Designed and developed at IIT Bombay, the therapy has undergone integrative process development and manufacturing at Immuno-ACT.
- The CAR-T Cell Therapy product is expected to save many lives at much lower cost compared to the cost of such products available outside India.

- CAR T-cell therapy is a way to get immune cells called T cells (a type of white blood cell) to fight cancer by changing them in the lab so they can find and destroy cancer cells. CAR T-cell therapy is also sometimes talked about as a type of cell-based gene therapy, because it involves altering the genes inside T cells to help them attack the cancer.
- In CAR T-cell therapies, T-cells are taken from the patient's blood and are changed in the lab by adding a gene for a receptor (called a chimeric antigen receptor or CAR), which helps the T-cells attach to a specific cancer cell antigen. The CAR T cells are then given back to the patient.
- CAR T-cell therapy can be very effective against some types of hard-to-treat cancers, but it can also sometimes cause serious or even life-threatening side effects. Because of this, it needs to be given in a medical center that is specially trained in its use, and patients need to be watched closely for several weeks after getting the CAR-T cells.
- Barriers to effective CAR-T cell therapy include severe life-threatening toxicities, modest anti-tumor activity, antigen escape, restricted trafficking, and limited tumor infiltration.
- In addition, the host and tumor microenvironment interactions with CAR-T cells critically alter CAR-T cell function. Furthermore, a complex workforce is required to develop and implement these treatments.
- In order to overcome these significant challenges, innovative strategies and approaches to engineer more powerful CAR-T cells with improved anti-tumor activity and decreased toxicity are necessary.

World Bank Projects India's Economy To Grow At 7.5 Per Cent in 2024

Why in the News?

- According to the World Bank's recent projections, the Indian economy is projected to grow at 7.5 per cent in 2024,

revising its earlier projections for the same period by 1.2 per cent.

More About the News

- The World Bank forecasts India's output growth to reach 7.5 percent in FY24, driven by resilient activity in services and industry. However, growth is expected to moderate to 6.6 percent over the medium term.
- Over the medium term, the fiscal deficit and government debt in India are projected to decline, supported by robust output growth and consolidation efforts by the central government.
- India's economic activity in 2023 Q4 exceeded expectations, with an 8.4 percent growth compared to the previous year, supported by increased investment and government consumption.
- India's composite purchasing managers index (PMI) stood at 60.6 in February, well above the global average of 52.1, indicating expansion.
- Inflation has remained within the Reserve Bank of India's (RBI) target range, and financial conditions have remained accommodative.
- Domestic credit issuance to the commercial sector grew by 14 percent year-on-year (YoY) in December 2023, with financial soundness indicators showing improvement. Foreign reserves increased by 8 percent in the year to January 2024.

About World Bank

- The World Bank was established in 1944 to help rebuild Europe and Japan after World War II. Its official name was the International Bank for Reconstruction and Development (IBRD). When it first began operations in 1946, it had 38 members.
- It provides loans and grants to the governments of low- and middle-income countries for the purpose of pursuing capital projects.
- The World Bank promotes long-term economic development and poverty reduction by providing technical and financial support to help countries

implement reforms or projects, such as building schools, providing water and electricity, fighting disease, and protecting the environment.

- The Bank is also one of the world's largest research centers in development. It has specialized departments that use this knowledge to advise countries in areas like health, education, nutrition, finance, justice, law and the environment.

IMD Forecasts Heatwave Conditions

Why in the News?

- India Meteorological Department (IMD) has forecast heatwave conditions over parts of east and peninsular India during the next four days. IMD predicted a gradual rise in maximum temperatures by 2 to 3 degrees celsius over many parts of East India during the next three days.



About Heatwave Conditions

- A heatwave is a prolonged period of excessively hot weather, typically accompanied by high humidity, posing health risks such as heatstroke and dehydration.
- Heatstroke symptoms need urgent attention : moving the person to a cooler area, offering cold water and applying damp cloth to lower body temperature. Intravenous saline may be needed to restore fluids and electrolytes.

- IMD's forecast highlighted the likelihood of "extreme heat" across several Indian states in the upcoming months. The prediction indicated an increase in above-normal heatwave days over most plain regions, with expectations of 10 to 20 heatwave days in various parts of the country compared to the usual four to eight days.
- Specifically, central India, adjoining areas of the northern plains, and south India were mentioned to experience above-normal heatwave days in April.
- The forecast emphasised that Gujarat, central Maharashtra, north Karnataka, Rajasthan, Madhya Pradesh, Odisha, north Chhattisgarh, and Andhra Pradesh would bear the brunt of heatwaves.

Monetary Policy Committee

Why in the News?

- The first bi-monthly Monetary Policy Committee meeting of the Financial Year 2024-25 of the Reserve Bank of India began in Mumbai on 3rd April 2024. The monetary policy statement will be announced by RBI Governor Shaktikanta Das on 5th April 2024.

About Monetary Policy Committee

- According to the Section 45ZB of the amended RBI Act, 1934, the six-member Monetary Policy Committee (MPC) is constituted by the Government.

- There are a total of six members in the committee, three members are from RBI itself and the rest of them are appointed by the Government of India.
- The MPC consists of six members: RBI Governor, RBI Deputy Governor in charge of monetary policy, One official nominated by the RBI Board and the Government of India will propose three members (committee chaired by the Cabinet Secretary).
- Members of the MPC will serve for four years and are not eligible for reappointment. The members of the Monetary Policy Committee are appointed for four years.
- The primary objective of the RBI's monetary policy is to maintain price stability while keeping in mind the objective of growth.
- To target inflation, i.e., to maintain inflation to a certain level (4 % +/- 2%), the Reserve Bank of India (RBI) is responsible for containing inflation targets at 4% (with a deviation of 2%).



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