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सत्यमेव जयते



MK Yadav Sir

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LIVE MINT

Page 2

DRUGS PRICES CONTROL ORDER

(Syllabus: GS Paper 3 - Economy)

Prices of 651 essential drugs decline as NPPA revises cap

Priyanka Sharma
priyanka.sharma@livemint.com
NEW DELHI



The drugs include painkillers, antibiotics, anti-infectives. MINT

The prices of 651 essential medicines have dropped by an average of 6.73% from April following a price cap, the government said on Monday.

The National Pharmaceutical Pricing Authority (NPPA) last month set the wholesale price index (WPI) rate for calendar year 2022 at 12.12%, allowing drug manufacturers to increase prices of essential medicines within this cap over 2021 prices. These drugs include painkillers, antibiotics, anti-infectives and cardiac medicines. The new prices kicked in on 1 April.

The government controls the prices of drugs through the Drugs Prices Control Order (DPCO), 2013. Essential medicines or formulations have a ceiling price, which can be increased each year based on the WPI rate set by the government. "However, in September 2022, the ministry of health and family welfare made changes to the National List of Essential Medicines (NLEM), adding 870 medicines. These medicines were scheduled under DPCO, 2013, and the NPPA began revising the valid ceiling prices of these drugs," a senior health ministry official said.

"Out of the 870 essential medicines, 651 have new ceiling prices, resulting in an average reduction of 16.62%. Therefore, instead of an expected increase of 12.12%, the estimated reduction in the valid ceiling prices of these 651 essential medicines is an average of 6.73%," said the official.

Health minister Mansukh Mandaviya said, "In November 2022, the government revised the list and prices of essential medicines. Under DPCO, 2013, the work of revising the applicable ceiling price of such notified drugs has been initiated by NPPA. So far, new ceiling prices of 651 out of 870 essential medicines have been notified. Due to which the approved ceiling price of medicines has decreased by an average of 16.62%."

"As a result, consumers will save an estimated ₹3,500 crore annually. The company can increase the prices of medicines with effect from 1 April, 2023, to the extent of 12.12% of the valid ceiling price of 651 essential medicines linked to WPI. Even if the company were to increase the price in full, an average reduction of 6.73% is estimated," Mandaviya said in a tweet.

The move coincides with a surge in covid infections in India, with active cases increasing from 18,389 to 20,219 in the last 24 hours. However, these infections have not been as deadly as those in the first and second wave of the covid-19 pandemic.

Context: The prices of 651 essential medicines have dropped by an average of 6.73% from April following a price cap.

- The government controls the prices of drugs through the **Drugs Prices Control Order (DPCO), 2013.**
- **Essential medicines** or formulations have a ceiling price, which can be increased each year based on the WPI rate set by the government.
- Recently, the **National Pharmaceutical Pricing Authority (NPPA)** set the wholesale price index (WPI) rate for calendar year 2022 at 12.12%, allowing drug manufacturers to increase prices of essential medicines within this cap over 2021 prices.

Drugs Prices Control Order (DPCO), 2013

- **About**: The Drugs Prices Control Order is an order issued by the Government of India under **Sec. 3 of Essential Commodities Act, 1955** to regulate the prices of drugs.
  - The Order **inter alia provides the list of price controlled drugs,** procedures for fixation of prices of drugs, method of implementation of prices fixed by Govt., penalties for contravention of provisions etc.
- **Implementing Agency**: For the purpose of implementing provisions of DPCO, powers of Govt. have been vested in **NPPA**.
  - NPPA was **established on 29th August 1997** as an independent body of experts as per the decision taken by the Cabinet committee in September 1994 while reviewing Drug Policy.
  - The Authority, interalia, has been **entrusted with the task of fixation/revision of prices of pharmaceutical products** (bulk drugs and formulations), enforcement of provisions of the Drugs (Prices Control) Order and monitoring of the prices of controlled and decontrolled drugs in the country.
- **Drugs under price control: Not all the drugs** marketed in the country under price control.
  - The **National List of Essential Medicines (NLEM) 2011** is adopted as the primary basis for determining essentiality, which constitutes the list of scheduled medicines for the purpose of price control.
  - The **DPCO 2013** contains more than 600 scheduled drug formulations spread across 27 therapeutic groups.
  - However, the **prices of other drugs can be regulated**, if warranted in public interest.

PIB

April 4

PMKKKY
(Syllabus: GS Paper 3 - Economy)

District Mineral Foundation (DMF) in 626 Districts of 23 States

Context: Information given by Union Minister of Coal, Mines and Parliamentary Affairs in Rajya Sabha that concerned State Governments have established **District Mineral Foundations (DMFs)** in 626 districts in 23 states in the country.

Key Points

- Ministry of Mines circulated guidelines for **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)** vide order dated 16.09.2015 to be implemented by the DMF for taking up development and welfare works in mining affected areas.
- As per the **PMKKKY guidelines,** instruction have been issued to the DMFs for identification of affected areas and people to be covered under the **PMKKKY scheme and spend at least 60% of the funds on High Priority areas like:**
    - drinking water supply;
    - environment preservation and pollution control measures;
    - health care;
    - education;
    - welfare of women and children;
    - welfare of aged and disabled people;
    - skill development; and
    - sanitation and up to 40% on Other **Priority areas:**
        - physical infrastructure;
        - irrigation;
        - energy and watershed development; and
        - any other measures for enhancing environmental quality in mining district.

Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)

- **About**: In 2015, The Ministry of Mines launched the Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY) for the **welfare of areas and people affected by mining-related operations,** by using the funds generated by District Mineral Foundations (DMFs).
- **DMF**: Section 9B of the **MMDR Act, 1957** empowers the State Government to establish **District Mineral Foundation (DMF) Trust** in all the Districts affected by mining for the benefit of the people and areas affected by mining activities.
    - DMF is a **non-profit body,** established in all districts affected by mining-related operations to work for the interest and benefit of people and areas affected by mining.

PIB

April 4

PM-DevINE
(Syllabus: GS Paper 3 - Infrastructure)

Generation of Livelihood for Youths and Women under PM-DevINE

Context: Prime Minister's Development Initiative for North East Region (PM-DevINE), was announced as a new Central Sector Scheme with an initial allocation of Rs 1500 crore in the Union Budget 2022-23, information was given by **Minister for Development of North Eastern Region** in the Lok Sabha.

- The scheme will have 100% **Central funding**, and has an outlay of Rs. 6,600 crore for the 4 year period from 2022-23 to 2025-26 (remaining years of the **15th Finance Commission p**eriod).

Prime Minister's Development Initiative for North East Region (PM-DevINE)

- **About**: It is a new scheme for the **Northeastern states** which was announced in the Union Budget.
- **Objectives**:
  - **Fund infrastructure** convergently, in the spirit of PM GatiShakti.
  - **Support social development projects** based on felt needs of the NER.
  - Enable **livelihood activities** for youth and women.
  - Fill the **development gaps** in various sectors.
- **Implementation:** PM-DevINE will be implemented by the **Ministry of Development of North Eastern Region (DoNER)**, through the North Eastern Council or central ministries and agencies.
- **Time constraints:** Efforts will be made to complete the PM-DevINE projects by **2025-26** so that there are no committed liabilities beyond this year.
- **Significance**: The parameters of N-E states in respect of **Basic Minimum Services (BMS)** are well below the national average and there are critical development gaps as per the **NER District Sustainable Development Goals (SDG) Index 2021-22** prepared by NITI Aayog, UNDP and MDoNER.



TIMES OF INDIA

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GEOGRAPHICAL INDICATION TAG

(Syllabus: GS Paper 3 - Agriculture)

Banarasi Paan, Langda among 33 new products to get GI tag

Binay Singh@timesgroup.com

Getty Images/iStockphoto



PAN-TASTIC

Varanasi: The famous Banarasi paan and Banarasi Langda mango are the two latest products from Varanasi to have received the Geographical Indication (GI) tag.

As many as 33 products were granted GI certification on March 31 by the GI Registry, Chennai. Among them, 10 products belong to UP, including three from Varanasi. Apart from paan and mango, another famous farming product of Varanasi, the Ramnagar Bhanta (brinjal), was also granted GI certification.

Of the total 441 Indian products and 34 foreign goods that have been granted the GI tag so far, UP alone accounts for 45 goods, 20 of them from the Varanasi region.

The "Adamchini Chawal" (rice) of neighboring Chandauli district joined the GI club a month ago.

With the new entrants, Varanasi has now started getting GI tags in agricultural and horticultural goods. Till now, the city was known mainly for its GI-tagged handloom and handicraft goods.

Rajni Kant, a Padma Shree awardee who facilitated GI certification for 20 goods, said: "I express my gratitude to the PM, who is also the MP of Varanasi, for taking a keen interest in promoting the traditional GI products. With his inspiration, the GI goods are going from local to global in Atmanirbhar Bharat Abhiyan and the country is displaying its heritage all over the world."

"The National Bank for Agriculture and Rural Development (NABARD), Lucknow played a pivotal role in supporting local products for getting the GI certification," he said.

"About 20 lakh people are engaged in the production of all GI goods in Varanasi and eastern UP, making an annual turnover of nearly Rs 25,500 crore," Kant added.

According to the GI Registry, the 10 newly certified goods from UP, among 33 products, include Aligarh Tala (lock), Bakharia Brassware, Banda Shazar Patthar Craft, Nagina Wood Craft, Pratapgarh Aonla (gooseberry), Hathras Hing (asafetida), Banarasi Langda mango, Ramnagar Bhanta, Muzaffarnagar Gur (jaggery), and Banarasi Paan.

Context: The famous **Banarasi paan and Banarasi Langda mango** are the two latest products from Varanasi to have received the **Geographical Indication (GI)tag.**

- Apart from paan and mango, another famous farming product of Varanasi, the **Ramnagar Bhanta (brinjal),** was also granted GI certification.

Geographical Indication (GI) Tag

- **About**: It is an indication **used to identify goods having special characteristics** originating from a definite geographical territory.
- **GI Products**: It is primarily an **agricultural, natural or a manufactured product** (handicrafts and industrial goods)
- **Geographical Indications of Goods (Registration and Protection) Act, 1999**: provide for the registration and better protection of geographical indications relating to goods in India.
- **Governed and directed by**: The WTO Agreement on **Trade-Related Aspects of Intellectual Property Rights (TRIPS).**
- **Articles 1 (2) and 10 of the Paris Convention**: protection of **industrial Property and Geographical Indication** are elements of Intellectual Property.
- **Validity**: for a **period of 10 years** following which it **can be renewed.**
- **Eligibility**: **Any association of persons, producers, organisation or authority** established by or under the law can apply.
  - The **applicant must represent the interest of the producers.**
- **Process of registration:** filing of application, preliminary scrutiny and examination, show cause notice, publication in the geographical indications journal, opposition to registration, and registration.
- **Significance**
  - **Bar on selling**: Once a product gets this tag, any person or company **cannot sell a similar item** under that name.
  - **Legal protection and prevention**: GI registration of a product provides it **legal protection** and prevention against unauthorised use by others.
  - **Promote exports**: GI tag **helps in promoting the exports** of the product.
  - **Authenticity**: It also provides comfort to customers about the **authenticity of that product.**

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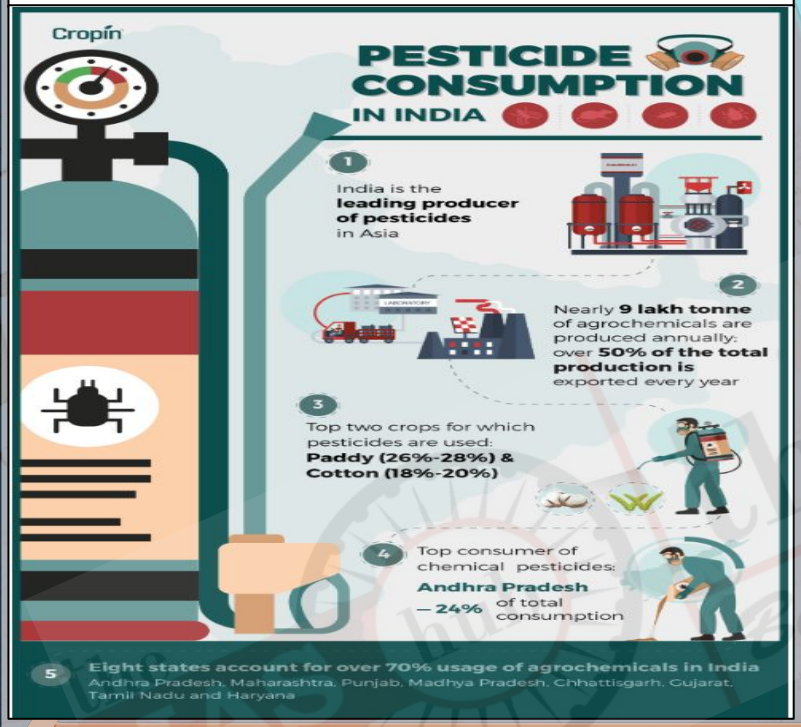
APRIL 4

PESTICIDE USAGE IN INDIA

(Syllabus: GS Paper 3 - Agriculture)

Ban on pesticides: Plea in Supreme Court alleges restriction on reduced number of chemicals to protect companies

Next hearing on April 28; SC seeks reasons for the decision from Centre



Pesticide usage in India

- India is the **2nd largest pesticide manufacturer** in the world. It is the **5th largest exporter after China, USA, Germany and France.**
- India accounts **only for 1% of the global pesticide consumption.**
- Though the **'per hectare usage' is relatively low** compared to rest of the countries, indiscriminate use (in terms of quantity and timing) is still an issue.

Context: A recent notification by the central government going back on its decision to ban **27 pesticides** identified as health hazards by an **expert committee, under TP Rajendran**, has been flagged in the Supreme Court of India.

- A petition has sought a ban on all 27 pesticides, not just three, as proposed by a February 16, 2023 notification.
- A draft notification by the Union Ministry of Agriculture and Farmers Welfare published on February 16 went back on the proposal, claiming **just three of the 27 were "fit to be banned".**

Draft notification

- The draft notification, titled **'Banning of Insecticides Order 2020',** prohibits the import, manufacture, sale, transport, distribution and use of 27 pesticides, including **Acephate, Atrazine, Benfuracarb, Butachlor, Captan, Carbofuran, Chlorpyriphos, 2,4-D, Deltamethrin and others.**
- It also proposes to ban the **chemical Malathion** that was used extensively by the government during the recent locust attack.
- Out of the 27 pesticides which are proposed to be banned three are **Monocrotophos, Methomyl and Carbofuran** which are associated with high levels of toxicity leading to even farmers' deaths.
- According to Punjab Agriculture University (PAU), these pesticides are used on almost all crops — **rice, wheat, maize, sugarcane, cotton, oilseeds, various vegetables, fruit etc**.

Alternatives available to farmers

- **IPM techniques**: **Integrated Pest Management (IPM) techniques** is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.
- **Target-specific:** Newer **molecular target-specific low toxicity pesticides**, usage of which is extremely low, and which are a little more expensive
- **Pheromone traps**: Pheromone traps, which are quite economical, are meant for mating disruption, for suppression of pest population, and mass trapping. Such traps slowly release **synthetic attractants** which help in the detection of a single species of insect in the fields.
- **Bio-pesticides**: **Neem-based biopesticides**, which are environment-friendly, is very effective cost-wise and yield-wise. It's bitter taste keeps pests away from plants.
    - Moreover, the **right kind of seeds and precise irrigation** can also help farmers keep the pests away.

BUSINESS STANDARD

Page 7

FINANCE COMMISSION

(Syllabus: GS Paper 2 - Polity & Governance)

16th Finance Commission to be constituted this year: FinMin

ASIT RANJAN MISHRA
New Delhi, 3 April

The finance ministry on Monday told the Lok Sabha that it was going to constitute the 16th Finance Commission (SFC) in the current calendar year. The recommendations of the SFC will be for five years starting FY27.

Replying to a question by Ambedkar Nagar MP Ritesh Pandey, Minister of State for the Finance Ministry Pankaj Chaudhury answered in the affirmative. "The terms of reference and other modalities are governed under Article 280 of the Constitution," Chaudhury said, without answering if the government is considering taking up the matter of the North-South divide with respect to the devolution of taxes and if the 16th Finance Commission will work in tandem with the GST council. The Finance Ministry in its FY24 Budget has allocated a token ₹10 crore for establishing attached offices for the 16th Finance Commission.

The Finance Commission is a constitutionally mandated body established once every five years to devise a formula for distributing net tax proceeds between the Centre and the states as well as among states and local bodies. The 15th Finance Commission headed by NK Singh was set up in November 2017 with a mandate to submit its report in two years for a period of five years. However, due to the Covid pandemic, the FFC submitted a standalone report for FY21 and another report for a period of five years ending FY26. The FFC marginally reduced the un-tied share of states in net central taxes to 41 per cent from 42 per cent, as Jammu and Kashmir was split into two Union Territories.

D K Srivastava, member of the 12th Finance Commission and chief policy adviser at the EY India, said there may be references to the target for the overall size of the Indian economy and how states can be facilitated to achieve that target. "India's tax GDP ratio is languishing at a low level. The government might ask the commission how to uplift the overall tax-GDP ratio. The commission may also be asked how to reform the GST and whether some states would still require compensation," he added.

BUDGET SESSION
IN THE HOUSE



₹35K cr unclaimed deposits moved to Reserve Bank

Unclaimed deposits of about ₹35,000 crore were transferred as of February 2023 to the Reserve Bank of India (RBI) by PSBs in respect of deposits which have not been operated for 10 years or more, Parliament was informed on Monday. These unclaimed deposits belong to 102.4 million accounts transferred to the RBI as of the end of February 2023. PTI

RS passes Competition Bill without debate

The Rajya Sabha on Monday passed the Competition (Amendment) Bill, 2023 without discussion amid uproar by Opposition members over the Adani issue. The Bill provides for the Competition Commission of India (CCI) to impose penalties on entities based on their global turnover instead of the current practice of considering only relevant market turnover. PTI

I-T dept seized ₹4.8K-cr assets in 4 fiscal years

Assets worth more than ₹4,800 crore were seized during searches conducted by the Income Tax department against 2,841 groups in the last four financial years, the government informed Lok Sabha on Monday. The highest seizure took place during 2022-23. PTI

Context: The finance ministry told the Lok Sabha that it was going to constitute the **16th Finance Commission (SFC)** in the current calendar year.

- The recommendations of the SFC will be for five years starting FY27.

Finance Commission

- **About**: **Article 280 of the Indian Constitution** laid down the provisions related to the constitution of the Finance Commission and the Finance Commission Act of 1951 supplemented the provision of the constitution.
  - **President Constitutes** the Finance Commission every 5 years or at such time he considers necessary.
  - The constitution authorizes the **parliament to determine the qualification** of the members of the commission.
  - Parliament is also **authorized to determine the manner** in which they should be selected.
  - So the **parliament prescribed that the appointment of the Chairman** and the other members of the commission shall be done by the President.
  - Moreover, the members of the Finance Commission are **eligible for reappointment.**
- **Functions**: Finance Commission, **a quasi-judicial body,** recommends President certain measures related to the distribution of financial resources between the union and the states.
- **Advisory body**: The recommendations made by the commission are only advisory in nature hence **not binding on the government.**
- **Composition of Finance Commission**: The Finance Commission is a **5 member body** that must have:
  - **A Chairman**: The Chairman of the Finance Commission must be a person **having experience in public affairs.**
  - **Four Other Members**: 4 members must be:
    - A **high Court Judge** or one qualified to be appointed as such;
    - A person with **special knowledge of the finances** and accounts of the government;
    - A person with **wide experience in financial matters** and administration;
    - A person with **special knowledge of economics.**

THE HINDU Page 11

POVERTY ESTIMATION IN INDIA

(Syllabus: GS Paper 2 - Social Justice)

Centre flayed for delay in survey to assess poverty

The Hindu Bureau
NEW DELHI

Union Minister of State for Planning Rao Inderjit Singh on Monday said in the Rajya Sabha that the last time the Centre made an estimate of the poverty line and poverty ratio was in 2013, based on the large sample surveys on Household Consumer Expenditure carried out by the National Sample Survey Office (NSSO) in 2011-12.

The Opposition questioned this and said the Centre's latest statistics on poverty was at least nine years old. The answer was given in reply to a question raised by Communist Party of India MP P. Sandosh Kumar. He said the data exposed the reality of all tall claims by the government and Prime Minister Narendra Modi. "More than a decade has passed since the last survey, the Centre does not have an estimation of the situation of the poor people of the country. This explains the complete lack of direction in Modi government's approach towards problems of the country," he said.

According to the survey, the number of poor people in the country was 27 crore in 2011-12.

Context: Minister of State for Ministry of Planning said in Rajya Sabha that the last time the Centre made an estimate of the **poverty line and poverty ratio** was in 2013, based on the Large Sample Surveys on Household Consumer Expenditure carried out by the **National Sample Survey Office (NSSO)** in 2011-12.

- According to the survey, the number of poor people in the country was 27 crore in 2011-12.

Poverty Estimation in India

- **About**: Poverty is a **condition where an individual lacks financial resources** and cannot afford the basic minimum standard of living. A transparent estimation of poverty is required for efficient and effective planning for poverty reduction.
  - **Dadabhai Naoroji** made the earliest poverty estimation in India in his book, Poverty and the Un-British Rule in India.
- **Estimation**:**Calculating income or consumption levels** is the widely used method for poverty estimation in India. According to this method, if the household's income or consumption value falls below the given minimum level, called Poverty Line, it is said to be BPL, i.e., **Below the Poverty Line.**
  - **Poverty Line Calculation:** On the basis of NSSO data, NITI Aayog carries the Poverty Line Calculation in India under the **Ministry of Statistics and Programme Implementation (MOSPI)**. Earlier, the Planning Commission was responsible for calculating India's poverty line.
  - **Consumption Versus Income Level:** Income and consumption levels are used to evaluate poverty. The Consumption level is considered the **valid criterion due to the following reasons:**
    - **Additional Income:** If an individual is a **regular wage income earner,** he can earn money from additional income sources. The additional income makes it hard for the Aayog to judge the total income.
    - **Variation in Income**: The **self-employed individuals** or those who work as daily wage labourers vary in their income. In such cases, the income is variable. Still, the consumption pattern is stable.
    - **Data Collection:** Poverty estimation in India **based on consumption value uses a reference period.** The reference period is the period during which NSSO workers conduct the survey. During this period, the household is asked questions about their consumption of said time (say 30 days).
- **Data Collection Methods for Poverty Estimation in India:**
  - **URP:** URP, **Uniform Resource Period** was from 1993 to 1994. During this period, the poverty line in India was based on URP. In this method, people were questioned about their consumption expenditure over 30 days.
  - **MRP:** MRP, **Mixed Reference Period** was from 2000 onwards. In this period, the NSSO used the MRP method that involves the measurement of the consumption level of the household of five-low frequency items for 30 days. The low-frequency items include institutional health expenditure, education, durables, and clothing items.

BRAHMOS-II MISSILE

(Syllabus: GS Paper 3 - Sci & Tech)

'US AND CHINA ARE DEVELOPING HYPERSONIC VERSIONS OF THEIR CRUISE MISSILES'

India, Russia to Build BrahMoS Hypersonic Version

New BrahMoS development figured at NSA-level talks last week; Moscow is ahead of US in the development of hypersonic missiles

DipanjanRoy.Chaudhury
@timesgroup.com

New Delhi: NSA Ajit Doval and his Russian counterpart Nikolai Patrushev, during their meeting last week, is understood to have discussed the possibilities of the joint development of the hypersonic version of BrahMos or BrahMos-II missile.

Defence supplies from Russia and defence sector collaboration were key items on the agenda of the India-Russia NSA meet held on the sidelines of the Shanghai Cooperation Organisation-NSA meet and the two senior officials are understood to have discussed the possibility of a joint development of an advanced version of the BrahMos missile, ET has learnt.

The two NSAs had held a one-on-one meet that focussed on connectivity issues, Pakistan-Ukraine defence axis, payment mechanism, security partnership and defence supplies from Russia that have been impacted by the war.

Moscow is ahead of the US and other western powers in the development of hypersonic missiles, considered a game-changer in modern warfare. Hypersonic Weapon Systems (HWS) have been in the limelight since the onset of the Russia-Ukraine conflict. BrahMos-II could have the same performance characteristics as Russia's Tsirkon (Zircon) missile, sources indicated to ET.

Last year, CEO of BrahMos Aerospace, Atul Rane had said that it was "possible" that BrahMos-II would share some characteristics with Russia's Tsirkon missile.

"The whole world is working on a hypersonic cruise missile. The US and China are developing hypersonic versions of their cruise missiles. But they do not have them yet. I have not seen anyone in the world having hypersonic cruise missiles. Russia says it tested the Tsirkon hypersonic antiship cruise missile developed by NPO Mashinostroeniya," Rane told Russian news agency TASS last year. Rane had then stated that "technology bricks" for a hypersonic missile have been designed by both sides.

India is party to the Missile Technology Control Regime (MTCR), which allows the country to develop a missile with a range of over 300 km and weighing more than 500 kg but not to export it to other countries. This is true even in the case of the supersonic BrahMos missile, the latest variant of which has a range of 500 km. The export version is capped at 290 km to comply with the MTCR restrictions of 300 km.

The BrahMos-II is expected to be capable of travelling at speeds of up to Mach 7 and has a range of over 300 miles. It is being designed to be launched from multiple platforms, including land, air, and sea.

Hypersonic weapon systems are advanced military technologies that can travel at extremely high speeds, typically defined as Mach 5 or higher (five times the speed of sound). These weapons are designed to be extremely manoeuvrable, able to change course quickly and evade enemy defence, and can travel long distances in a very short time. Furthermore, HWS are capable of carrying out launches from a variety of platforms, including ground-based systems, aircraft, and submarines. They are typically designed to carry conventional or nuclear warheads and are seen as a potential game-changer in military operations, particularly in terms of their speed, range, and ability to penetrate enemy defences.

The BrahMos is a supersonic cruise missile, developed by the joint Russian-Indian BrahMos Aerospace company. The missile has been jointly developed by Russia's NPO Mashinostroyeniya and India's Defense Research and Development Organization (DRDO). The first trial launch took place in 2001. Various versions of this missile have been commissioned to India's Navy, Air Force and ground forces.

Features

BrahMos-II could have the same performance characteristics as Russia's Tsirkon (Zircon) missile

India is party to Missile Technology Control Regime; it allows the country to develop a missile with a range of over 300 km and weighing more than 500 kg but not to export it to other countries

BrahMos-II is being designed for launch from multiple platforms on land, air and sea

Hypersonic weapon systems are advanced military technologies that can travel at extremely high speeds, typically defined as Mach 5 or higher



Hypersonic weapons are designed to be extremely manoeuvrable, able to change course quickly and evade enemy defence, and can travel long distances in a very short time

MORE POWERFUL

The BrahMos-II is expected to be capable of travelling at speeds of up to Mach 7 and has a range of over 300 miles

Context: NSA India and his Russian counterpart is understood to have discussed the possibilities of the joint development of the **hypersonic version of BrahMos or BrahMos-II missile.**

Key Points

- India is party to the **Missile Technology Control Regime (MTCR)**, which allows the country to develop a missile with a range of over 300 km and weighing more than 500 kg but not to export it to other countries. This is true even in the case of the supersonic BrahMos missile, the latest variant of which has a range of 500 km.
- The export version is capped at 290 km to comply with the MTCR restrictions of 300 km.
- The **BrahMos-II** is expected to be capable of travelling at speeds of up to Mach 7 and has a range of over 300 miles. It is being designed to be launched from multiple platforms, including land, air, and sea.
- **Hypersonic weapon systems** are advanced military technologies that can travel at extremely high speeds, typically defined as Mach 5 or higher (five times the speed of sound).
- These weapons are designed to be extremely manoeuvrable, able to change course quickly and evade enemy defence, and can travel long distances in a very short time.
- Furthermore, HWS are **capable of carrying out launches** from a variety of platforms, including ground-based systems, aircraft, and submarines.
- They are typically designed to **carry conventional or nuclear warheads** and are seen as a potential game-changer in military operations, particularly in terms of their speed, range, and ability to penetrate enemy defences.
- The BrahMos is a **supersonic cruise missile**, developed by the joint Russian Indian BrahMos Aerospace company.
- The missile has been jointly **developed by Russia's NPO Mashinostroyeniya and India's Defense Research and Development Organization (DRDO).**
- The first trial launch took place in 2001. Various versions of this missile have been commissioned to India's Navy, Air Force and ground forces.

INDIAN EXPRESS

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LIE-DETECTOR TEST

(Syllabus: GS Paper 3 - Sci & Tech)

Lie detector test likely for student named in note

MOHAMED THAVER
MUMBAI APRIL 3

THE MUMBAI Police's special investigation team (SIT), which is investigating the suicide of IIT student Darshan Solanki in February, is likely to move for a lie-detector test to be conducted on the IIT student whose name was mentioned in a note purportedly written by Solanki and found in his hostel room.

In the note, Solanki purportedly said "(student name) you killed me". After registering an FIR in the case on Thursday, the SIT on Monday recorded a detailed statement of the student. According to police, the student who resided on the same floor as Solanki said three days before the latter died by suicide, Solanki had apologised to him over a dispute between them that took place earlier. Police, however, feel that the student isn't giving them all the details like the reason for the dispute, due to which they are considering methods like a lie-detector test.

A source said, "Now that an FIR has been registered in the case, we will be recording statements under Criminal Procedure Code Section 161. We have recorded statements of two students..."

In his statement, the IIT student said that on March 10, when he was out, he received multiple calls from Solanki, which he missed as his phone was on silent mode. Later, when he reached the IIT campus, Solanki hugged him and apologised for a past dispute.

"However, the student is not telling us about what led to the dispute. After recording all the statements, we are planning to go for scientific methods like a lie-detector test on the student so that we get complete details about the issue between the two of them," said a police source, adding that the student also told the police team that once he was talking to Solanki and had mentioned that he had a cutter, and Solanki appeared to be scared. The source claimed that the statements of others recorded earlier have also mentioned a dispute between the duo in week prior to the suicide.

Last week, the SIT had recorded the statement of Udaysingh Meena, whom Solanki was believed to have confided in about the alleged caste discrimination he was facing at the institute. The source said that Meena's statement, recorded in Rajasthan last week, stated that Solanki had told him about an IIT student who had reduced interaction after he knew about Solanki's score.

Meena told the police that he had advised Solanki to ignore that student and talk to others. At the end of his statement, he told the police it was possible that Solanki died by suicide due to loneliness.

"We are investigating the case by keeping all possibilities open. We are also awaiting the handwriting analysis of the note found in Solanki's room to find out if the writing is his," said a police officer.

While police had asked the family to file a complaint against the IIT student whose name was found in the note, the family did not agree and gave a complaint stating caste discrimination at the institute drove their son to suicide, based on which the FIR was registered.

Context: The Mumbai Police's special investigation team (SIT), which is investigating the suicide of IIT student in February, is likely to move for a **lie-detector test** to be conducted on the IIT student whose name was mentioned in a note purportedly written by the student and found in his hostel room.

Lie detector test

- **About**: A **polygraph test** is a lie detector test.
  - It assumes that **physiological responses** (heartbeat, changes in breathing, sweating, etc.) triggered when a person is lying are different from what they would be otherwise.
  - Instruments like **cardio-cuffs or sensitive electrodes** are attached to the person, and variables such as blood pressure, pulse, blood flow, etc., are measured as questions are put to them.
  - A numerical value is assigned to each response to conclude whether the person is telling the truth, is deceiving, or is uncertain.
- **Origin**: First done in the **19th century** by the Italian criminologist Cesare Lombroso, who used a machine to measure changes in the blood pressure of criminal suspects during interrogation.
- **Success rate:** Neither polygraph tests nor narco tests have been proven scientifically to have a 100% success rate, and remain **contentious in the medical field as well.**
- **Not as Confessions**: The results of the tests **cannot be considered "confessions".**
  - However, any information or material subsequently discovered with the help of such a voluntarily-taken test can be admitted as evidence, the Supreme Court said, in **'Selvi & Ors vs State of Karnataka & Anr' (2010).**
- **Consent required:** No lie detector tests should be administered except **based on consent of the accused.**
  - The consent should be **recorded before a judicial magistrate.**
  - Those who volunteer must have **access to a lawyer,** and have the physical, emotional, and legal implications of the test explained to them by police and the lawyer.
  - The **'Guidelines for the Administration of Polygraph Test on an Accused'** published by the National Human Rights Commission in 2000, must be strictly followed.
  - The **Supreme Court took into consideration international norms on human rights**, the right to a fair trial, and the right against self-incrimination under Article 20(3) of the Constitution, as it is feared that a false confession could be obtained at times when a case needs to be solved quickly.
  - A **forcible intrusion** into a person's mental processes is an affront to human dignity and liberty, often with grave and long-lasting consequences.

DTE

APRIL 4

DIABETES

(Syllabus: GS Paper 3 - Sci & tech)

Malnourished but diabetic: An atypical form of 'the rich man's disease' is spreading among Chhattisgarh's tribals

Lean diabetes arises from intermittent starvation, overload on carbohydrate metabolism; lack of guidelines compounds problem

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Context: The rise of non-communicable diseases (NCD), including **diabetes**, has been recognised as a problem area by the Indian government.

- In a Lok Sabha answer from December 2021, the Union health ministry illustrated how **the proportion of deaths due to NCDs rose from 37 per cent in 1990 to 61 per cent in 2016**, indicating an "epidemiological transition with a shift in disease burden to NCDs".
- What often remains amiss from this discourse is the penetration of such NCDs, typically argued to be lifestyle disorders of the affluent, in India's tribal population such as **Gond community**, a scheduled tribe recognised by the Union Ministry of Tribal Affairs.

Diabetes

- **About**: Diabetes is a **metabolic disease or a condition** in which the glucose levels in the blood will be high over a prolonged period of time.
- **Causes**: It occurs when the **body cannot efficiently make use of glucose** that serves as a source of energy for body cells.
  - Blood sugar levels are controlled by a hormone called **insulin**.
- **Symptoms:** Signs and Symptoms vary from person to person, or even there may be no signs sometimes. Common symptoms are:
  - Frequent Urination
  - Feeling more stressed or tired than usual
  - Being thirstier
  - Blurred vision
  - Loss of Weight
- **Types of Diabetes**
  - Diabetes Mellitus
    - Type 1 Diabetes
    - Type 2 Diabetes
  - Diabetes Insipidus
  - Gestational Diabetes
- **Treatments:**
  - **Glucose monitoring**: Continuous glucose **monitoring devices** can help monitor the blood glucose levels throughout 24 hours with the help of a sensor.
  - **Artificial pancreas:** It can automatically **deliver insulin** when required.

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