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MK Yadav Sir

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INDIAN EXPRESS Explained

BLACK SEA

(Syllabus: GS Paper 1 - Geography)

Looking to the Black Sea

Though seemingly a world away from the theatre of war in Europe, India shouldn't ignore naval lessons from the Russia-Ukraine conflict



ABHIJIT SINGH

ALL WARS HAVE watershed moments — crucial turning points when the belligerents realise that the course and momentum of combat have decisively shifted. Russia's moment of truth in the Ukraine-Russia war came in the wee hours of September 13, 2023, when Ukraine struck Russian naval targets and port infrastructure in the Crimean city of Sevastopol, home of Russia's Black Sea fleet. A largely overlooked space in the war at the time, the Black Sea had witnessed a spate of Ukrainian attacks on Russian targets. This included a fatal hit on the Russian flagship, Moskva, and a strike on Sevastopol in October 2022, in which a frigate and a minesweeper were badly damaged.

Even so, the hit on Sevastopol in September 2023 was unlike anything the Russian Navy had so far experienced in the war. In a coordinated attack, Ukrainian cruise missiles and "suicide" speedboats struck the Sevastopol shipyard with ferocious intensity, wrecking two military vessels undergoing repairs, including an amphibious ship and a submarine. The sheer audacity of the strike rattled Russia's military leadership, which soon ordered the fleet to shift base to Novorossiysk, an eastern Black Sea port.

For India, a world removed from the battle in Europe, the war in the Black Sea could as well be taking place on another planet. New Delhi has been preoccupied with its China problem in the Indian Ocean. Nonetheless, the European naval conflict teaches five significant lessons that India's maritime strategists and observers would do well to heed. The first is a reaffirmation of a reality already well-known: Geography, technology, and circumstance have a decisive effect on a naval war, both altering the face of battle and affecting its outcome. The conflict between Russia and Ukraine in the Black Sea could have turned out differently had there been more than one narrow waterway (the Bosporus Strait) connecting the Black Sea to the wider Atlantic. Russia would probably also have prevailed in the war had Ukraine not had access to Western arms and equipment.

No less crucial is the role of circumstance. Moscow might have been able to shut down all Ukrainian ports had Turkey, which controls access to the Black Sea, not closed off the Dardanelles and Bosporus straits for warships. It is the peculiar geography of the theatre of war, the availability of superior technology on one side (Ukraine), and the contingent circumstances of the war that have made all the difference.

It is instructive that the Russian blockade of the Black Sea did not go as Moscow expected. While Russian attacks on the port of Odesa caused maritime traffic to slow down, Ukraine succeeded in operationalising a humanitarian corridor along the western Black Sea coast. Unfortunately for Moscow, it does not have enough assets in the Black Sea to shut down all trade for Ukraine. The Russian experience illustrates the limited utility of a naval blockade as an instrument of war. While it remains a legitimate and arguably effective tactic in less-than-war situations, preventing vessels of the enemy and neutral states from entering or exiting specified ports is unviable in active conflict.

The second takeaway from the war is that the age of combat drones has truly arrived. The loss of the Moskva was in considerable part an outcome of drone warfare. Reportedly, a Bayraktar TB2 drone distracted the Moskva's main fire control radar, which allowed two Ukrainian anti-ship missiles to sneak past the warship's defences. Again, in October 2023, Ukrainian forces used unmanned surface vehicles (USVs) to attack Russian warships, including the frigate Makarov, a landing vessel, and a minesweeper, at the naval base in Sevastopol. For Ukraine, the attack marked a critical moment in naval strategy development, with small unmanned surface vehicles (USVs) demonstrating their utility against stationary units.

Another lesson from the war is that littoral warfare can be rendered more effective by the use of shore-based missiles. The attack on the Russian-occupied port of Berdyansk in March 2022 and the attack on the Moskva in April 2022 offer instructive examples. Crucially, anti-ship cruise missile numbers have witnessed a significant rise worldwide.

The conflict in the Black Sea also demonstrates that weaker powers tend to use their limited naval capabilities in creative ways to deter a stronger opponent. Targeting the adversary's ammunition depots and logistics sites is a tactic lesser powers often resort to. The latter also tend to be more adventurous and innovative with technology. This constitutes lesson number four: for success against a stronger adversary in the littorals, a creative approach is the way forward.

Finally, ship design and crew competence are vital for survival in war. The two Neptune missiles that struck the Moskva were never detected. Experts say the air defence systems on Russian warships are not built to withstand the trajectory of contemporary cruise and ballistic missiles. Yet, the Moskva's crew may have erred in its handling of the crisis onboard. Their undoing may have been a lack of training to deal with simultaneous threats and the inability to mitigate the damage after the missiles hit home.

The naval contests in Asia have had a different flavour from those in the Black Sea. One aspect, though, remains constant. In existential crises, lesser beleaguered powers tend to think "beyond the box," whereas stronger ones stick to tried and tested methods. As Robert Greene points out in his book, *The 33 Strategies of War*, anybody can win a war provided they are prepared to think in non-linear ways. The most important lesson for naval leaders is that success in contemporary battles is dependent on a side's ability to prepare and execute a nonlinear campaign. The side that develops an apt strategy for the situation and makes the best use of available tools wins in the end.

The writer is head of the Maritime Policy Initiative, Observer Research Foundation, New Delhi

Context: Recently, the Ukraine-Russia war witnessed a pivotal moment on September 13, 2023, as Ukraine targeted Russian naval assets in Sevastopol, home of Russia's Black Sea fleet, altering the course of the conflict.



Black Sea

- **Location**: The Black Sea is flanked by Ukraine to the north and northwest, Russia and Georgia to the east, Turkey to the south, and Bulgaria and Romania to the west.
  - **Pneumonic:** BURGR-T (Bulgaria, Ukraine, Russia, Georgia, Romania and Turkey).
- **Maritime Geography**: Connecting to the Sea of Marmara through the Bosphorus Strait and further linking to the Aegean Sea via the Dardanelles strait.

Importance of the Black Sea to Russia

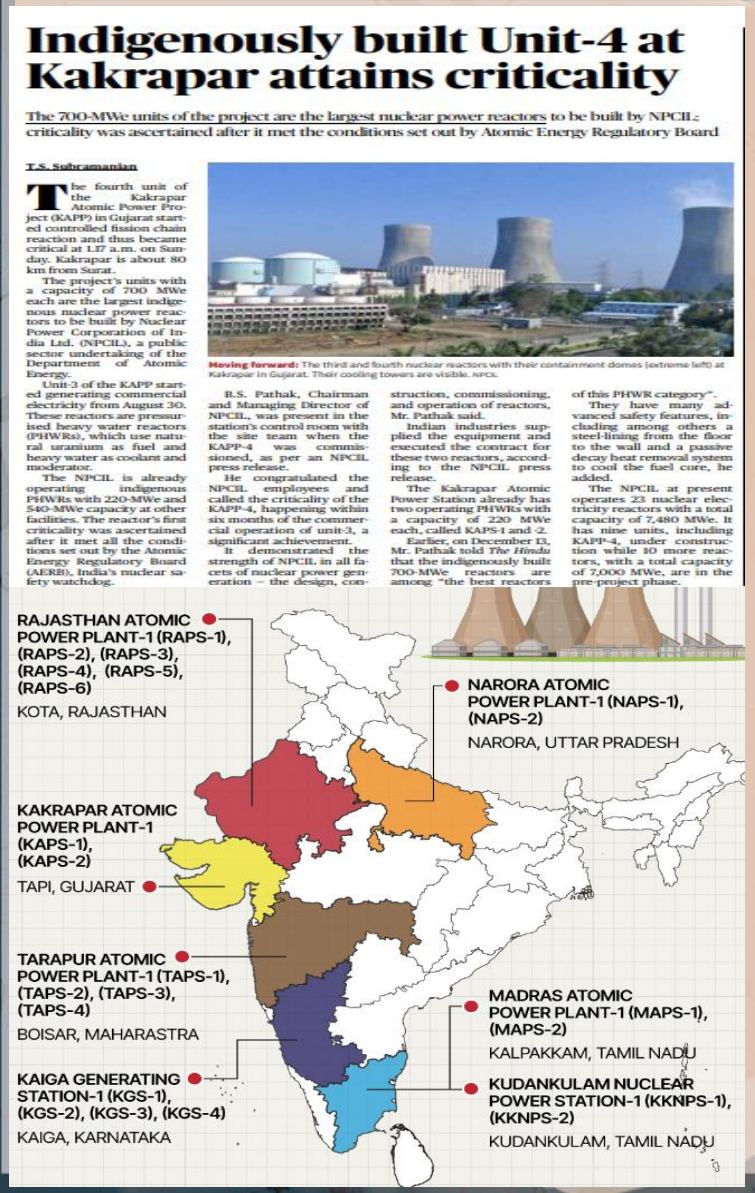
- **Strategic Significance**: The domination of the Black Sea region is a geostrategic imperative for Russia, facilitating the projection of Russian power in the Mediterranean and ensuring access to key markets in southern Europe.
- **Mediterranean Gateway**: Serving as Russia's historical warm water gateway to Europe.
- **Strategic Buffer:** Acting as a crucial strategic buffer between NATO and Russia.
- **Black Sea Fleet and Control Efforts**: Russia, particularly since the Crimean crisis of 2014, has been actively striving to gain complete control over the Black Sea. This effort is exemplified by the deployment of its Black Sea naval fleet in the region.
- **Historical Legacy of the Black Sea Fleet**: The Black Sea Fleet, with its roots traced back to 1783, encompasses warships of the Russian Navy in the Black Sea, Sea of Azov, and the eastern Mediterranean.

THE HINDU

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KAKRAPAR POWER PLANT

Syllabus GS Paper 3 – Nuclear Technology)



Indigenously built Unit-4 at Kakrapar attains criticality

The 700-MWe units of the project are the largest nuclear power reactors to be built by NPCIL; criticality was ascertained after it met the conditions set out by Atomic Energy Regulatory Board

T.S. Subramanian

The fourth unit of the Kakrapar Atomic Power Project (KAPP) in Gujarat started controlled fission chain reaction and thus became critical at 1.17 a.m. on Sunday. Kakrapar is about 80 km from Surat.

The project's units with a capacity of 700 MWe each are the largest indigenous nuclear power reactors to be built by Nuclear Power Corporation of India Ltd. (NPCIL), a public sector undertaking of the Department of Atomic Energy.

Unit-3 of the KAPP started generating commercial electricity from August 30. These reactors are pressurised heavy water reactors (PHWRs), which use natural uranium as fuel and heavy water as coolant and moderator.

The NPCIL is already operating indigenous PHWRs with 220-MWe and 540-MWe capacity at other facilities. The reactor's first criticality was ascertained after it met all the conditions set out by the Atomic Energy Regulatory Board (AERB), India's nuclear safety watchdog.

Moving forward: The third and fourth nuclear reactors with their containment domes (extreme left) at Kakrapar in Gujarat. Their cooling towers are visible. NPCIL

B.S. Pathak, Chairman and Managing Director of NPCIL, was present in the station's control room with the site team when the KAPP-4 was commissioned, as per an NPCIL press release.

He congratulated the NPCIL employees and called the criticality of the KAPP-4, happening within six months of the commercial operation of unit-3, a significant achievement.

It demonstrated the strength of NPCIL in all facets of nuclear power generation — the design, construction, commissioning, and operation of reactors, Mr. Pathak said.

Indian industries supplied the equipment and executed the contract for these two reactors, according to the NPCIL press release.

The Kakrapar Atomic Power Station already has two operating PHWRs with a capacity of 220 MWe each, called KAPS-1 and -2.

Earlier, on December 13, Mr. Pathak told *The Hindu* that the indigenously built 700-MWe reactors are among "the best reactors of this PHWR category".

They have many advanced safety features, including among others a steel-lining from the floor to the wall and a passive decay heat removal system to cool the fuel core, he added.

The NPCIL at present operates 23 nuclear electricity reactors with a total capacity of 7,480 MWe. It has nine units, including KAPP-4, under construction while 10 more reactors, with a total capacity of 7,000 MWe, are in the pre-project phase.

Context: Recently, **Unit 4 of the Kakrapar Atomic Power Project in the Surat district of Gujarat** achieved the significant milestone of criticality, marking the commencement of a controlled fission chain reaction for the first time at 0117 hrs.

Kakrapar Atomic Power Project

- **Location of KAPP 3&4**: Kakrapar, Surat district, Gujarat. These indigenous PHWRS boast advanced safety features, making them among the world's safest reactors.
- **KAPP Unit 3**: The commercial electricity generation at Unit3 of the Kakrapar Atomic Power Station (KAPP) commenced on August 30. This milestone signifies a significant step in India's nuclear power capabilities.
- **KAPP-4**: The KAPP-4 **is a 700 MW Pressurised Heavy Water Reactor (PHWR)**. The criticality was achieved after meeting all the stipulations of the Atomic Energy Regulatory Board (AERB), which issued clearance after a rigorous review of the safety of the plant systems.
    - It is the **second in the series of sixteen indigenous PHWRs** of 700 MW each being set up in the country.
- **Post-Criticality Experiments/Tests:** After achieving the first criticality, KAPP-4 will undergo various experiments and tests to ensure its functionality.
- Gradual Power Level Increase:
- **NPCIL's Current Operations**: NPCIL currently operates 23 reactors with a total capacity of 7,480 MW. With nine units, including KAPP-4, under construction, the organization is poised for a total capacity of 7,500 MW in the near future.
- Presently, India has 22 nuclear power reactors operating in 7 states.

PIB Dec 17

LEADS 2023
(Syllabus: GS Paper 3 – Economy)

Shri Piyush Goyal releases the "Logistics Ease Across Different State (LEADS) 2023"

Context: Recently, Union Minister of Commerce & Industry, Consumer Affairs, Food & Public Distribution, and Textiles, released the "Logistics Ease Across Different State (LEADS) 2023" report in New Delhi.

Key Highlights of LEADS 2023

Coastal Group
- **Achievers**: Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu
- **Fast Movers**: Kerala, Maharashtra
- **Aspirers**: Goa, Odisha, West Bengal

Landlocked Group
- **Achievers**: Haryana, Punjab, Telangana, Uttar Pradesh
- **Fast Movers**: Madhya Pradesh, Rajasthan, Uttarakhand
- **Aspirers**: Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand

North-East Group
- **Achievers**: Assam, Sikkim, Tripura
- **Fast Movers:** Arunachal Pradesh, Nagaland
- **Aspirers**: Manipur, Meghalaya, Mizoram

Union Territories
- **Achievers**: Chandigarh, Delhi
- **Fast Movers**: Andaman & Nicobar, Lakshadweep, Puducherry
- **Aspirers**: Daman & Diu/ Dadra & Nagar Haveli, Jammu & Kashmir, Ladakh

Logistics Ease Across Different State (LEADS) 2023
- **About**: The LEADS stands as an indigenous data-driven index designed to evaluate logistics infrastructure, services, and human resources in all 36 States and Union Territories (UTs).
- **Released by**: Ministry of Commerce & Industry.
- **Mechanism**: LEADS serves as both a guiding and bridging mechanism, facilitating the identification of interventions aimed at improving logistics efficiency in various States and UTs.
- **International Recognition**: Its positive reflection on international indices, such as the Logistics Performance Index, underscores the effectiveness and relevance of LEADS on a global scale.
- **First Report**: The release of the first logistics report in 2018, marking the initiation of LEADS.

HINDUSTAN TIMES Page 1

LIBYA

(Syllabus: GS Paper 1 – Geography)

At least 61 dead as migrant vessel sinks off Libya coast

Associated Press
letters@hindustantimes.com

CAIRO: A boat carrying dozens of migrants trying to reach Europe capsized off the coast of Libya, leaving more than 60 people dead, including women and children, the UN migration agency said.

The shipwreck, which took place overnight between Thursday and Friday, was the latest tragedy in this part of the Mediterranean Sea, a key but dangerous route for migrants seeking a better life in Europe. Thousands have died, according to officials.

The UN's International Organisation for Migration said in a statement late on Saturday that the boat was carrying 86 migrants when strong waves swamped it off the town of Zuwara on Libya's western coast and that 61 migrants drowned, according to survivors.

"The central Mediterranean continues to be one of the world's most dangerous migration routes," the agency wrote on social media platform X, formerly known as Twitter.

The European Union's border agency said in a statement on Sunday that its plane located the partially deflated rubber boat on Thursday evening in Libya's search and rescue zone.

"The people were in severe danger because of adverse weather conditions, with waves reaching heights of 2.5 metres," the agency, known as Frontex, said.

Alarm Phone — a hotline for migrants in distress — said in a tweet that some migrants onboard reached out to the volunteer group who in turn alerted authorities including the Libyan coastguard, "who stated that they would not search for them." A spokesman for the Libyan coast guard was not immediately available for comment.

Libya has in recent years emerged as the dominant transit point for migrants fleeing war and poverty in Africa and the Middle East, even though

continued on →6

A disaster at sea

The treacherous sea migration route from Libya to Italy has claimed thousands of lives in recent years

86 migrants aboard the vessel

What happened?

Strong waves swamped the boat off the town of Zuwara on Libya's western coast, capsizing it and killing 61, said the UN's International Organisation for Migration. The passengers were largely people from Nigeria, The Gambia and other African countries.



The central Mediterranean route: A deadly journey

28,260 Migrants who used this route and have died or are missing since 2014

- Libya and Tunisia are principal departure points for migrants risking dangerous sea voyages in the hopes of fleeing war and poverty in Africa and west Asia. The vessels usually head for Europe, via Italy.
- This June, a boat packed with migrants headed for Italy sank off Greece, killing at least 78 people.



Context: Recently, a tragic incident unfolded as a boat, carrying dozens of migrants attempting to reach Europe, **capsized off the coast of Libya, resulting in the loss of over 60 lives,** including women and children, according to the UN migration agency.

Libya

- **About**: Libya, a predominantly desert nation with significant oil reserves, gained independence in 1951.
- **Capital**: Tripoli
- **Geography**: Libya, situated in North Africa, primarily consists of the vast Sahara desert.
- **Population**: The majority of its population resides along the coastal areas, where key cities like Tripoli and Benghazi are located.
- **Boundaries**: It is a country in the Maghreb region in North Africa
  - **North**: Bordered by the Mediterranean Sea.
  - **East**: Shares a border with Egypt.
  - **South**: Shares boundaries with Niger and Chad.
  - **West**: Bordered by Tunisia and Algeria.

THE HINDU Page 13

NORTH ATLANTIC TREATY ORGANIZATION

(Syllabus: GS Paper 2 – IR)

Putin says 'problems' started with Finland after it joined NATO

Agence France-Presse
MOSCOW

Russian President Vladimir Putin has warned of "problems" with neighbouring Finland after it joined NATO earlier this year, saying Moscow will create a new military district in north-west Russia in response, in an interview published on Sunday.

Finland, which shares a 1,340-kilometre border with Russia, joined NATO in April this year in the midst of Moscow's Ukraine offensive.

"They (the West) dragged Finland into NATO. Did we have any disputes with them? All disputes, including territorial ones in the mid-20th century, have long been solved," Mr. Putin told a state TV reporter.

Military district

"There were no problems there, now there will be, because we will create the Leningrad military district and concentrate a certain amount of military units there."

The comments come as Finland again shut its border with Russia this week, accusing it of orchestrating a migrant crisis on its border.



Vladimir Putin

Moscow has warned of counter-measures to Helsinki's NATO accession.

'Empty rhetoric'

Mr. Putin also said Russia had no reason to be at war with NATO countries after U.S. leader Joe Biden said this month that Moscow "won't stop" in Ukraine if it is successful there.

"It is rhetoric to justify false policy on Russia," Mr. Putin said.

He said Moscow had "no interest – either in geopolitical, economic or military terms – to fight with NATO countries."

The Kremlin's Ukraine campaign has reawakened fears of Russian aggression in the eastern flank of NATO.

Context: Recently, Russia has issued a warning of potential "problems" with neighboring **Finland following its NATO membership earlier this year**, announcing that Moscow will establish a new military district in north-west Russia as a response.

North Atlantic Treaty Organization (NATO)

- **About**: NATO is an Intergovernmental political & military alliance based on the North Atlantic Treaty signed in 1949.
- **Headquarter**: Brussels, Belgium
- **Objective**: Formed to ensure collective security in Western Europe and in response to deteriorating relations between the US and the USSR after World War II (cold war period).
- **Members**: 31 countries (Finland become its 31st member)
- **Article 10**: It sets out **how countries can join the Alliance**. It states that membership is open to any "European State in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area".
- **Collective Defence**: Attack against one or several of its members is considered as an attack against all.

NATO Plus

- **Composition**: NATO Plus comprises the NATO along with five countries—Australia, New Zealand, Japan, Israel, and South Korea.
- **Global Defence Cooperation**: The group collaborates to enhance global defense cooperation, fostering stronger ties among member nations.

Advantages for India

- **Seamless Intelligence Sharing**: Becoming a member of NATO Plus would grant India access to seamless intelligence sharing among member countries.
- **Timely Access to Military Technology**: India would enjoy timely access to the latest military technology, reducing time lags in acquiring critical defense capabilities.
- **Strengthened Defence Partnership**: Membership in NATO Plus would further solidify India's defense partnership with the United States, contributing to strategic alignment and cooperation.

DECCAN HERALD

Dec 17

KASHI TAMIL SANGAMAM

(Syllabus: GS Paper 1 – Art & Culture)

PM Modi launches second Kashi Tamil Sangamam

Context: Recently, the Prime Minister of India presided over the inauguration of Kashi Tamil Sangamam 2.0 at Namo Ghat in Varanasi.

Kashi Tamil Sangamam

- **About**: The Kashi Tamil Sangamam is dedicated to **celebrating various facets of the historical and civilizational ties between India's North and South**.
- **Objective**: To bridge the **knowledge and cultural traditions of both regions**, fostering an understanding of their shared heritage and strengthening the people-to-people connection.
- **Organized by**: Ministry of Education in collaboration with several other ministries, including Culture, Textiles, Railways, Tourism, Food Processing, Information & Broadcasting, and the Government of Uttar Pradesh.
- **Umbrella scheme**: This programme would be a part of the Ek Bharat Shreshtha Bharat initiative.
- **Cultural Significance of Kashi Tamil Sangamam**
  - In the **15th century, King Parakrama Pandya, ruling the area around Madurai**, embarked on a journey to Kashi to acquire a lingam for a temple dedicated to Lord Shiva.
  - While returning, a **significant event occurred when the cow carrying the lingam refused to move when Parakrama** Pandya attempted to resume his journey.
  - Interpreting this as a divine sign, Parakrama Pandya installed the lingam under a tree, giving rise to the place known as Sivakasi in Tamil Nadu.
  - To **enable devotees who couldn't visit Kashi,** the Pandyas constructed the Kasi Viswanathar Temple in Tenkasi, located in southwestern Tamil Nadu near the border with Kerala.

Ek bharat shreshtha bharat

- **Launch**: It was announced by the Prime Minister on 31st October, 2015 on the occasion of the 140th birth anniversary of Sardar Vallabhbhai Patel.
- **Nodal Ministry**: Ministry of Education.
- **Features**: All States and UTs will be covered under the programme.There will be **pairing of States/UTs at national level** and these **pairings will be in effect for one year**, or till the next round of pairings.

FINANCIAL EXPRESS

Dec 17

SURAT DIAMOND BOURSE

(Syllabus: GS Paper 3 – Economy)

Infrastructural marvel! PM Modi inaugurates Surat Diamond Bourse, the 'world's biggest workspace'

Context: The Prime minister of India recently inaugurated the world's largest corporate office hub, Surat Diamond Bourse.

Surat Diamond Bourse

- **Location**: Situated in Khajod village near Surat, the Surat Diamond Bourse stands as the world's largest corporate office hub, surpassing its predecessors.
- **About**: It is **a not-for-profit organization** promoted by SDB Diamond Bourse
  - Registered under **section 8 of** the **Companies Act, 2013.**
- **Objective:** To promote imports, exports and trading of Diamonds, Gems & Jewellery from India.
  - To provide state-of-the-art infrastructure to the organizations engaged in manufacturing & trading of diamonds.
- **Global Trading Centre**: The bourse is set to become a global center for trading both rough and polished diamonds, along with jewellery, providing a platform for diamond buyers worldwide.
- **Environmental Sustainability**: Despite its massive size, the bourse adheres to the principles of Panchtattva, aligning with the five elements of nature, minimizing its environmental impact.
- **Objectives of SDB**
  - To promote imports, exports and trading of Diamonds, Gems & Jewellery from India.
  - To provide state-of-the-art infrastructure to the organizations engaged in manufacturing & trading of diamonds.
  - To promote, advance, protect and develop trade, commerce and industry relating to Gems & Jewellery including cutting, polishing and processing.
  - To establish and maintaining an International Trading Center in India to facilitate Diamond, Gems & Jewellery industry.
  - To develop India as a modern and sophisticated Diamond, Gems & Jewellery market in the world.

PIB Dec 17

PMGSY
(Syllabus: GS Paper 2 – Govt Schemes)

Dr Jitendra Singh launches several PMGSY road projects in his constituency

Context: Recently, the Union Minister of State for Science & Technology laid the e-foundation and virtually inaugurated several road projects under the Pradhan Mantri Gram Sadak Yojana (PMGSY) in Kathua district.

Pradhan Mantri Gram Sadak Yojana (PMGSY)

- **About**: PMGSY is a nationwide initiative aimed at providing all-weather road connectivity to previously unconnected villages in India.
- **Launched**: Introduced in 2000 by then-Prime Minister Atal Bihari Vajpayee.
- **Funding**: Initially, a 100% centrally sponsored scheme; funding shifted to a 60:40 ratio between the Centre and the State from 2015-16.
- **Eligibility Criteria**: Rural areas with a population of 500 and above in plain areas.
- Hill states, NE, desert states, tribal areas, and other backward areas with a population of 250 and above.

PMGSY - Phase I

- **Launch**: Initiated in December 2000 as a fully centrally sponsored scheme.
- **Targeted**: 1,35,436 habitations for road connectivity.
- **Aim**: To upgrade 3.68 lakh km of existing rural roads, ensuring comprehensive farm-to-market connectivity.
- **PMGSY - Phase II**
- **Launch**: In 2013, focusing on upgrading 50,000 km of the existing rural road network.
- **Operational Framework**: Simultaneous continuation of PMGSY - I.
- Upgrading previously built roads for village connectivity, emphasizing rural infrastructure enhancement.

INDIA TODAY Dec 17

BHARAT NCAP

(Syllabus: GS Paper 3 – Economy)

Bharat NCAP completes maiden round of crash tests, results expected later this month

Context: Recently, the first round of crash testing for cars under the Bharat New Car Assessment Programme (Bharat NCAP) was successfully completed.

Bharat New Car Assessment Programme (Bharat NCAP)

- **About**: It is a homegrown star-rating system designed for crash testing cars.
  - Vehicles will be assigned one to five stars, indicating their safety level in the event of a collision.
- **Joint Project**: It is a collaborative initiative between the Government of India (GoI) and Global NCAP, the regulatory body overseeing safety crash test ratings.
- **Objective**: To empower consumers with information for informed car purchases, thereby encouraging the demand for safer vehicles.
- **Testing Protocols**: Cars nominated by manufacturers voluntarily undergo crash testing as per protocols outlined in the Automotive Industry Standard (AIS) 197.
- **Applicability Criteria**: The program applies to passenger vehicles with up to eight seats (including the driver) and a gross vehicle weight not exceeding 3,500 kg.
- **Ratings**: Evaluation of vehicles covers three safety domains: adult occupant protection, child occupant protection, and safety assist technologies.
  - The AIS-197 standards form the basis for the testing program.
- **Unified Rating System**: Unlike Global NCAP, Bharat NCAP provides a unified rating, combining Adult Occupant Protection (AOP) and Child Occupant Protection (COP) ratings.

Bharat NCAP Authority:

- **About**: Unlike other countries, India will have a Bharat NCAP Authority overseeing safety ratings.
- The authority hosts safety ratings on a public website.
- **Government Involvement**: Though voluntary, the central government can request the authority to assess a specific variant "in the interest of public safety" at designated crash test centres.

INDIAN EXPRESS

Dec 11

KETAMINE

(Syllabus: GS Paper 3 – Sci and Tech)

KETAMINE

Actor Matthew Perry's autopsy report says he died from the 'acute effects' of ketamine

ALIND CHAUHAN
NEW DELHI, DECEMBER 17

MORE THAN a month after *Friends* actor Matthew Perry passed away, the Los Angeles County medical examiner's office on Friday released an autopsy report, saying Perry died from the "acute effects" of ketamine.

The actor was found unresponsive in a hot tub at his home in Los Angeles on October 28. He was 54. The autopsy report also mentioned that drowning, coronary artery disease and the effects of an opioid, buprenorphine, had contributed to his death.

In recent years, ketamine has been a subject of widespread debate due to its growing use for treating depression and other serious mental health issues.

What is ketamine?

Ketamine is an anaesthetic that has been listed as a hallucinogen by the US Drug Enforcement Administration. It's referred to as a "dissociative anaesthetic hallucinogen" because it creates a feeling of detachment from pain and the environment.

In the US, ketamine was first used as an anaesthetic for animals in the 1960s. Around a decade later, the US Food and Drug Administration approved it for humans. The drug's use for treating depression and other mental illnesses is recent. Owing to its powerful effects, ketamine is consumed by those patients who haven't responded to traditional therapies. Ketamine is also used as a recreational drug, popularly known as K or Special K.

How is ketamine consumed?

Mental illness patients usually take ketamine through an IV, nasal spray or tablet once or twice a week for six to eight weeks (some might need it for longer). When it comes to recreational purposes, it is consumed by snorting a white crystalline powder. Ketamine can also be injected or smoked.



Perry was found dead at his home in Los Angeles on October 28. *AP*

What are its effects?

In a recent report, *The New York Times* talked to 40 ketamine patients, many of whom said the drug was like a reset button for the brain.

"During treatment sessions, they experienced pleasant visualisations, sometimes accompanied by a sense of existing outside themselves and melding with the universe. Afterwards, their daily problems seemed less weighty," according to the report.

It also noted that ketamine garnered popularity as it affects brain receptors that traditional antidepressants do not target.

If taken in high doses, the anaesthetic quality of ketamine becomes more pronounced. Some may find it difficult to move and may feel numb, and experience more graphic hallucinations.

Is it safe?

It's hard to say. Some doctors have emphasised that if taken only for medicinal purposes and in the right doses, ketamine is safe to consume and very effective in treating mental illnesses.

However, many patients quoted in *The NYT* report said the drug can be addictive and, when taken chronically in high doses, can cause severe bladder damage.

Moreover, there hasn't been much research on prolonged ketamine treatment.

Context: Recently, actor Matthew Perry's passing, the Los Angeles County medical examiner's office released an autopsy report, stating that **Perry died from the "acute effects" of ketamine**.

Ketamine

- **About:** Ketamine is an anaesthetic that has been listed as a hallucinogen by the US Drug Enforcement Administration.
  - It's referred to as a "dissociative anaesthetic hallucinogen" because it creates a feeling of detachment from pain and the environment.
- **First Time Used:** In the US, ketamine was first used as an anaesthetic for animals in the 1960s. Around a decade later, the US Food and Drug Administration approved it for humans.

How is ketamine consumed?

- **Consumption**: Mental health patients typically receive ketamine via IV, nasal spray, or tablet, with a frequency of once or twice a week for a duration of six to eight weeks, and some may require extended usage.

Effects of ketamine

- **Therapeutic Effects**: During treatment sessions, individuals reported experiencing pleasant visualizations, often accompanied by a sense of existing outside themselves and merging with the universe.
- **Impact on Brain Receptors**: The report highlighted that ketamine has gained popularity due to its influence on brain receptors not targeted by traditional antidepressants.
- **Effects at High Doses:** When taken in higher doses, ketamine's anaesthetic qualities become more pronounced.

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