

Current Affairs search results for tag: science-and-technology

1. Indian Oil launches methanol-blended petrol on pilot basis in Assam (May 4, 2022)

Indian Oil Corporation has launched Petrol 'M15' with 15 percent methanol blend in the Tinsukia district of Assam as a pilot project.

- Methanol is being manufactured by Assam Petrochemical Limited near Digboi Refinery.
- This new petrol blending with methanol will reduce fuel costs.
- This new petrol with methanol mixture will contain 15% methanol, so that instead of 100% petrol, only 85% petrol will cost.

• About Indian Oil Corporation

- Indian Oil Corporation Limited (IOCL) is a Government of India-owned oil and gas exploration and manufacturing company.
- It is under the ownership of the Ministry of Petroleum and Natural Gas, Government of India.
- Founded-30 June 1959
- Headquarters- New Delhi
- Chairman- Shrikant Madhav Vaidya

2. DRDO successfully test-fired Advanced Towed Artillery Gun System (May 3, 2022)

The longest range indigenous artillery gun i.e. 155mm/52 Advanced Towed Artillery Gun System (ATAGS) was successfully test fired at Jaisalmer's Pokhran Firing Range (PFFR) from 26 April to 2 May 2022.

• What is ATAGS ?

- The Advanced Artillery Gun System Project is a modern 155 mm artillery gun developed by DRDO.
- This gun is manufactured by Bharat Forge and Tata Advanced Systems Limited.
- It weighs 18 tonnes and has a firing range of 48 km.
- The 155mm ATAGS developed by DRDO was first fired in 2016.
- It took almost four years to develop the Advanced Towed Artillery Gun System, the Indian Army currently has seven Advanced Towed Artillery Guns available.

3. Anti-ship version of BrahMos missile successfully test-fired (April 29, 2022)

An anti-ship version of the BrahMos supersonic cruise missile was successfully test-fired jointly by the Andaman and Nicobar Command and Indian Navy.

- The Andaman and Nicobar Command is the only tri-services command of the Indian armed forces.
- On 19 April, the Indian Air Force (IAF) successfully test-fired a BrahMos missile from a Sukhoi fighter jet on the eastern seaboard.
- In march 2022, the Indian Navy successfully test-fired an improved version of the BrahMos missile from a stealth destroyer in the Indian Ocean.
- **About BrahMos-**
- It is a joint venture between the Defence Research and Development Organisation (DRDO) of India and Russia's NPOM.
- Brahmos is named after the Brahmaputra and Moskva rivers.
- Brahmos produces supersonic cruise missiles that can be launched from submarines, ships, aircraft, or land platforms.
- BrahMos missile flies at a speed of almost three times the speed of sound or 2.8 Mach.
- The range of the advanced version of the missile is learnt to have been extended to around 350 km from the original 290 km.

4. AAI first time successfully conducts flight trials using 'GAGAN' (April 29, 2022)

Airports Authority of India (AAI) successfully test fired at Kishangarh airport in Rajasthan using GAGAN (GPS Aided GEO Augmented Navigation) based LPV approach procedures.

- The successful test is a major achievement and a major milestone in the field of Air Navigation Services (ANS) in the history of Indian Civil Aviation.
- India is the first country in the Asia Pacific Region to achieve such a landmark.
- **What is LPV (Localizer Performance with Vertical Guidance)**
- LPV is a Satellite Based Procedure which has been used by the aircraft for landing purposes at Kishangarh Airport (Rajasthan).
- It permits aircraft guided approaches that are operationally nearly equivalent to Cat-I/ILS, without the need for ground-based navigational infrastructure.
- The service depends on the availability of GPS and GAGAN geostationary satellites (GSAT-8, GSAT-10 and GSAT-15) launched by ISRO.
- **Significance**
- The LPV approach will make it possible to land at airports that are not equipped with expensive instrument landing systems, including many smaller regional and local airports.

- AAI in coordination with Indian National Centre for Ocean Information Services (INCOIS) has implemented Gagan Message Service (GMS) through which alert messages will be sent to fishermen disaster affected people on occurrence of natural calamities like flood, earthquake etc.
- Additional capabilities of GAGAN are also being explored for its use in non-aviation sectors like railways, surveying, agriculture, power sector, mining etc.

- **About GAGAN**

- It is an Indian Satellite Based Augmentation System (SBAS) jointly developed by AAI and ISRO.
- This is the first such system developed for India and neighbouring countries in the equatorial region.
- GAGAN System was certified by DGCA in 2015 for Approach with Vertical Guidance (APV 1) and en-route (RNP 0.1) operations.
- There are only four Space-Based augmentation systems available in the world -

1. India (GAGAN),
2. US (WAAS)
3. Europe (EGNOS) and
4. Japan (MSAS).

5. DCGI approves use of Covaxin for children age between 6 to 12 years (April 26, 2022)

The Drugs Controller General of India (DCGI) has given approval (EUA) to the corona vaccine 'Covexin' for children in the age group of 6-12 years.

- Covexin has been developed by Hyderabad-based Bharat Biotech.
- DCGI has also approved Corbevax for emergency use for people between the ages of 5 to 12.
- DCGI also approves ZycovD for children above 12 years of age.

- **About Drug Controller General of India (DCGI)**

- It is responsible for the approval of licences of specified categories of drugs such as blood and blood products, IV fluids, vaccines and sera in India.
- It also establishes standards for the manufacture, sale, import and distribution of drugs in India.
- It works under the Ministry of Health and Family Welfare.

6. I&B Ministry blocks 16 YouTube news channels (April 26, 2022)

The Ministry of Information and Broadcasting has shut down 16 YouTube news channels for spreading propaganda related to the country's national security, foreign relations and public order.

- Ten Indian and six Pakistan-based YouTube channels have been shut down under the Information Technology Rules, 2021.
- These channels were broadcasting false, unverified information to create panic, incite communal disharmony and disturb public order in the country, the ministry said.
- The total viewership of these YouTube channels is more than 68 crores.

The Indian YouTube channels which have been blocked-

1. Saini Education Research,
2. Hindi Mein Dekho,
3. Aaj Te News, SBB News,
4. Defence News 24x7, and
5. Tahaffuz-E-Deen India

Pakistan- based YouTube channels that have been blocked-

1. Aaj Tak Pakistan,
2. Discover Point,
3. Reality Checks,
4. Kaiser Khan,
5. The Voice of Asia, and
6. Bol Media Bol.

7. Fresh advisory to private satellite TV channels (April 23, 2022)

The Ministry of Information and Broadcasting has advised all private satellite TV channels to refrain from publishing and broadcasting any material that violates the provisions of the Cable Television Networks (Regulation) Act, 1995.

- In recent times, several satellite TV channels have presented incidents and their coverage in a manner that is unauthentic, misleading, sensational.
- In addition, several media reports were found using socially unacceptable language and comments.

- Channels reporting on the Ukraine-Russia conflict made exaggerated headlines,
- journalists made baseless and fabricated claims, and exaggerations were used to provoke viewers.
 - In the case of Delhi violence also some TV channels broadcast provocative headlines and videos of violence.
 - This can incite communal hatred between communities and disturb peace and law and order.
 - According to the Cable Television Networks (Regulation) Act, cable service should not carry any program that criticises friendly countries and threatens to attack religions or communities.

8. India's First Pure Green Hydrogen Plant Commissioned In Jorhat (April 22, 2022)

Exploration and production giant Oil India Limited (OIL) has commissioned "India's first 99.999% pure" green hydrogen plant in Jorhat, Assam.

- The Green Hydrogen production capacity of this plant is 10 kg per day which is expected to increase to 30 kg per day later.
- The plant produces green hydrogen from electricity generated by the existing 500 kW solar plant using a 100 KW ion exchange membrane (AEM) electrolyser array.
- Ion Exchange Membrane (AEM) technology is being used for the first time in India.
- OIL has initiated a study with Indian Institute of Technology (IIT)-Guwahati on blending of green hydrogen with natural gas for commercial applications of blended fuels.

• About Oil India Limited (OIL) -

- Oil India Limited (OIL) is the second largest Indian-government owned hydrocarbon explorer and producer.
- It is owned by the Ministry of Petroleum and Natural Gas, Government of India.
- Founded- 18 February 1959.
- headquarters - NOIDA
- Chairman & MD- Sushil Chandra Mishra

9. ISRO develops Space Bricks from Martian Soil (April 21, 2022)

Researchers from the Indian Space Research Organisation (ISRO) and the Indian Institute of Science (IISc) have developed a way to make bricks from Martian soil with the help of bacteria and urea.

- ISRO and IISc have collaborated to develop a novel scalable technique of manufacturing space bricks using Martian Simulant Soil (MSS).

- The researcher first made the slurry by mixing Martian soil with guar gum, a bacterium called *Sporosarcina pasteurii*, urea and nickel chloride (NiCl₂).
- This slurry can be poured into moulds of any desired shape, and over a few days the bacteria convert the urea into crystals of calcium carbonate.
- These crystals, along with biopolymers secreted by the microbes act as cement holding the soil particles together.
- The bacteria seep deep into the pore spaces, using their own proteins to bind the particles together, decreasing porosity and leading to stronger bricks.
- These 'space bricks' can be used to construct building-like structures on Mars that could facilitate human settlement on the red planet.

10. The Indian Navy launched the sixth and last submarine of the Kalvari class submarines under Project-75 (April 21, 2022)

The sixth and last of the French Scorpène-class submarines, Vagsheer, was launched at the Mazagon Docks Limited (MDL) in Mumbai.

- The 'Vagsheer' submarine was commissioned by Mrs. Veena Ajay Kumar, wife of Defence Secretary Ajay Kumar, in keeping with the naval traditions of a woman's launch or naming.
- This Scorpene class submarine will undergo sea trials for about 1 year, after which it will be inducted into the Indian Navy after successful completion.
- INS Vagshir is named after a deadly predatory fish found in the depths of the Indian Ocean.
- These submarines have been built by Mazagon Dock Shipbuilders Limited (MDL) in collaboration with France Naval Group in Mumbai.
- The first 'Vagshir' submarine was commissioned in the Indian Navy in December 1974 and was decommissioned in April 1997.
- The new Vagshir submarine is the latest incarnation of its older version.
- **The other five submarines to come from the Kalvari class**

-INS Kalvari -It was launched on 27 October 2015 and commissioned on 14 December 2017.

-INS Khanderi -It was launched on 12 January 2017 and commissioned on 28 September 2019

-INS Karanj - It was launched on 31 January 2018 and commissioned on 10 March 2021.

-INS Vela - It was launched on May 6, 2019 and commissioned on November 25, 2021.

-INS Vagir - It was launched on November 12, 2020 and sea trials have started from February 2022.

- **Features of Scorpene class submarines**

–The Scorpene class submarines are ensured with enhanced features such as advanced acoustic silencing technology, low radiative noise level, hydro-dynamically optimised shape and the ability to strike the enemy with precision weapons.

–These Scorpene-class submarines can attack the enemy with both torpedoes and tube-launched anti-ship missiles, both underwater or on the surface.

–Scorpene submarines can perform a variety of missions, such as anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying, area surveillance, etc.

- **Project 75-India**

—Project 75 intends to build six diesel-electric attack submarines of the Kalvari class that are based on the Scorpene-class, which are being built at MDL (Mazagon Dock Limited).

—Project 75 (I), approved in 2007, is part of the Indian Navy's 30 year Plan for indigenous submarine construction.