

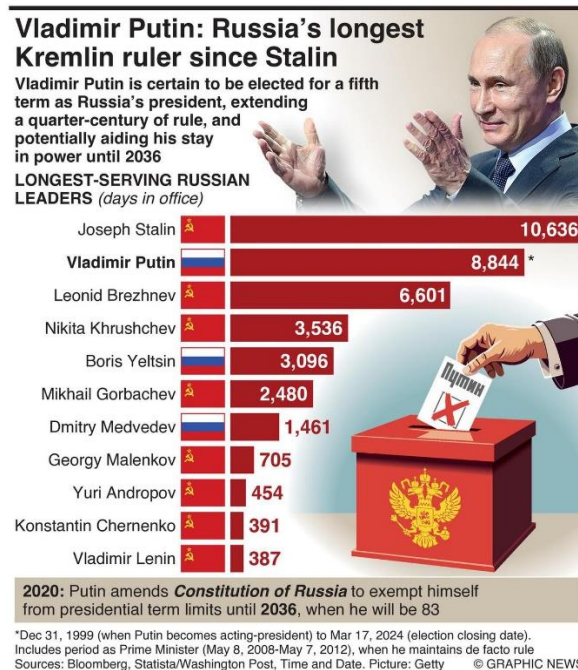
May - 10

TNPSC BITS

- ❖ State-owned Bharat Sanchar Nigam Limited (BSNL) is set to deploy 4G services nationally starting August 2024.
- ❖ The Spanish football club Real Madrid has been crowned the La Liga 2023-24 season title after beating Cadiz.
- ❖ For the first time in history, Ukraine's foreign ministry has introduced a virtual artificial intelligence spokesperson - Victoria Shi.
 - It aims to give updates on various issues, including the ongoing war with Russia.
- ❖ May 6 marks International No Diet Day to raise awareness about weight discrimination and fatphobia.
 - This year's theme is "Embrace Yourself: Reject Diet Culture, Love You."

INTERNATIONAL

Putin's Fifth Term



- ❖ Vladimir Putin began his fifth term on May 7 as Russian leader at a Kremlin inauguration.

- ❖ Putin won his first presidential election in March 2000 and a second term in 2004.
- ❖ After two stints as president, he switched back to being prime minister in 2008 to circumvent a constitutional ban on holding more than two consecutive terms as head of state.
- ❖ He returned to the presidency in 2012 despite pro-democracy protests in Moscow, winning a fourth term in 2018.

SCIENCE AND TECHNOLOGY

'All-in-one' vaccine



- ❖ Scientists have developed an all-in-one vaccine that they hope can protect humans against a broad range of coronaviruses, including ones that are yet to emerge.
- ❖ This vaccine works by training the body's immune system to recognise specific regions of eight different coronaviruses, including SARS-CoV-2 which caused the COVID-19 outbreak.
- ❖ The new vaccine is based on a structure called a nanoparticle – a ball of proteins held together by incredibly strong interactions.
- ❖ Chains of different viral antigens are attached to this nanoparticle using a novel "protein superglue".

Eta Aquariid Meteor Shower

- ❖ The Eta Aquariid meteor shower, which has been active since April 15, was peak on May 5 and 6.



- ❖ It is comprising burning space debris moving at speeds of around 66 km per second (2.37 lakh kmph) into Earth's atmosphere.
- ❖ These showers are seen in May every year.
- ❖ The Eta Aquariid meteor shower is known for its rapid speed. This makes for long, glowing tails which can last up to several minutes.
- ❖ They are visible to countries such as Indonesia and Australia in the Southern Hemisphere.
- ❖ Meteor showers come from comets, which are frozen leftovers from the formation of our solar system, some 4.6 billion years ago.
- ❖ Comets are composed of dust, rock and ice, and orbit around the Sun in highly elliptical orbits.
- ❖ In some cases, they take hundreds of thousands of years to complete.
- ❖ According to NASA, a total of 3,910 comets are currently known.
- ❖ Billions more are theorised to be orbiting the Sun beyond Neptune, in the Kuiper Belt and even more distant Oort cloud.



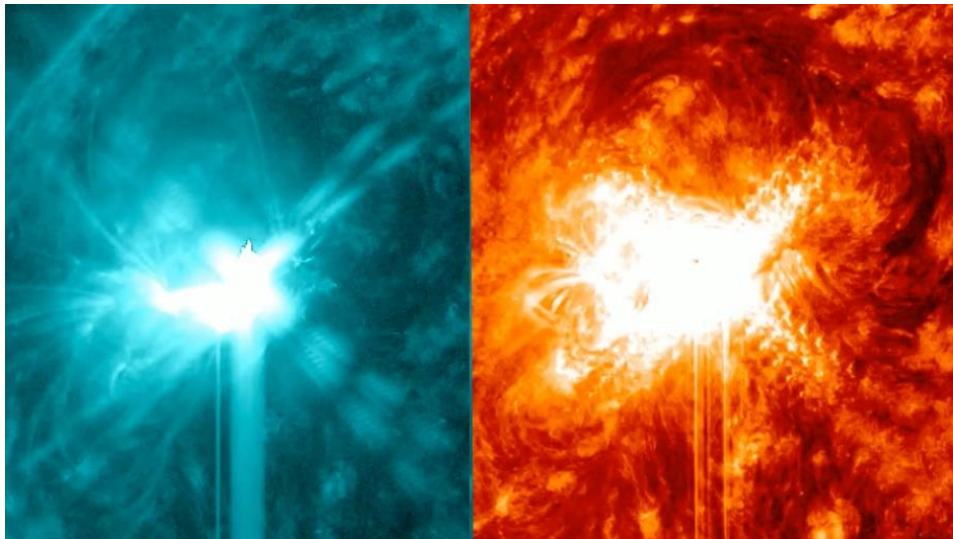
Building rail tracks on Moon

- ❖ NASA has been funding projects which seem far from reality, but if completed can take mankind's achievements in space to new heights.
- ❖ These 'ambitious' projects include a fluid-based telescope, a transit system to transfer humans and cargo to Mars and a lunar railway system.

- ❖ These projects are still in the exploratory stage and there is no guarantee of success.
- ❖ The FLUTE project gives a potential solution for creating space observatories which have a large aperture or unsegmented liquid primary mirrors.
- ❖ Such liquid primary mirrors get formed in space with the use of fluidic shaping in microgravity.



Powerful Solar Storms

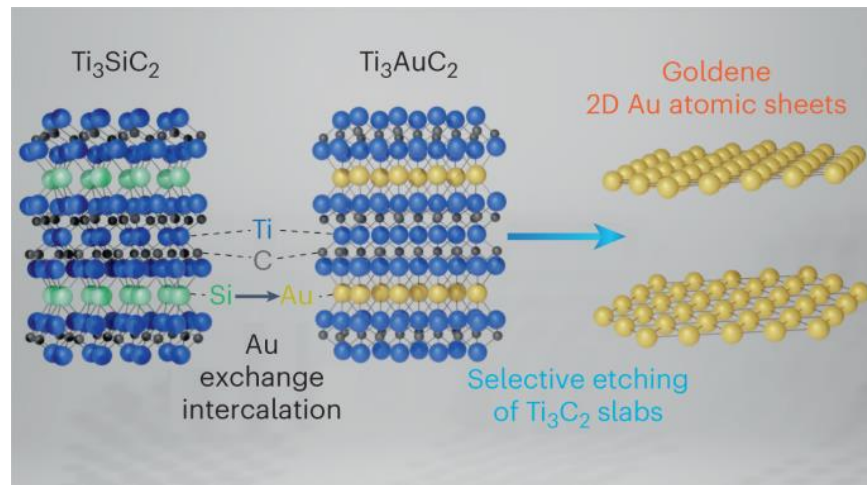


- ❖ Just days ago, two colossal solar flares have emerged from sunspot region AR3663 and Earth is in the firing line.

- ❖ The first eruption occurred on May 2 and it was an X-class flare, the most powerful category of solar flares.
- ❖ It causes shortwave radio blackouts across Australia, Japan and much of China.
- ❖ X FLARE! Sunspot region AR3663 just produced an X1.7 flare, the 11th largest flare so far this cycle.
- ❖ The second eruption reported was an M-class flare.
- ❖ Flares are classified according to their strength.
- ❖ After the most powerful X-class, there are M-class flares that are 10 times less powerful
- ❖ It is followed by C-class and finally, B-class flares.

Goldene sheet

- ❖ For the first time, researchers have created a free-standing sheet of gold that is only one atom thick.
- ❖ This makes gold the first metal to be formulated into (freestanding) 2D sheets — opening up a host of exciting possibilities for the future.
- ❖ It is not that such 2D materials have not been created before.
- ❖ Since the 2004 development of graphene, the atom-thin material made of carbon, scientists have identified hundreds of 2D materials.

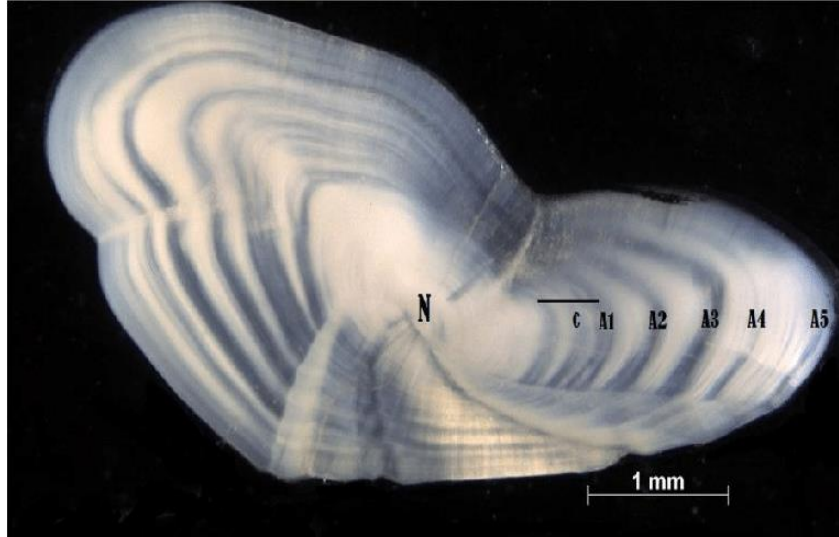


ENVIRONMENT

Otolith Rings

- ❖ Fish have a kind of stone in their ear that scientists can read like tree rings.

- ❖ Researchers has found a way to decode the chemicals in these stones to measure how much energy they used when alive.
- ❖ They could help bluefin tuna survive the climate crisis.
- ❖ The rising temperatures impact the metabolic rates of young bluefin tuna, particularly affecting their energy utilization.
- ❖ The otolith is a stony lump in the fish ear.
- ❖ Otolith rings, much like tree rings, reveal a fish's age.



Coral bleaching in Lakshadweep



- ❖ Widespread bleaching impacting of coral reefs Recorded in the Lakshadweep Sea owing to marine heatwaves.

- ❖ Lakshadweep islands have showed that a considerable percentage of hard coral species had undergone severe bleaching.
- ❖ This is primarily due to prolonged period of marine heat waves affecting the region since late October 2023.
- ❖ The ongoing heat waves also threaten other critical marine habitats, including seagrass meadows.
- ❖ Similar to corals, seagrass meadows are experiencing detrimental impacts due to the heatwaves, such as impaired photosynthesis, reduced growth, and hindered reproductive functions.

IMPORTANT DAYS

World Athletics Day 2024 - May 07

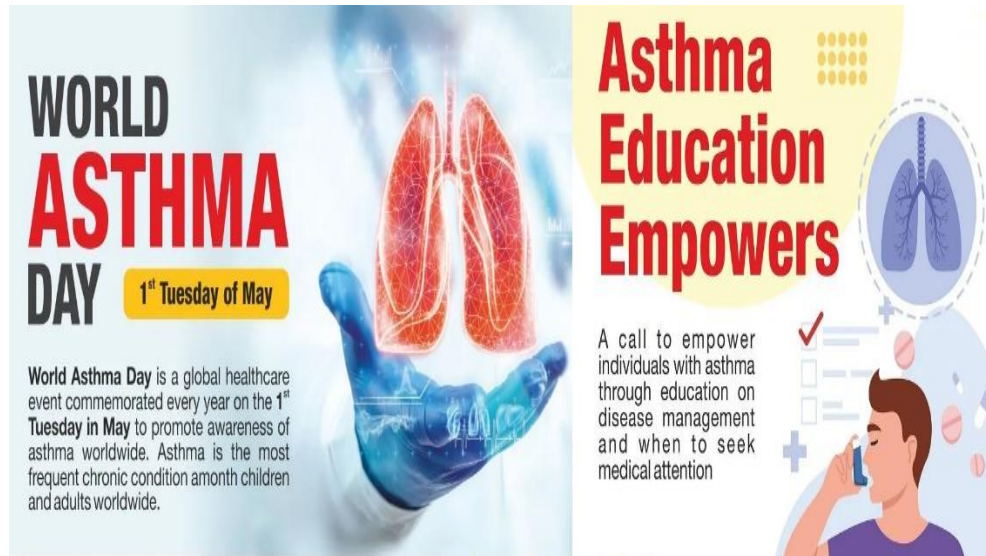
- ❖ The International Association of Athletics Federations (IAAF) was founded in Stockholm, Sweden on July 17, 1912.
- ❖ Since 2019, the organisation is referred to as World Athletics.
- ❖ The first World Athletics Day was celebrated on 1996.
- ❖ The theme for 2024 is 'World Mile Challenge'.



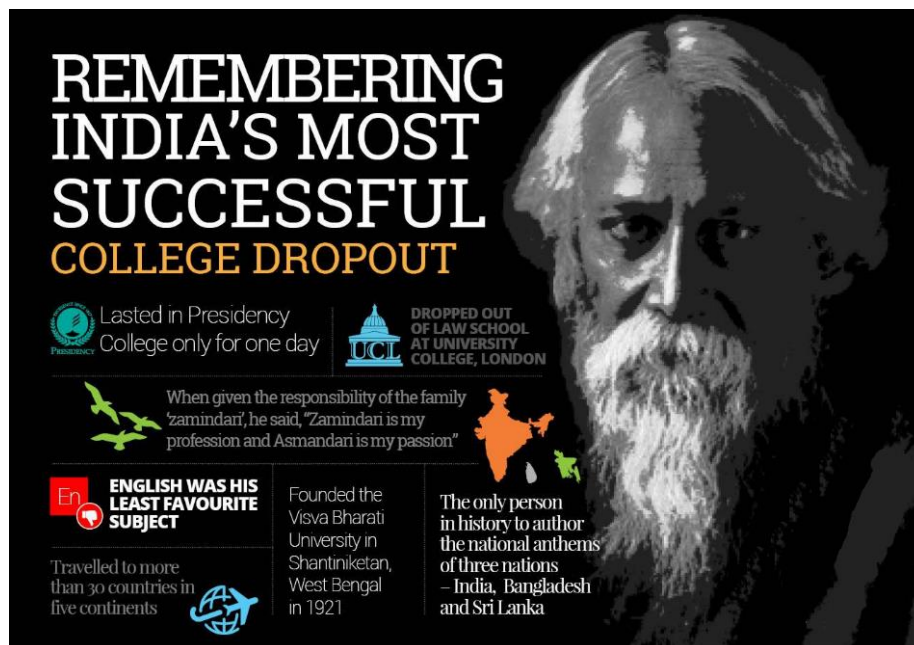
World Asthma Day 2024 - May 07

- ❖ Every year, World Asthma Day is observed on the first Tuesday of the month of May.

- ❖ The Global Initiative for Asthma (GINA) was established in 1993.
- ❖ The first World Asthma Day was observed in the year 1998.
- ❖ This day aims to spreading awareness about the challenges faced by people suffering from Asthma.
- ❖ The theme for 2024 is "Asthma Education Empowers".



Rabindranath Tagore Jayanti 2024 - May 07



- ❖ On May 7, 1861, Rabindranath Tagore was born in Jorasanko Thakurbari in Kolkata.



- ❖ He is a versatile poet, songwriter, playwright, novelist, author and a philosopher.
- ❖ He became the first non-European to receive Nobel Prize for Literature in the year 1913.
- ❖ He also wrote the national anthems for India, Bangladesh and Sri Lanka.

