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POLITY AND GOVERNANCE

SC rejects YSRCP plea against relaxation of postal ballot norms

CONTEXT: The Supreme Court on Monday found no merit in a petition filed by the YSR Congress Party (YSRCP) against a May 30 circular issued by the Election Commission (EC) "relaxing" postal ballot norms exclusively in the State of Andhra Pradesh.

The YSRCP had approached the top court after the State High Court dismissed the plea on the sole basis that there was an alternate remedy available, that is, to file an election petition.



About Postal voting

Postal voting, also known as absentee voting, is a method of voting in which electors cast their ballots by mail rather than in person at a polling station. This method is particularly useful for individuals who are unable to vote in person due to various reasons.

E.g., being away from their home constituency, having a disability, or being engaged in essential services on election day.

Who are eligible for Postal voting ?

Service voters:

Members of the armed forces, paramilitary forces, and other government employees deployed on election duty far from their home constituencies.

Absentee voters:

Individuals who are unable to vote in person due to reasons such as being away from their home constituency for work, illness, or disability.

Electors on election duty:

Government officials and polling staff who are assigned duties at polling stations other than their own.

Electors under preventive detention:

Individuals who are detained under preventive custody orders during the election period.

Eligibility during Covid pandemic

During the Covid-19 pandemic, the facility was extended to those infected or suspected to be infected with the coronavirus, starting with the Bihar Assembly elections in 2020.

Before the Bihar elections, the EC had recommended extending the postal ballot facility to those above 65 years of age and the Law Ministry had notified the amendment in June 2020.

However, the ECI eventually decided not to extend the facility to those above 65 years.

This was because the number of polling parties that would be required to cover the expanded age group would have been impractical.

Finally, in August 2023, the Law Ministry again amended the rule to take the eligibility back to 80 years from 65 years.

Later in March 2024, the govt decided to raise the minimum age for senior citizens, eligible for voting by postal ballot, to 85 years from 80 years.

ECONOMY

Sensex and Nifty-50 hit all-time high after exit poll predictions

CONTEXT: With a majority of exit polls predicting a third term for Narendra Modi, a state of exuberance gripped the Indian stock markets on Monday, and the key benchmark indices, the S&P BSE Sensex and NSE Nifty-50, surged over 3.3% to their all-time high. The Sensex gained 2,507.47 points or 3.39% to 76,468.78, its all-time closing high. During intraday trade, the index had touched its all-time mark of 76,738.89.

PSU and banking stocks led the gains at BSE. NTPC was up 9.21%, followed by State Bank (9.12%), Power Grid (8.97%), L&T (6.27%), Axis Bank (5.68%), and Reliance (5.65%).

The Nifty-50 index too surged 733.20 points or 3.25% to 23,263.90, its all-time closing high, led by Adani Ports, which gained 10.62%.



About Stock indexes

A stock index is a measurement of the changes that take place in the stock market. It measures price movement and market performance. To create an index, one has to group some stocks from a list of stocks with similar characteristics. This grouping of stocks can be based on the type of industry, total market capitalization, or size of the company.

Sensex, otherwise known as the S&P BSE Sensex index, is the benchmark index of India's BSE, formerly known as the Bombay Stock Exchange.) The Sensex is comprised of 30 of the largest and most actively-traded stocks on the BSE, providing a gauge of India's economy.

The index's composition is reviewed in June and December each year. Created in 1986, the Sensex is the oldest stock index in India. Analysts and investors use it to observe the cycles of India's economy and the development and decline of particular industries.

NIFTY is a market index introduced by the National Stock Exchange (NSE). It is a blended word – National Stock Exchange and Fifty coined by NSE. Nifty was established in 1996 under the name CNX Nifty. Further, in 2015, it was renamed Nifty 50. NIFTY 50 is a benchmark-based index and the flagship of NSE. It represents the performance of the 50 largest and most actively traded stocks listed on the NSE. These 50 largest companies are from different industrial sectors and collectively represent the Stock Market and Economic Trends of India.

SCIENCE AND TECHNOLOGY

ISRO develops new PraVaHa software for aerodynamic design

CONTEXT: The Indian Space Research Organisation (ISRO) has developed Computational Fluid Dynamics (CFD) software named Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis (PraVaHa).



This software was developed in ISRO's Vikram Sarabhai Space Centre (VSSC). It can simulate external and internal flows on launch vehicles, winged and non winged re-entry vehicles. According to ISRO, initial aerodynamic design studies for launch vehicles demand evaluation of a large number of configurations.

The unsteady part of aerodynamics contributes to serious flow issues around such rocket bodies and creates significant

acoustic noise during the mission. Computational Fluid Dynamics (CFD) is one such tool to predict the aerodynamic and aerothermal loads which solve numerically the equations of conservation of mass, momentum, and energy along with the equation of state.

PraVaHa has been used extensively in the Gaganyaan program for aerodynamic analysis of human-rated launch vehicles, viz, HLVM3, Crew Escape System (CES), and CM.

What Is Computational Fluid Dynamics?

Computational fluid dynamics is a branch of fluid mechanics that uses numerical analysis and algorithms to solve and analyse problems that involve fluid flows. High-speed supercomputers are used to perform the calculation that is required to simulate the interaction of liquids and gases.

Fluid Dynamics can be applied in the following ways:

- Fluid dynamics is used to calculate the forces acting upon the aeroplane.
- It is used to find the flow rates of material such as petroleum from pipelines.
- It can also be used in traffic engineering (traffic treated as continuous liquid flow).

About Vikram Sarabhai Space Centre (VSSC)

Vikram Sarabhai Space Centre (VSSC) at Thiruvananthapuram is the major centre of ISRO, where the design and development activities of satellite launch vehicles and sounding rockets are carried out and made ready for launch operations. The centre pursues research and development activities for associated technologies such as launch vehicle design, propellants, solid propulsion technology, aerodynamics, aero structural and aero thermal aspects, avionics, polymers and composites, guidance, control, and simulation, computer and information, mechanical engineering, aerospace mechanisms, vehicle integration and testing, space ordnance, chemicals and materials.

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"Education is the ability to listen to almost anything without losing your temper or your self-confidence." - Robert Frost

ECONOMY

Choksi, Mallya fled as probe agencies failed to arrest them at proper time: court

CONTEXT: Businessmen involved in multi-million dollar scams, such as Nirav Modi, Mehul Choksi and Vijay Mallya, were able to flee the country because probe agencies failed to arrest them at the proper time, a special court here said recently.

Special Judge M.G. Deshpande made the remark while hearing a plea of an accused booked under the Prevention of Money Laundering Act seeking modification in his bail condition. The court had on May 29 accepted the plea of Vyomesh Shah, an accused in a money laundering case, to drop the bail condition of getting the court's prior permission to travel abroad.

How Money Laundering Works?



What is Money laundering ?

Money laundering is a complex process used by individuals and organisations to conceal the origins of illegally obtained money. It involves making illicit funds appear legitimate through a series of transactions.

The Prevention of Money Laundering Act, 2002 (PMLA) is an Act of the Parliament of India enacted to prevent money laundering and provide for the confiscation of property derived from money laundering.

It aims to combat money laundering related to illegal activities such as drug trafficking, smuggling, and terrorism financing. The PMLA was enacted by India's Parliament under Article 253 which empowers it to make laws for implementing the international conventions.

This Article indicates that a law Parliament makes to implement any decision of an international body will be confined to the subject matter of that decision.

SCIENCE AND TECHNOLOGY

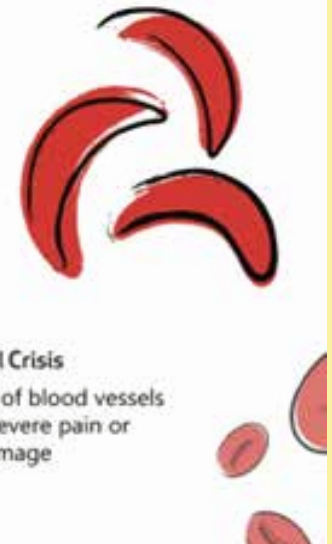
ICMR seeks to provide oral formulation of hydroxyurea to treat sickle cell disease

CONTEXT: The Indian Council of Medical Research (ICMR) has invited Expressions of Interest (EoI) from eligible organisations for the "joint development and commercialisation" of a low dose or paediatric oral formulation of hydroxyurea to treat sickle cell disease in India.

India has the highest prevalence of sickle cell disease in South Asia. Over 20 million people with the disease live in the country. While most pharmaceutical companies in India market 500-mg capsules or 200-mg tablets of hydroxyurea, the biggest challenge in treatment is that it is not available in the suspension form for effective use in the case of paediatric patients, the ICMR said.

What are Sickle Cell Disorders?

- A group of disorders that cause red blood cells to become misshapen and break down.
- The cells die early, leaving a short age of healthy red blood cells and can block blood flow causing pain.



Types:

Sickle Cell Anaemia

Dysfunctional red cells due to abnormal haemoglobin

Sickle Cell Crisis

Blockage of blood vessels causing severe pain or organ damage

What is Sickle Cell Disease (SCD)?

SCD is a group of inherited red blood cell (RBC) disorders. RBCs contain haemoglobin, a protein that carries oxygen and healthy RBCs are round. In SCD, the haemoglobin is abnormal, which causes the RBCs to become hard and sticky and look like a C-shaped farm tool called a "sickle".

Government Initiatives to Tackle SCD:

- The government released technical operational guidelines for the prevention and control of sickle cell anaemia in 2016.
- The State Haemoglobinopathy Mission has been established in Madhya Pradesh to address the challenges in screening and management of the disease.

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SCIENCE AND TECHNOLOGY

JWST spots oldest galaxy yet, from cosmic dawn

CONTEXT: NASA's James Webb Space Telescope (JWST) has spotted the earliest-known galaxy, one that is surprisingly bright and big considering it formed during the universe's infancy — at only 2% its current age.

By peering across vast cosmic distances, JWST is looking way back in time, observed the galaxy as it existed about 290 million years after the Big Bang event that initiated the universe roughly 13.8 billion years ago, the researchers said. This period spanning the universe's first few hundred million years is called cosmic dawn.

The telescope has revolutionised the understanding of the early universe since becoming operational in 2022. The new discovery was made by the JWST Advanced Deep Extragalactic Survey (JADES) research team.

This galaxy, called JADES-GS-z14-0, measures about 1,700 lightyears across. It has a mass equivalent to 500 million stars the size of our Sun and was rapidly forming new stars, about 20 every year.

James Webb Space Telescope



About James Webb telescope

The James Webb Space Telescope (JWST) is a monumental leap in space exploration and astrophysics. Launched on December 25, 2021, it is the largest and most powerful space telescope ever built, serving as the premier space-based observatory for the next decade. Developed by NASA with contributions from the European and Canadian space agencies, JWST is designed to observe the universe primarily in the infrared spectrum.

With its unprecedented resolution and sensitivity, the James Webb Space Telescope is like a time machine in space as it aims to probe the universe's earliest phases. JWST thus marks a new era in our understanding of the cosmos.

The JWST's features represent a significant advancement in space telescope technology, promising to deepen our understanding of the universe and its origins. Its key features are:

- **Infrared optimisation:** Designed primarily for infrared astronomy to observe objects which were too old, distant, or faint for visible light detection.

- **Large primary mirror:** Equipped with a 6.5-meter diameter primary mirror to capture more light and provide higher-resolution images.
- **Segmented mirror design:** The primary mirror comprises 18 hexagonal, gold-coated beryllium segments, thus enabling it to fold for launch and unfold in space.
- **Sunshield protection:** A five-layer sun-shield, which blocks solar light and heat, maintaining the instruments at extremely low temperatures necessary for infrared observations.
- **Location at Lagrange Point 2 (L2):** Operates from a stable orbit around the Sun-Earth L2 point thereby minimising light interference and reducing fuel consumption for orbital corrections.
- **High sensitivity:** Its instruments are highly sensitive to infrared light thus enabling the study of the earliest stars and galaxies formed after the Big Bang.

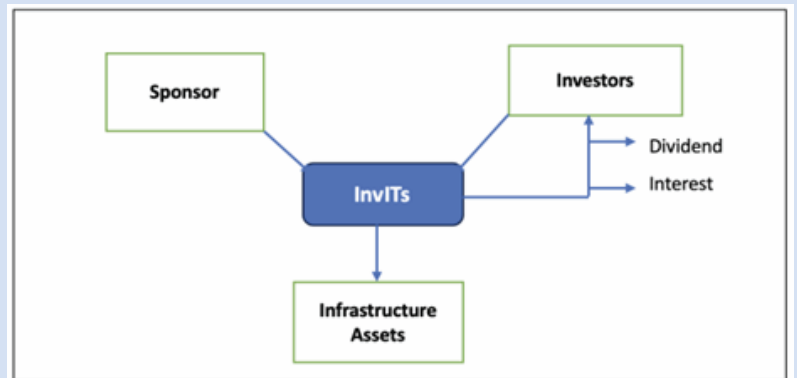
ECONOMY

More road projects, higher toll revenue boost the introduction of InvITs

CONTEXT: The faster pace of development of highways in FY25 alongside increased revenue from tolls and toll hikes are attracting road developers, private equity and pension funds to float road infrastructure investment trusts, assets under which are expected to more than double in the next three years creating a ₹1 lakh crore incremental lending opportunity.

In FY24 road InvITs controlled more than 10,000 km of road length and this is expected to cross 22,500 km by FY28, according to SBI Caps.

InvITs have emerged as one of the major buyers of operational road assets in India in recent years, and it has also facilitated the un- locking of capital for road developers once their road projects become operational.



Infrastructure Investment Trusts (InvIT):

InvITs are instruments that work like mutual funds. They are designed to pool small sums of money from a number of investors to invest in assets that give cash flow over a period of time. Part of this cash flow would be distributed as dividends back to investors.

The minimum investment amount in an InvIT Initial Public Offering (IPO) is Rs 10 lakh, therefore, InvITs are suitable for high

net-worth individuals, institutional and non-institutional investors.

Similar to stocks, InvITs raise capital through IPOs and are then tradable on stock exchanges. Examples of listed InvITs include the IRB InvIT Fund and India Grid Trust.

InvITs are regulated by the Securities and Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014.

INTERNATIONAL RELATIONS

Zelenskyy to attend D-Day landings event in Normandy

CONTEXT: Western leaders will this week mark on the beaches of northern France 80 years since Allied troops surged into Nazi-occupied Europe in the Second World War D-Day landings, haunted by the war again raging on the continent as Ukraine battles Russian invasion.

French President Emmanuel Macron is to host U.S. President Joe Biden, British King Charles III, and Canadian Prime Minister Justin Trudeau on the shores of Normandy, re-presenting the three main countries involved in the landings on June 6, 1944.



Operation Overlord was the codename for the Allied amphibious invasion of Northern France in World War II. It led to the Battle of Normandy and set the stage for the eventual liberation of Western Europe from Nazi Germany's occupation.

Taking place on June 6th, 1944, it involved more than 5,000 vessels, 1200 planes carrying airborne troops. Over 160,000 troops crossed the English Channel. Operation Overlord lasted until 30th August 1944, by which time Paris was liberated (on 25 August) and the bulk of the occupying German forces had retreated across the Seine River, signalling the liberation of France.

To this date it remains one of the most ambitious of all amphibious assaults ever in the history of warfare.

ECONOMY

Shriram Finance raises multi-currency loan of \$468 mn via ECB

CONTEXT: Shriram Finance Ltd. said it had raised \$425 million and €40 million through a syndicated term loan transaction. The funds raised through the social loan would be used to empower small entrepreneurs and vulnerable groups across India, the company said.



About External Commercial Borrowings (ECBs):

ECBs refer to the borrowing of funds by Indian companies from foreign sources in the form of loans, bonds, or other financial instruments.

Purpose: It can be used to finance a variety of purposes, including the expansion of business, the acquisition of assets, and the repayment of existing debt.

Source of ECBs: ECBs can be obtained from a variety of sources, including foreign banks, international financial institutions, and foreign subsidiaries of Indian companies.

ECB can be in the form of rupee-denominated loans, which are repaid in Indian rupees, or foreign currency-denominated loans, which are repaid in a foreign currency.

Regulation: ECB is subject to regulatory oversight by the RBI, which sets limits on the amount of ECB that Indian companies can obtain and the purposes for which it can be used.

The ECBs fall under the umbrella of RBI regulations as postulated under the Master Direction - External Commercial Borrowings, Trade Credits, and Structured Obligations (Master Direction), and the Foreign Exchange Management Act, 1999 (FEMA).

As of today, there are two paths to raise funds by employing ECBs: the approval route and the automatic route. There are a variety of eligibility regulations created by the government for availing of finance under the automatic route.

These regulations are in relation to amounts, industry, the end-use of the funds, etc. Companies that desire to raise finance via ECB must necessarily meet these eligibility criteria; thereafter, funds can be raised without the need for approval.

The approval route, on the other hand, mandates that companies which fall under certain pre-specified sectors must obtain the RBI's or the government's explicit permission, prior to raising funds through ECB.



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