Daily News Juice

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1. Overview of US Election Administration

Introduction

In the United States, election administration is highly decentralized. Unlike the Election Commission of India, the US Federal Election Commission (FEC) oversees campaign finance laws but does not conduct elections. Instead, elections are managed at the state and local levels, with each jurisdiction determining its own methods for voting and counting.



Voting Methods in the 2024 Election

Voters in the US use one of three main voting methods depending on their location:

1. Handmarked Paper Ballots

ed by 69.9% of voters, handmarked ballots are the most common method. Most states rely on this method exclusively, except for voters with disabilities who may use alternative systems.

2. Ballot Marking Devices (BMDs)

In 25.1% of jurisdictions, voters use BMDs. These devices display a digital ballot, allowing voters to select their choices before printing a paper record for tallying. BMDs, mandated by the Help America Vote Act (HAVA) of 2002, feature accessibility aids such as Braille and audio assistance.

3. Direct Recording Electronic (DRE) Systems

Only 5% of voters will use DRE systems, which are similar to India's EVMs as they cast and store votes electronically. Louisiana exclusively uses DREs without VVPAT, while Nevada relies on DREs with VVPAT for 95.4% of voters.

Shift in Preferred Voting Methods

Prior to 2000, all US jurisdictions used paper ballots. However, the contested 2000 presidential election led to the introduction of electronic voting systems. By 2006, 41.9% of jurisdictions offered DREs. Security concerns over DREs, particularly around hacking and interference, led to a shift back to paper ballots after 2008, a trend that accelerated after the 2016 election.

Counting and Verification of Votes

• **Counting:** Both handmarked ballots and BMD ballots are processed by optical scanners, which count and tabulate the votes.

• **Verification:** After tabulation, states have various self-audit procedures, which may include manual or machine-assisted recounts.

• **Certification:** Final vote tallies must be certified, with Certificates of Ascertainment due by December 11, over a month after Election Day.

Relevance: GS Prelims & Mains Paper II; International Issues Source: Indian Express

2. Why the US Imposed Sanctions on Indian Entities Amid the Russia-Ukraine War

Introduction

Recently, the United States sanctioned around 400 entities and individuals, including 19 Indian companies and two Indian nationals, for supporting Russia's military efforts in Ukraine. According to the US State Department, these entities enabled the "prosecution of [Russia's] illegal war" by supplying Russia with items critical to its weaponry.



Indian Firms Sanctioned

The US sanctioned Indian firms for supplying restricted items—particularly those listed under the Common High Priority List (CHPL), a catalog of 50 essential components jointly determined by the US, EU, Japan, and the UK as critical for Russian weapon systems. Here are some of the named firms and their roles:

1. Ascend Aviation India Private Limited

O Activity: Sent over 700 shipments, worth over \$200,000, of CHPL items, including aircraft components, to Russian companies between March 2023 and March 2024.

2. Mask Trans

O Activity: Supplied over \$300,000 worth of CHPL items, including aviation components, to Russian entities and S7 ENGINEERING LLC (a US-designated entity) from June 2023 to April 2024.

3. TSMD Global Private Limited

O Activity: Shipped at least \$430,000 worth of CHPL items to Russia, including electronic circuits and CPUs, between July 2023 and March 2024.

4. Futrevo

O Activity: Provided over \$1.4 million in CHPL items, including electronic components, to Russian firm SMT-ILOGIC, which manufactures Orlan drones. Shipments occurred between January 2023 and February 2024.

Understanding Economic Sanctions

Economic sanctions limit or sever economic interactions between the imposing entity and the target. Sanctions can vary in scope, from broad restrictions on trade with an entire country to targeted actions against specific companies or individuals.

Types of Sanctions:

• Import or Export Bans: Prohibits trade of certain goods or services.

• Asset Freezes: Prevents access to financial assets.

• **Banking and Currency Restrictions:** Bans the target from using certain financial systems or currencies.

Examples of US Sanctions: The US frequently applies sanctions to countries like Iran, North Korea, and China. Since the Ukraine war, Russia has become the most heavily sanctioned country in the world. International bodies like the United Nations and the European Union also have mechanisms for imposing sanctions, though enforcement often relies on individual member countries.

The Impact and Efficacy of Sanctions

Sanctions are used as pressure tools to compel countries or entities to change their behavior by inflicting economic harm. However, their effectiveness is debated:

• **Circumvention:** Targeted countries may find alternative trade partners. For instance, Russia has mitigated the impact of sanctions by increasing trade with India and China.

• **Collateral Effects:** Sanctions can hurt both the imposing and the targeted economies. Industries in the sanctioning country may suffer if they rely on raw materials from the sanctioned entity. Moreover, international organizations like the UN have limited enforcement mechanisms for sanctions, relying on individual countries for implementation.

Relevance: GS Prelims & Mains Paper II; International Relations Source: The Hindu

3. Discovery of the First "Black Hole Triple" System

Introduction



For the first time, scientists have discovered a black hole triple system, a rare arrangement featuring a black hole with two orbiting stars. Named V404 Cygni, the system lies approximately 8,000 light years from Earth in the constellation of Cygnus. This discovery provides fresh insights into the formation of black holes and hints at the possibility of more complex black hole systems.

What Is a Black Hole?

A black hole is a region in space where gravity is so strong that nothing—not even light—can escape. Black holes typically form when massive stars exhaust their fuel and undergo a supernova, a powerful explosion that leaves behind a dense core.

Structure of the Black Hole Triple System

Most black holes observed in space are in binary systems, which include a black hole and a single star or another black hole. In the case of V404 Cygni:

• The Black Hole: V404 Cygni, about nine times the mass of our Sun.

• **The First Star:** A small star orbiting close to the black hole every 6.5 days, which the black hole is actively consuming.

• The Second Star: A distant star orbiting the black hole over an astonishing 70,000 years.

How Was It Discovered?

Researchers from Caltech and MIT discovered this triple system while analyzing telescope data. The presence of two stars orbiting the black hole suggests they are linked through weak gravitational forces, forming a stable triple system rather than a random alignment.

Formation: "Failed Supernova" Hypothesis

Scientists suggest that the black hole in V404 Cygni formed through a "failed supernova." Instead of exploding, the original star likely underwent a "direct collapse," where it simply imploded due to gravity without shedding any material. This gentler process allowed the outer stars to remain in orbit around the black hole.

Implications of the Black Hole Triple System

1. Reconsidering Black Hole Formation: This discovery supports the idea that some black holes may form without supernovas, preserving nearby stars.

2. Potential for Hidden Triple Systems: Since the black hole is consuming the inner star, some binary systems observed today could have initially been triple systems.

In summary, the V404 Cygni black hole triple system sheds light on alternate ways black holes can form and evolve, possibly revealing a hidden complexity in black hole systems across the universe.

Relevance: GS Prelims; Science & Technology Source: Indian Express