



## 28th Conference of Parties To the UNFCCC

**For Prelims:** [28<sup>th</sup> Conference of Parties \(COP28\)](#), [United Nations Framework Convention on Climate Change \(UNFCCC\)](#), [Loss and Damage \(L&D\) Fund](#), [Global Goal on Adaptation](#), [Global Stocktake Draft](#), [Paris Agreement](#)

**For Mains:** Climate Change and its impact, Environmental Pollution & Degradation, 28th Conference of Parties (COP28)

[Source: TH](#)

### Why in News?

Recently, the [28<sup>th</sup> Conference of Parties \(COP28\)](#) to the [United Nations Framework Convention on Climate Change \(UNFCCC\)](#) was held in **Dubai, United Arab Emirates**.

### What are the Key Highlights of the COP28?

- **Loss and Damage (L&D) Fund:**
  - COP28, member countries reached an agreement to operationalize the [Loss and Damage \(L&D\)](#) fund aimed at compensating countries grappling with climate change impacts.
    - The [World Bank](#) will be the "interim host" of the fund for four years, aligning with UNFCCC and the [Paris Agreement](#).
  - All developing countries are eligible to apply, and every country is "invited" to contribute voluntarily.
    - A specific percentage is earmarked for **Least Developed Countries and Small Island Developing States**.
- **Global Stocktake Text:**
  - The [Global Stocktake \(GST\)](#) is a periodic review mechanism established under the **Paris Agreement in 2015**.
  - The fifth iteration of the **Global Stocktake (GST) text** was released at COP28 and adopted with no objection.
    - The text proposes eight steps to keep the global temperature rise within the ambit of 1.5 degrees Celsius:
      - **Tripling [renewable energy capacity](#)** globally and doubling the global average annual rate of energy efficiency improvements by 2030;
      - Accelerating efforts towards the phase-down of unabated coal power;
      - Accelerating efforts globally **towards [net zero emissions energy](#)** systems, utilizing zero and low carbon fuels well before or by around mid-century;
      - Accelerating **zero and low emissions technologies**, including, inter alia, renewables, nuclear, abatement and removal technologies, including such as [carbon capture](#) and utilization and storage, and low carbon [hydrogen production](#), to enhance efforts towards substitution of unabated fossil fuels in energy systems.
      - Transitioning away from [fossil fuels](#) in energy systems, in a just, **orderly**

**and equitable manner**, accelerating action in this critical decade, so as to achieve **net zero by 2050 in keeping with the science**;

- Accelerating and substantially **reducing non-CO<sub>2</sub> emissions**, including, in particular, methane emissions globally by 2030;
- Accelerating **emissions reductions from road transport** through a range of pathways, including development of infrastructure and rapid deployment of zero and low emission vehicles;
- **Phasing out of inefficient fossil fuel** subsidies that encourage wasteful consumption and do not address energy poverty or just transitions, as soon as possible.

◦ The fifth iteration text maintains continuity with **COP26 in Glasgow**, balancing global aspirations of countries like India with diverse energy needs.

- India argues that it needs to **continue using coal to meet its developmental needs** and emphasizes the importance of adhering to **nationally determined contributions (NDCs)**.

◦ Nearly 200 countries agreed to **"transition away from fossil fuels in energy systems"** at the COP28.

- The agreement is the first time countries have made this pledge. The deal aims to signal to **policymakers and investors** that the world is **committed to breaking away from fossil fuels**.

◦ Developing and poor countries are **expressing dissatisfaction with the latest draft of the Global Stocktake (GST) at COP28**, calling for significant changes.

◦ Several countries, including India, are extremely opposed to any mandate to cut **methane emissions**, mainly because one of the major sources happens to be **agriculture and livestock**.

- Cutting methane emissions could involve tweaking agricultural patterns which could be **extremely sensitive in a country like India**.

- Possibly in deference to the concerns of such countries, the **agreement does not mention any targets for methane emission** cuts for the year 2030, although a group of about 100 countries had made a voluntary commitment, in **Glasgow in 2021**, to reduce their methane emissions by **30% by 2030**.

- This pledge is known as the **Global Methane Pledge**. However, **India is not a part of the Global Methane Pledge**.

◦ Developing countries call on rich nations to achieve negative carbon emissions, not just reaching net zero by 2050. They emphasize principles of **common but differentiated responsibilities and respective capabilities (CBDR-RC)** in combating climate change.

◦ Developing countries argue that rich nations, having consumed over **80% of the global carbon budget**, should allow developing nations their fair share of future emissions.

▪ **Global Renewables and Energy Efficiency Pledge:**

- The Pledge stipulates that signatories commit to work together to **triple the world's installed renewable energy generation** capacity to at least **11,000 GW by 2030** and to collectively double the **global average annual rate of energy efficiency** improvements from around 2% to over 4% every year until 2030.

▪ **The Global Cooling Pledge for COP 28:**

- It includes 66 national government signatories committed to working together to reduce **cooling-related emissions** across all sectors by at least 68% globally relative to 2022 levels by 2050.

## ▪ Climate Finance:

- [The United Nations Conference on Trade and Development \(UNCTAD\)](#) estimates that wealthy nations owe developing countries USD 500 billion in 2025 under the [New Collective Quantified Goal \(NCQG\) for climate finance](#).
  - The NCQG was confirmed by developed countries under the **Paris Agreement in 2015**.
  - The goal is to set a new collective quantified goal before 2025. The goal will start from a floor of USD 100 billion per year.
  - This includes USD 250 billion for mitigation, USD 100 billion for adaptation, and USD 150 billion for loss and damage.
  - The figure is expected to increase to USD 1.55 trillion by 2030.
- The current climate finance goal of USD 100 billion per year has not been met, and developing countries are facing debt distress.
- Experts call for reform of the global financial architecture to address structural issues and promote sustainable development.

## ▪ Global Goal on Adaptation (GGA):

- The draft text on the Global Goal on Adaptation (GGA) was introduced. It was established under the **Paris Agreement to enhance climate change adaptation** by increasing awareness of and funding towards countries' adaptation needs in the context of the **1.5/2°C** goal of the Paris Agreement.
- The draft text addresses critical issues:
  - Climate-Induced Water Scarcity Reduction.
  - Climate-resilient food and Agriculture Production.
  - Strengthening Resilience Against Climate-Related Health Impacts.

## ▪ Declaration to Triple Nuclear Energy:

- The declaration launched at COP28 aims to **triple global nuclear energy capacity by 2050**.
- Endorsed by 22 national governments, the declaration calls for support from shareholders of international financial institutions. It encourages shareholders to **advocate for the incorporation of nuclear energy in energy lending policies**.

## ▪ Powering Past Coal Alliance (PPCA):

- PPCA is a coalition of national and sub-national governments, businesses and organizations working to advance the transition from **unabated coal power generation to clean energy**.
  - PPCA at COP28 welcomed new national and subnational governments, and called for cleaner energy alternatives.

## ▪ Coal Transition Accelerator:

- France, in collaboration with various countries and organizations, introduced the Coal Transition Accelerator.
  - Objectives include **knowledge-sharing, policy design**, and financial support to facilitate just transitions from coal to clean energy.
  - The initiative aims to leverage best practices and lessons learned for effective coal transition policies.

## ▪ Coalition for High Ambition Multilevel Partnership (CHAMP) for Climate Action:

- A total of 65 national governments signed CHAMP commitments to enhance cooperation, where applicable and appropriate, with subnational governments in the planning, financing, implementation, and monitoring of climate strategies.

## ▪ India Led Initiatives at COP28:

- **Global River Cities Alliance (GRCA):**
  - It was launched at COP 28, led by the [National Mission for Clean Ganga \(NMCG\)](#) under the [Ministry of Jal Shakti](#), Government of India.
  - The GRCA is a unique alliance covering 275+ global river-cities in 11 countries.
    - Partner countries include Egypt, Netherlands, Denmark, Ghana, Australia, Bhutan, Cambodia, Japan and river-cities of The Hague (Den Haag) from the Netherlands, Adelaide from Australia, and Szolnok of Hungary.
  - GRCA highlights **India's role in sustainable river-centric development** and climate resilience.
  - The GRCA platform will facilitate knowledge exchange, river-city twinning, and dissemination of best practices.

◦ **Green Credit Initiative:**

- India launched the Green Credit Initiative here at COP28, to create a participatory **global platform for exchange of innovative environmental programs and instruments.**
- There are two main priorities of the initiative are [water conservation](#) and [afforestation](#).
- The main purpose of this initiative is to **boost voluntary environmental activities** like tree plantation, water conservation, [sustainable agriculture](#), and [waste management by incentivizing](#) it for big corporations and private companies, bringing about a change in the **climate issues** faced by the country.

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# UNFCCC

Conference of Parties (COP)

- Supreme decision-making body of UNFCCC
- Meets in **Bonn**, the Secretariat (unless a Party offers to host the session)
- Meets **every year** (unless the Parties decide otherwise)
- First COP – held in **Berlin**, Germany (1995)

## COPs and Their Major Outcomes

### COP 3 (1997)

Kyoto, Japan

Adopted **Kyoto Protocol** (legally binded developed countries to **reduce emission targets**)

### COP 7 (2001)

Marrakech, Morocco

**Marrakech Accords** signed (set stage for **ratification of Kyoto Protocol**)

### COP 8 (2002)

New Delhi, India

- **Delhi Declaration** (development needs of the poorest countries)
- **Technology transfer** for climate change (CC) mitigation)

### COP 15 (2009)

Copenhagen, Denmark

Developed countries pledged up to **\$30 billion in fast-start finance** (for 2010-12)

### COP 14 (2008)

Poznan, Poland

- **Adaptation Fund under Kyoto Protocol** launched
- **Poznan Strategic Programme on Technology Transfer**

### COP 13 (2007)

Bali, Indonesia

**Bali Road Map and Bali action plan** (on shared vision, mitigation, adaptation, technology and financing)

### COP 16 (2010)

Cancun, Mexico

- **Cancun Agreements** (assist developing nations in dealing with CC)
- Established: **Green Climate Fund**

### COP 18 (2012)

Doha, Qatar

**Doha Amendment to Kyoto Protocol** (reducing GHG emissions by 18% compared to 1990 levels)

### COP 19 (2013)

Warsaw, Poland

- **Warsaw Framework for REDD Plus**
- **Warsaw International Mechanism for Loss and Damage**

### COP 24 (2018)

Katowice, Poland

**Rulebook for Paris Agreement** (actions to be taken as per NDCs)

### COP 21 (2015)

Paris, France

- **Paris Agreement** (global temp. well below 2°C above pre-industrial times)
- **Climate finance** by rich countries
- **yearly \$100bn funding pledge** by rich countries)

### COP 26 (2021)

Glasgow, UK

- India announced **Net Zero Targets 2070**
- India called for **"phase-down"** of coal-based power
- **Glasgow Breakthrough Agenda** (by 41 countries + India)

### COP 27 (2022)

Sharm-el-Sheikh, Egypt

- **Loss & Damage Fund**
- USD 3.1bn plan for **early warning systems**
- **G7-led 'Global Shield Financing Facility'** for countries suffering climate disasters
- **African Carbon Market Initiative**
- **Action for Water Adaptation and Resilience (AWARe)** initiative
- **Mangrove Alliance** (in partnership with India)
- **India's Long-Term Low Emission Development Strategy**



## UPSC Civil Services Examination, Previous Year Questions

### Mains

**Q.** Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? **(2021)**

## Bihar Reservation Law and Breaching 50% Limit

**For Prelims:** [Bihar Reservation Law](#) and Breaching 50% Limit, [Supreme Court \(SC\)](#), Scheduled Castes, Scheduled Castes & Other Backward Classes, 77th Constitutional Amendment Act, 1995.

**For Mains:** Bihar Reservation Law and Breaching 50% Limit, Government Policies and Interventions for development in various sectors and issues arising out of their design and implementation.

[Source: TH](#)

### Why in News?

Recently, Bihar Reservation Laws were passed in Bihar Assembly, **increasing the quantum of reservations in jobs** and education in the State to 75%, breaching the 50% Rule upheld by the [Supreme Court \(SC\)](#).

- This has sparked debate around the **permissible limits of reservations in India**, particularly in view of the “50%” limit prescribed by the Supreme Court of India in the Mandal Commission case (Indra Sawhney, 1992).

### What are the Key Highlights of the Bihar Reservation Laws?

- These laws are the **Bihar Reservation of Vacancies in Posts and Services (for Scheduled Castes, Scheduled Tribes and Other Backward Classes) Amendment Act-2023** and the **Bihar (in admission in educational institutions) Reservation Amendment Act, 2023**.
- Under the amended Act, there will be a total of 65% reservation in both the cases, including 20% for [Scheduled Castes](#), **2% for [Scheduled Tribes](#)**, 18% for Backward Classes and 25% for Extremely Backward Classes.
- Apart from this, EWS (people from economically weaker general category) already approved under the Central Act will continue to get 10 % reservation.

### What is the 50% Rule?

- **About:**
  - The 50% rule, historically upheld by the Supreme Court, dictates that reservations for jobs or education in India **should not exceed 50% of the total seats or positions**.

- Initially established by a seven-judge bench in the 1963 M.R. In The Balaji case, reservations were considered an **"exception" or "special provision"** under the constitutional framework, thereby restricted to a maximum of 50% of available seats.
- However, the understanding of reservations evolved in 1976 when it was acknowledged that reservations are not an exception but a component of equality. Despite this shift in perspective, **the 50% limit remained unchanged.**
- A nine-judge bench in the **Mandal commission case in 1990** reaffirmed the **50% limit and held that it is a binding rule**, and not merely a matter of prudence. However, it is not a rule without exceptions
- States **may surpass the limit in specific circumstances**, notably to provide reservations to communities marginalized and excluded from the social mainstream, **irrespective of geographical location.**
- Moreover, the Supreme Court's recent affirmation of the 103rd Constitutional Amendment validates an additional 10% reservation for **Economically Weaker Sections (EWS)**.
  - This means that the **50% limit applies only to non-EWS reservations**, and States are permitted to reserve a total of 60% of the seats/posts including EWS reservations.
- **Other States Crossing the Limit:**
  - Other States that have already surpassed the 50% limit, even excluding the EWS quota, are **Chhattisgarh (72%), Tamil Nadu (69%**, under a 1994 Act protected under the ninth Schedule of the Constitution), and several north-eastern States including Arunachal Pradesh, Meghalaya, Mizoram and Nagaland (80% each).
  - Lakshadweep has a **whopping 100% reservations for Scheduled Tribes.**
  - Previous attempts by **Maharashtra and Rajasthan** have been struck down by the courts.

## Constitution and Reservation

- **77<sup>th</sup> Constitutional Amendment Act, 1995:** The Indra Sawhney verdict had held there would be reservation only in initial appointments and not promotions.
  - However, addition of the article 16(4A) to the Constitution, empowered the state to make provisions for reservation in matters of promotion to SC/ST employees, if the state feels they are not adequately represented.
- **81<sup>st</sup> Constitutional Amendment Act, 2000:** It introduced Article 16(4B), which says unfilled SC/ST quota of a particular year, when carried forward to the next year, will be treated separately and not clubbed with the regular vacancies of that year.
- **85<sup>th</sup> Constitutional Amendment Act, 2001:** It provided for the reservation in promotion that can be applied with 'consequential seniority' for the government servants belonging to the SCs and STs with retrospective effect from June 1995.
- **103<sup>rd</sup> amendment to the Constitution (2019):** [10% reservation for EWS \(Economically Weaker Section\).](#)
- **Article 335:** It says that the claims of **SCs and STs shall be taken into consideration constitutently** with the maintenance of efficiency of administration, in the making of appointments to services and posts in connection with the affairs of the Union or of a State.

## Way Forward

- Courts should **reevaluate the 50% reservation** cap considering evolving social dynamics, equity principles, and the changing socio-economic landscape.
  - Deliberate on expanding the exceptions beyond social exclusion to include broader criteria for communities facing historical disadvantages, irrespective of geographical boundaries.
  - Conduct a **detailed review of the existing reservation policies**, exploring their effectiveness, impact, and alignment with current societal needs.
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# FSB's Concerns About Crypto Asset Intermediaries

**For Prelims:** [Financial Stability Board \(FSB\)](#), [Cryptocurrency](#), [Bitcoin](#), [Ethereum](#), Litecoin

**For Mains:** Significance of Financial Stability Board (FSB) in monitoring global financial system

**Source:** [TH](#)

## Why in News?

Recently, the [Financial Stability Board \(FSB\)](#)'s latest report on **crypto-asset intermediaries** sought measures to enhance **cross-border cooperation** and **information sharing** among local authorities. This is to effectively regulate and address gaps in **Multi-function Crypto-asset Intermediaries (MCIs)** operating globally.

## What are Crypto Assets?

- Crypto assets are a digital representation of value that can transfer, store, or trade electronically. This also includes [non-fungible tokens \(NFTs\)](#).
  - NFTs are blockchain-based tokens that each represent a unique asset like a piece of art, digital content, or media. An NFT can be thought of as an irrevocable digital certificate of ownership and authenticity for a given asset, whether digital or physical.
- Crypto assets are a subset of digital assets that use **cryptography** to protect digital data and distributed **ledger technology** to record transactions.

## What are the Multi-function Crypto-asset Intermediaries (MCIs)?

- **MCIs** is an individual firm, or groups of affiliated firms that offer a range of **crypto-based services, products** and **functions** which primarily revolve around operating the trading platform.
  - Examples include Binance, Bitfinex and Coinbase.
- The primary source of revenue for these platforms are the **transaction fees** generated from trading-related activities.
- These MCIs may also derive revenue from operating a [blockchain infrastructure](#) for which they may collect transaction validation fees.

## What are the Concerns Related to MCIs as per FSB's Report?

- **Transparency:** The report observes that most **MCIs** are generally **not transparent** about their corporate structure. If they disclose information it is typically for a small part of their business, specific to a jurisdiction.
  - **MCIs** failed to provide a clear account of transactions activities or audit practices.
- **Anti-Competitive Behavior:** Having a large concentration of services in one place may lead to [anti-competitive behavior](#), making the system more vulnerable.
  - This concentration could make it **harder for new competitors** to enter the market and increase the costs for users who want to switch to a different service provider.
- **Crypto-Friendly Banks:** The shutting down of banks friendly to crypto assets highlights the widespread risk of having a significant concentration of deposits tied to businesses relying on crypto assets.
  - Market stress in crypto-asset markets led to substantial losses for investors, eroding confidence in these markets.
- **Cryptocurrencies and Fiat currencies:** MCIs rely on banks and payment providers for transaction services, including converting between **cryptocurrencies** and (on-ramp and off-ramp



services).

- If the trading platform stops operating or if the bank fails to offer real-time operations, there is a risk of counterparty issues.
- Additionally, providing loans and credit lines to MCIs by banks involves credit risk, especially when using crypto-based collaterals that may decline in value in the future.

## What is Financial Stability Board (FSB)?

- The FSB is an **international body** that **monitors** and makes **recommendations** about the **global financial system**.
- **FSB** was established in 2009 under the aegis of **G20**.
- **India** is an active Member of the FSB having three seats in its **Plenary** represented by Secretary of Economic Affairs, Ministry of Finance, Deputy Governor of **Reserve Bank of India (RBI)**, Chairperson of **Securities and Exchange Board of India (SEBI)**.

## Way Forward

- **International Cooperation and Information Sharing:**
  - Promote enhanced cross-border cooperation and information sharing among local authorities to effectively regulate and address gaps in the operations of MCIs.
  - Establish international standards for transparency and reporting to ensure a comprehensive understanding of the operations of MCIs across jurisdictions.
- **Regulatory Measures:**
  - Develop and implement clear regulatory frameworks specifically tailored to address the unique challenges posed by MCIs, fostering market integrity, investor protection, and financial stability.
- **Corporate Transparency:**
  - Mandate MCIs to enhance **corporate transparency** by providing detailed information about their **corporate structure, business lines, and operations**.
  - Implement measures to penalize non-compliance with transparency standards, ensuring that MCIs disclose relevant information for comprehensive regulatory oversight.

## UPSC Civil Services, Previous Year Questions (PYQ)

**Q. With reference to 'Financial Stability and Development Council', consider the following statements: (2016)**

1. It is an organ of NITI Aayog.
2. It is headed by the Union Finance Minister.
3. It monitors macro-prudential supervision of the economy.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans: (c)**

# Web Browsers

**For Prelims:** [Web Browsers](#), [www \(World Wide Web\)](#), HTML, CSS, and JavaScript, Virtual Reality (VR) and Augmented Reality (AR).

**For Mains:** Web Browsers, Developments and their applications and effects in everyday life.

**Source:** TH

## Why in News?

Web browsers are our digital passports to the vast universe of the internet, making it easy for us to explore and **access web pages with just a click.**



## What are Web Browsers?

### ▪ About:

- The web browser is an application software to explore [www \(World Wide Web\)](#). It provides an **interface between the server and the client and requests to the server** for web documents and services.
- It works as a compiler to render HTML (Hypertext Markup Language) which is used to design a webpage.
- Whenever we search for anything on the internet, the browser loads a web page written in **HTML, including text, links, images**, and other items such as stylesheet and JavaScript functions.
  - Google Chrome, Microsoft Edge, Mozilla Firefox, and Safari are examples of web browsers.

### ▪ Origin:

- In the nascent days of the internet, browsing was a **text-based venture until Tim**

**Berners-Lee** introduced the **World Wide Web in 1990**, alongside the inaugural web browser, '**WorldWideWeb**'.

- The transformative **Mosaic browser in 1993** brought images into the web landscape, **revolutionizing user interaction**.
- Netscape Navigator's advent further **enhanced browsing by introducing bookmarks and user-friendly features**, sparking the 'Browser Wars' between it and Internet Explorer.

▪ **The Evolutionary Leaps:**

- The monotony of **Internet Explorer's dominance was broken by Mozilla Firefox** in 2004-2005, propelling innovation with tabbed browsing and add-ons, setting new standards.
- Google's Chrome, with its speed and minimalism, emerged in 2008, triggering a revitalization of the browser market.
- Other contenders such as Apple's Safari and Microsoft Edge (a successor to Internet Explorer) evolved, providing diverse options tailored to user preferences.

▪ **Anatomy of Web Browsers:**

- **Request and Response:** Initiating a website visit **triggers a sequence of digital communication**, akin to dispatching and receiving messages via a network of servers.
- **Deconstructing the Response:** Webpage information **arrives in files encoded in HTML, CSS (Cascading Style Sheets), and JavaScript**, each playing a pivotal role in constructing the final web page.
  - **HTML** provides the **architectural blueprint of a webpage**. Similar to the skeletal framework of a building, made with iron bars, bricks, and cement, **HTML defines the structure of the page**, outlining elements like headings, paragraphs, images, and links.
  - **CSS** is considered to be the **interior designer of the digital world**. This information **imparts style and aesthetics to the HTML structure** by controlling attributes like **colour schemes, fonts, spacing, and positioning**.
  - **JavaScript** is the **dynamic engine, making web pages interactive and responsive**. Analogous to the electrical system in a building, JavaScript breathes life into static content. It allows interactive elements like pop-ups, forms, animations, and real-time updates, creating an engaging user experience.
- **Rendering:** The browser assembles the webpage by decoding HTML structure, applying CSS for aesthetics, and executing JavaScript for interactivity, all within seconds.
- **Data Management:** **Cookies** store browsing data for seamless navigation, while the cache retains frequently accessed files, accelerating page loading times.
- **Security Measures:** Browsers employ encryption protocols like HTTPS and warning systems to shield and alert users against potential threats.

## What is the Future of Browsing?

- As technology hurtles forward, web browsers evolve in tandem. They are embracing **cutting-edge technologies like WebAssembly**, a format that enables near-native performance within the browser environment.
- Support for **Virtual Reality (VR)** and **Augmented Reality (AR)** experiences is also on the horizon, promising immersive online interactions.
- Additionally, privacy features are being bolstered, providing users with greater control over their digital footprint.
- Web browsers are the unsung heroes of our digital endeavours, translating code into the dynamic web pages that form the backbone of our online experiences.
- By unravelling the intricate tapestry of processes that underlie their operation, we gain a newfound appreciation for the seamless magic they conjure with every click.

## UPSC Civil Services Examination Previous Year's Question (PYQs)

### Prelims:

**Q. Consider the following statements: (2019)**

## A digital signature is

1. an electronic record that identifies the certifying authority issuing it
2. used to serve as a proof of identity of an individual to access information or server on Internet
3. an electronic method of signing an electronic document and ensuring that the original content is unchanged

## Which of the statements given above is/are correct?

- (a) 1 only  
(b) 2 and 3 only  
(c) 3 only  
(d) 1, 2 and 3

## Ans: (c)

- Digital signature is not a record, and the identification of certifying authority is ascertained from the digital certificate, not digital signature. Hence, statement 1 is not correct.
- A digital signature is used to authenticate the identity of the sender of a message or the signer of a document, and not to serve as a proof of users' authenticity to access a website or information on the Internet. Hence, statement 2 is not correct.
- A digital signature is an electronic form of a signature that allows the recipient to trust the fact that a known sender sent the message and it was not altered in transit. Hence, statement 3 is correct. Therefore, option (c) is the correct answer.

## Mains:

**Q:** Discuss different types of cyber crimes and measures required to be taken to fight the menace. **(2020)**

**Q:** Discuss the advantages and security implications of cloud hosting of servers vis-a-vis in house machine based hosting for government businesses. **(2015)**

**Q:** What is a digital signature? What does its authentication mean? Give various salient built-in features of a digital signature. **(2013)**

## Universal Declaration of Human Rights

[Source: IE](#)

### Why in News?

Human Rights Day is observed annually on **10<sup>th</sup> December** to commemorate the approval of the [Universal Declaration of Human Rights \(UDHR\)](#) by the [UN General Assembly](#) in 1948.

- This year 2023 marks the **75<sup>th</sup> anniversary** of the UDHR.
- 2023 Theme: **Freedom, Equality and Justice for All.**

### What is Human Rights?

- These are rights **inherent to all human beings, regardless of race, sex, nationality, ethnicity, language, religion, or any other status.**
- These include the [right to life and liberty](#), **freedom from slavery and torture**, freedom of



opinion and expression, the right to work and education, and many More.

- Nelson Mandela had stated '**To deny people their human rights is to challenge their very humanity**'.
- **Article 1 of Universal Declaration of Human Rights (UDHR) states** that "all human beings are born free and equal in dignity and rights."
  - **And Article 2 says that** everyone is entitled to all the rights and freedoms the declaration sets out, "without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.
- **Articles 12 to 35 of the Indian Constitution** provide for the Right to Equality, Right to Freedom, Right Against Exploitation, Right to Freedom of Religion, Cultural & Educational Rights, Saving of Certain Laws and Right to Constitutional Remedies.

## What is Universal Declaration of Human Rights (UDHR)?

- **About:**
  - The 30 rights and freedoms include civil and political rights, like the right to life, liberty, free speech and privacy and economic, social and cultural rights, like the right to social security, health and education, etc.
    - India took an active part in the drafting of the UDHR.
  - The UDHR is not a treaty, so it does not directly create legal obligations for countries.
  - The UDHR, together with the **International Covenant on Civil and Political Rights** and its two Optional Protocols (on the complaints procedure and on the death penalty) and the **International Covenant on Economic, Social and Cultural Rights** and its Optional Protocol, form the so-called International Bill of Human Rights.
  - This declaration, established as a common standard of achievement for all peoples and nations, played a foundational role in shaping the international order that emerged after the devastation of **World War II**.
- **Achievements:**
  - **The Non-Binding Nature of the Declaration:**
    - The UDHR, established in 1948, **is not a legally binding treaty in itself**. However, its principles have been widely adopted and integrated into the legal frameworks of numerous countries.
  - **Influence and Global Impact:**
    - The UDHR's significance transcends its non-binding status, having served as a catalyst for over 70 human rights treaties globally. Its influence is evident in movements such as **decolonization, anti-apartheid, and various freedom struggles worldwide**.
    - Without the UDHR, **a fragmented landscape with differing standards could have emerged**, creating a potentially more challenging situation.
- **The Universal Standard and Ongoing Relevance:**
  - Despite some criticisms asserting its inapplicability to specific religions, cultures, or regions, UNDR's arising from agreements building on the 1948 declaration, underscores its enduring relevance.
  - The **Vienna Declaration and Program of Action in 1993**, for instance, further solidified the principles set forth in the UDHR.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**Q. Other than the Fundamental Rights, which of the following parts of the Constitution of India reflect/ reflects the principles and provisions of the Universal Declaration of Human Rights (1948)? (2020)**

1. Preamble
2. Directive Principles of State Policy
3. Fundamental Duties

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (d)

## Anarcho-Capitalism

Source: TH

### Why in News?

The term "**anarcho-capitalism**" has recently gained attention, particularly with the recent electoral victory of [Javier Milei](#), a **self-proclaimed anarcho-capitalist**, in the **presidential race in Argentina**.

- This political philosophy advocates for the **abolition of the state**, proposing that **private companies manage law and order** in a free market.

### What is Anarcho-Capitalism?

#### ▪ About:

- Anarcho-capitalism, political philosophy and political-economic theory that advocates the voluntary exchange of goods and services in a society broadly **regulated by the market rather than by the state**.
- The term anarcho-capitalism was coined by **Murray Rothbard**, a leading figure in the American libertarian movement from the 1950s.
- Anarcho-capitalists assert that **private companies** in a free market **can efficiently provide policing and legal services**.
- The philosophy contends that similar to private sectors offering superior products and services, private policing and legal systems can outperform state-monopolized counterparts.
  - In an anarcho-capitalist society, individuals pay private police and courts for protection and dispute resolution.
  - Private companies, driven by customer patronage, are argued to be more accountable, as dissatisfied customers can **switch to competing services**.
- Anarcho-capitalists advocate for competitive markets, asserting that they guarantee **top-tier and cost-effective police and legal services**. This contrasts with **state-funded systems**, providing customers the **freedom to select services aligned with their preferences and needs**.

#### ▪ Concerns:

- Multiple private firms offering police and judiciary services in a single region **may lead to armed conflicts and chaos**.
- Skepticism arises about a **market-based system favouring the wealthy**, allowing them to escape justice by paying more to private firms.
  - Apprehensions exist that a **profit-driven system could marginalize the poor**, limiting their access to justice.
- Critics worry that **without a centralized authority, private firms may not be accountable to the broader public**, influencing justice based on financial interests, and potentially compromising the integrity of justice.

- The absence of a centralized authority may **increase the risk of vigilantism**, where individuals or groups take the law into their own hands.
  - Anarcho-capitalism could **worsen societal inequalities**, providing better legal protection for those who can **afford premium services**.
- The absence of a standardized legal framework may result in varying standards of justice, creating uncertainty and inconsistency in legal outcomes.
- **Anarcho-Capitalist Responses to Concerns:**
  - Private firms would **aim to satisfy the larger market**, not just the wealthy, ensuring fair and accessible justice for all.
  - In a competitive market, private firms **depend on customer patronage**, making them accountable to the public and responsive to their needs.
    - Private firms may strive to meet the demand at the **bottom of the pyramid**, potentially offering better chances of justice for the poor.
  - Competitive pressures among private firms would lead to agreements on common rules, preventing conflicts and potential vigilantism.

## Painkiller Meftal and DRESS Syndrome

[Source: IE](#)

### Why in News?

Recently, the **Indian Pharmacopoeia Commission (IPC)** has issued a drug safety alert about **Meftal**, the common painkiller, saying its constituent, mefenamic acid, triggers severe allergic reactions like the **DRESS syndrome**, which affects internal organs.

### What is DRESS Syndrome?

- **DRESS syndrome** (Drug Rash with Eosinophilia and Systemic Symptoms) is a severe allergic reaction affecting around 10% of individuals, **potentially deadly** and caused by certain medications.
- It is also known as **Drug-Induced Hypersensitivity Syndrome (DIHS)**.
- It is characterized by **skin rash, high fever, swollen lymph nodes** and complications in internal organs.

### What is the Use and Associated Side Effects of Meftal?

- **Uses:**
  - Meftal is commonly used as **non-steroidal anti-inflammatory drug (NSAID)**.
  - It is widely used in India for multiple purposes, including relieving [menstrual pains](#), **headaches, muscle and joint pain**, and is even prevalent among **children for high fever**.
- **Associated Side Effects:**
  - Prolonged use of drugs like **Meftal** may increase the risk of [stomach ulcers](#), **bleeding** and related complications.
  - Meftal has been associated with potential adverse effects on the [cardiovascular system](#).
  - Some experts have flagged **renal complications** as a potential side effect of **Meftal**.

### What is Indian Pharmacopoeia Commission (IPC)?

- IPC is an Autonomous Institution of the **Ministry of Health and Family Welfare**.
- IPC was created to set standards for drugs in India. Its basic function is to regularly update the **standards of drugs** commonly required for the **treatment of diseases** prevailing in this region.

- It publishes official documents for improving the **Quality of Medicines** by way of adding new and updating existing monographs in the form of **Indian Pharmacopoeia (IP)**.
    - It further promotes the **rational use of generic medicines** by publishing the National Formulary of India.
  - IPC also provides **IP Reference Substances (IPRS)** which act as a fingerprint for identification of an article under test and its purity as prescribed in IP.
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## Cough Syrup Samples Fail Export Quality Test

Recently, data from the [Central Drugs Standard Control Organisation \(CDSCO\)](#), shows that at least 6% of [cough syrup samples](#) from 54 Indian manufacturers failed a mandatory quality test for export.

- **Gambia, Uzbekistan, Cameroon**, and the [World Health Organization \(WHO\)](#) expressed concerns following the deaths of children who had taken these medications.
- **Indian manufactured syrups** were reported to be contaminated with [glycol](#) and **ethylene glycol** toxic substances that can sometimes be fatal, especially for children.
- India's pharmaceutical sector contributes around **1.72% of GDP** and the industry is worth approximately **USD 50 billion** with more than half coming from exports.
- The CDSCO under the **Ministry of Health & Family Welfare** is a national regulatory authority of India.

**Read More:** [India-made Syrups and Deaths in Gambia](#)

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## Demaorchestia alanensis

Researchers at Berhampur University, Odisha, have unveiled a new species of marine amphipod, named **Demaorchestia alanensis**, in Chilika Lake, contributing to **global marine biodiversity**.

- The discovery increases the global species count in the **Demaorchestia (Senticaudata, Talitridae) genus to six**, showcasing the region's marine diversity.
- The new species is characterized by its white colour, measuring less than 15 millimetres in length, with 13 pairs of legs serving various functions.
- It can be recognized from other similar species by having **two to three hair-like structures** on the front edge of the gnathopod's propodus(Limb).
- It belongs to the subfamily **Platorchestiinae** found along the Indian coast.
- Amphipods act as indicators for climate change impact and coastal ecosystem health.
- The family Talitridae was considered one of the **oldest groups of amphipods**, and it was believed to have been on the planet since the Jurassic age.





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## Chip-In-Ball Technology to Make Handball Decisions Easier

Recently, **Adidas** has introduced a [microchip](#) in the **official ball** for **Euro 2024** to aid referees in making handball decisions during the tournament.

- The microchip, which is **rechargeable**, can send **precise ball data** to video match officials in real-time, and will be used in conjunction with **limb-tracking technology** to help determine whether there has been a handball in the lead-up to a goal.
- The microchip installed in the 'Fussballliebe', the official match ball of the Euros, will work in tandem with **limb-tracking technology** to create [real-time 3D visual](#) representations of **players' skeletons**.
- According to the law set by the International Football Association Board (IFAB), it's a handball if a player "touches the ball with their hand/arm when it has made their body unnaturally bigger.
- The technology will also be used to produce faster **offside decisions**, and will contribute to the Union of European Football Associations (UEFA)'s [Video Assistant Refereeing \(VAR\)](#) decision-making process.
  - The VAR will use the data from the device to create an image that accurately establishes the **point of contact** of the ball with the body.
- The chip also **allows** the technology to determine the exact time the ball was kicked, which will provide an accurate result when it comes to offside decisions.

**Read More:** [Semi-Automated Offside Technology](#)

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## NTPC Wins Brandon Hall Group's Excellence in Technology Awards 2023

The [National Thermal Power Corporation \(NTPC\)](#), a [maharatna](#), central Public Sector Undertaking (PSU) under the **Ministry of Power**, has achieved a remarkable feat by becoming the sole PSU in India to win two silver awards at the prestigious **Brandon Hall Group's Excellence in Technology Awards 2023**.

- NTPC secured dual silver awards in the categories of "**Best Advance in Corporate Wellbeing Technology**" and "**Best Advance in Augmented and Virtual Reality.**"
  - NTPC's award-winning efforts include the creation of an **Individual-Centric Health Care Ecosystem**, and overcoming diversity and remoteness challenges at NTPC sites, and **NTPC's 'iGuru' initiative** demonstrates its leadership in adapting innovative technologies for workforce capacity building.
- Brandon Hall Group, a US-based professional development company, recognizes NTPC's achievements through its HCM Excellence Awards program, known as the "Academy Awards of Human Capital Management."
  - The awards recognize the best organizations that have successfully developed and deployed programs, strategies, modalities, processes, systems, and tools that have achieved measurable results.

**Read more:** [National Thermal Power Corporation\(NTPC\)](#)

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