

**ENVIRONMENT [GS-III]****Carbon Farming: Advantages, Challenges, and Initiatives**

Carbon farming can help in restoring ecosystem health while improving agricultural productivity and soil health, and mitigating climate change by enhancing carbon storage in agricultural landscapes and reducing greenhouse gas emissions.

**Carbon Farming**

It combines the concepts of carbon and farming by implementing regenerative agricultural practices. The practice is easy to adopt across various agro-climatic zones. It can help ameliorate soil degradation, water scarcity, and challenges related to climate variability.

- **Common Forms of Carbon Farming:** It includes rotational grazing, agroforestry, conservation agriculture, integrated nutrient management, agro-ecology, livestock management, and land restoration.
- **Optimal Conditions for Carbon Farming:** Regions with long growing seasons, sufficient rainfall, and substantial irrigation provide the best conditions to sequester carbon, through vegetation growth.
- In regions with adequate rainfall and fertile soil, the potential for carbon sequestration through practices like agroforestry (integrating trees and shrubs with crops) and conservation agriculture (minimising soil disturbance) may be particularly high.

**Advantages of Carbon Farming**

- **Diversification of Farm Income:** Agroforestry practices including silvopasture and alley cropping can diversify farm income by sequestering carbon in trees and shrubs.
- **Enhancement of Soil Health:** Conservation agriculture can help minimize soil disturbance and enhance organic content, particularly in places with other intense agricultural activities.
- Conservation agriculture techniques include zero tillage, crop rotation, cover cropping, and crop residue management (stubble retention and composting)

**Silvopasture:** It is the integration of trees and grazing livestock operations on the same land. These systems are intensively managed for both forest products and forage, providing both short- and long-term income sources.

**Alley cropping:** It is defined as the planting of rows of trees and/or shrubs to create alleys within which agricultural or horticultural crops are produced.

**Intercropping:** It is the practice of growing two or more crops in proximity.

**Organic Farming:** In this type of farming, organic manure and natural pesticides are used instead of chemicals. No genetic modification is done to increase the yield of the crop.

- **Promoting Soil Fertility:** Integrated nutrient management practices promote soil fertility and reduce emissions by using organic fertilizers and compost.
- **Ecosystem Resilience:** Agro-ecological approaches such as crop diversification and intercropping have benefits for ecosystem resilience.
- **Reducing Methane Emissions:** Livestock management strategies including rotational grazing, optimising feed quality, and managing animal waste can reduce methane emissions and increase the amount of carbon stored away in pasture lands.

**Challenges to Carbon Farming**

- **Limited water availability:** It can hinder the growth of plants, thus restricting the potential for sequestration through photosynthesis.
- For example, practices like cover cropping, which require additional vegetation between main crop cycles, may not be viable due to the added water demand.
- Carbon farming can be challenging in hot and dry areas where the availability of water is limited, and prioritized for drinking and washing needs.

**Carbon Sequestration:** It is a climate change mitigation technology where CO<sub>2</sub> is captured from power plants and other industrial processes instead of being emitted to the atmosphere.

The captured CO<sub>2</sub> is then stored in the subsurface with the goal of keeping it out of the atmosphere indefinitely.

- **Plant Selection for Carbon Sequestration:** Selecting which plants to grow also becomes crucial because not all species trap and store carbon in the same amounts or in an equally effective manner.
- **Financial Constraints:** The adoption of carbon farming practices may require financial assistance for farmers to overcome the costs of implementing them.
- In India, small-scale farmers may lack the resources to invest in sustainable land management practices and environmental services.

**Global Carbon Farming Schemes**

- **Chicago Climate Exchange and the Carbon Farming Initiative, Australia:** It demonstrates efforts to incentivise carbon mitigation activities in agriculture.

- The processes range from no-till farming (growing crops without disturbing the soil) to reforestation and pollution reduction.
- Kenya's Agricultural Carbon Project: It highlights the potential for carbon farming to address climate mitigation and adaptation and food security challenges in economically developing countries.
- 4 per 1000 initiative: It was launched during the COP21 climate talks in 2015 in Paris and aims at increasing soil organic carbon (SOC) sequestration through sustainable practices.

#### **Government Initiatives to Boost Carbon Farming**

- Green Credit Scheme: It aims to promote and support sustainable practices, including those in agriculture.
- National Mission on Natural Farming (NMNF): Three main objectives:
  - sustainably increasing agricultural productivity and incomes
  - adapting and building resilience to climate change
  - reducing greenhouse gas emissions wherever possible

#### **opportunities in India**

- Viability of Organic Farming: Grassroots initiatives and pioneering agrarian research in India are demonstrating the viability of organic farming to sequester carbon.
- In this regard, agro-ecological practices in India could yield significant economic benefits, with the potential to generate \$63 billion in value from approximately 170 million hectares of arable land.
- Suitability Across Geographic Regions: Regions with extensive agricultural land, such as the Indo-Gangetic plains and the Deccan Plateau, are well suited to adopt carbon farming whereas the mountainous terrain of the Himalayan region is less suited.
- Coastal areas are prone to salinisation and have limited access to resources, thus limiting the adoption of traditional farming practices.
- Enhancing Food Security: Carbon credit systems can incentivise farmers by providing additional income through environmental services.
- Agricultural soils can absorb 3-8 billion tonnes of CO<sub>2</sub>-equivalent every year over 20-30 years.
- This can bridge the gap between feasible emissions reductions and the indispensable stabilisation of the climate.
- Thus, carbon farming could also be a sustainable strategy to mitigate climate change and enhance food security in India.

Scaling the carbon farming would require concerted efforts to address challenges of limited awareness, inadequate policy support, technological barriers, and an enabling adoption environment. Promoting carbon farming is in India's interests to mitigate climate change while improving soil health, enhancing biodiversity, and creating economic opportunities for its adopters.

### **INDIAN SOCIETY – SECULARISM [GS-I]**

#### **The debate around a sunbeam ('surya tilak')**

The article discusses the debate around a sunbeam ('surya tilak') focused on the forehead of a Ram idol in the Ayodhya temple. Some scientists criticized the involvement of the Indian Institute of Astrophysics (IIA), arguing it mixes science with religion and challenges scientific principles. The debate around a sunbeam ('surya tilak')

- The debate began when a focused sunbeam ('surya tilak') was engineered to fall on the forehead of a Ram idol in Ayodhya.
- Abhay Karandikar of the Department of Science and Technology (DST) said the Indian Institute of Astrophysics (IIA) played a crucial role.
- Critics objected to the IIA's involvement, arguing that a college student could have designed the system, and said it mixed science and religion, undermining scientific thinking.

#### **How has India approached the science-religion relationship?**

- Accommodative Science: India has historically embraced both science and religion. The 1956 Calendar Reform Committee (led by Meghnad Saha) adjusted local calendars to a national standard while accommodating religious practices.
- DST Projects: The Department of Science and Technology (DST) funded SATYAM (Science and Technology of Yoga and Meditation) and research on cow products, blending traditional knowledge and scientific investigation.
- Temple Projects: The Central Building Research Institute (CBRI) and the Indian Institute of Astrophysics (IIA) helped in temple projects, like setting up the 'surya tilak', showing how scientific principles are incorporated into religious contexts

### **INDIAN POLITY AND GOVERNANCE GS[ PAPER II]**

#### **Religion Based Reservation: Muslim Quota Row**

Recently, In election season, India is debating fundamental constitutional questions around Religion based Reservation in particular questioning around Muslim Quota.

- Recently, the issue of the 5% reservation quota given to Muslims in Andhra Pradesh in 2004 has also resurfaced debate surrounding the religion based reservation.

### **Constitutionality On Religion based Reservation**

- Equality vs. Equity:** The Indian Constitution moves beyond mere equality to ensure equity, allowing for differential treatment or special measures for historically disadvantaged groups.
- Dynamic Concept of Equality :** The Supreme Court has held that equality is a dynamic concept with many aspects and dimensions, and it cannot be “cribbed, cabined and confined” within traditional and doctrinaire limits (E P Royappa vs State Of Tamil Nadu, 1973).

Formal equality :

It is concerned with equality of treatment, treating everyone the same, regardless of outcomes which can at times lead to serious inequalities for historically disadvantaged groups.

Substantive equality :

It is concerned with equality of outcomes.

Affirmative action promotes this idea of substantive equality.

- Article 16(4) and 15(4):** These articles empower the state to make provisions for reservation in favor of backward classes and socially and educationally backward classes, including Scheduled Castes and Scheduled Tribes.
- Article 15** specifically prohibits the state from discriminating against citizens on grounds only of both religion and caste (along with sex, race, and place of birth).
- Non-Discrimination Clause :** In The Supreme Court’s judgment in State of Kerala vs N M Thomas (1975), reservation is considered not an exception to the equality/ non-discrimination clauses of Articles 15(1) and 16(1), but as an extension of equality.
- The crucial word in Articles 15 and 16 is ‘only’ — which implies that if a religious, racial, or caste group constitutes a “weaker section” under Article 46, or constitutes a backward class, it would be entitled to special provisions for its advancement.

Some Muslim castes were given reservation not because they were Muslims, but because these castes were included within the backward class, and reservation was given without reducing the quota for SCs, STs, and OBCs by creating a sub-quota within the OBCs.

### **Religion Based Reservation in Some States**

- Kerala:** Muslims were included in the OBC category, forming a sub-quota within the overall OBC reservation.
- Muslim sub-quota Religion based reservation was first introduced in 1936 in Travancore-Cochin state.
- After the state of Kerala was formed in 1956, all Muslims were included in one of eight sub-quota categories, and a sub-quota of 10% (now 12%) was created within the OBC quota.
- Karnataka:** In 1995, implemented 4% Muslim reservation within the OBC quota.
- Thirty-six Muslim castes which are part of the central list of OBCs were included in the quota.
- Tamil Nadu:** Based on the law in 2007, Reservation provided within the 30% OBC quota, a subcategory of Muslims with 3.5% reservation.
- This did not include upper-caste Muslims.
- The Act gave reservation to some Christian castes, but this provision was subsequently removed on the demand of Christians themselves.
- Andhra Pradesh & Telangana :** The question of giving Muslims reservation along with 112 other communities/ castes was referred to the Andhra Pradesh Backward Classes Commission in 1994.
- In 2004, based on a report by the Commissioner of Minority Welfare on the social, economic, and educational backwardness of Muslims,
- The government provided 5% reservation, treating the entire community as backward.
- However, later The High Court struck down the quota on the technical ground that
- The mandatory consultation with the AP Commission for Backward Classes was not done.
- It also held that the minority welfare report was bad in law because it laid down no criteria for determining backwardness.
- The ruling faced a challenge in the Supreme Court, which in 2010 ordered it to maintain the existing state until the matter was fully heard and decided.
- In Telangana : .After the bifurcation of Andhra Pradesh in 2014, the TRS government in Telangana passed a law in 2017 proposing 12% reservation for OBC Muslims on the basis of the reports of the G Sudhir Commission and the Backward Classes Commission.

**Some other Supreme Court Ruling on Reservation Based on Religion**

In *M R Balaji vs State of Mysore* (1962), the court noted that

“Muslims or for that matter Christians and Sikhs etc., are not excluded for the purpose of conferring the benefits under Articles 15(4) or 16(4)”.

It is not unlikely that in some States some Muslims or Christians or Jains forming groups may be socially backward.

The Supreme Court in *Indra Sawhney* (1992) laid down that any social group, whatever its mark of identity, if found to be backward under the same criteria as others, will be entitled to be treated as a backward class.

In *T Muralidhar Rao vs State of AP*, 2004 case, the court held that “reservations for Muslims or sections/groups among them, in no manner militate against secularism, which is part of the basic structure of the constitution”

**Committee Recommendations and Executive Orders**

**Sachar and Misra Panels:**

The Justice Rajinder Sachar Committee (2006) found that the Muslim community as a whole was almost as backward as SCs and STs, and more backward than non-Muslim OBCs.

Suggested reservation for minorities, including Muslims.

The Justice Ranganath Misra Committee (2007) suggested 15% reservation for minorities, including 10% for Muslims.

The Mandal Commission, following the example set by several states, included a number of Muslim castes in the list of OBCs.

The UPA government in 2012 issued an executive order providing 4.5% reservation of minorities not just Muslims within the existing OBC quota of 27%. but faced legal challenges.

**Arguments in Favor of Religion Based Reservations in India**

- Promotes Equity: The concept of reservations aims at offering fair and equal opportunities to the marginalized sections of society.
- Implementing reservations based on religion could extend this principle to religious minorities who historically lag behind in education and financial stability.
- Constitutional Mandate: Article 15(1) of the Indian Constitution prohibits discrimination based on religion. The Supreme Court, in cases like *Nainsuleh Das vs. State of Uttar Pradesh*, has emphasized that this constitutional provision extends to all political and societal rights.
- Article 341 of the Constitution and the 1950 Presidential Order state that only Hindus are entitled to inclusion within SCs. However, Sikhs were included within SCs in 1956, and Buddhists in 1990. Muslims and Christians remain excluded. It could be argued that this too, is ‘religion-based’ reservation.
- Empowerment and Social Upliftment: Religion based reservations could potentially uplift religious minorities who face socio-economic disparities.
- Addresses Inequality: By recognizing the unique challenges faced by religious minorities, religion based reservations can address systemic inequalities. Such measures can help bridge the gap in educational and economic status among different religious communities.

**Arguments Against Religion Based Reservations in India**

- Threat to Social Harmony: Introducing reservations based on religion may lead to social unrest and division within society.
- Favoring one religion over others could breed distrust among different religious groups and undermine social cohesion.
- Undermine Secularism : Critics contend that offering reservations based on religion contradicts the secular principle enshrined in the Indian Constitution, which promotes equal treatment of all religions by the state.
- Granting reservations based on religion contradicts the foundational principles of the Indian Constitution, as advocated by Dr. B.R. Ambedkar.
- The Constitution emphasizes equality and prohibits discrimination based on religion, making religion based reservations unconstitutional.
- Risk of Conversion: Religion based reservations may inadvertently promote religious conversions as individuals seek to benefit from reservation policies.
- This could further exacerbate tensions between different religious communities and undermine secular values.

**Ignoring Socio-Economic Factors:** Reservations based on religion overlook the diverse socio-economic realities within religious communities.

Poverty and disadvantage exist across all religions, and granting reservations solely based on religious identity fails to address the nuanced needs of individuals from disadvantaged backgrounds.

While religion based reservations may have potential benefits in addressing socio-economic disparities among religious minorities, they also pose significant challenges to social harmony, constitutional values, and the holistic addressing of socio-economic inequalities.

**PRELIM FACT**

**1.Hopen Island**

A researcher has reported that the first instance of a walrus death due to bird flu on Hopen Island in the Svalbard archipelago.

About Hopen Island

Aspects	Description
About Hopen Island	Hopen Island is located in the southeastern part of the Svalbard archipelago (Norway). It is part of the Southeast Svalbard Nature Reserve.
Geography	The island is mostly covered by rocks and continuous permafrost, with a very narrow beach.
Wild life	1) The island is home to a significant number of polar bears, especially during winter when the island is surrounded by sea ice. 2) The sub-population of Ursus maritimus found here is genetically distinct and associated with the Barents Sea region. 3) The island is breeding ground for black-legged kittiwakes, thick-billed guillemots, and black guillemots.

**walrus**

Classification: They are Pinniped (fin-footed) mammal. They are related to seals and sea lions.

Appearance: They are characterized by large size and distinctive tusks; skin covered with a thin layer of coarse hairs.

Habitat: They are terrestrial and marine. They can swim in the ocean and walk on land and sea ice.

Diet: They are primarily mollusks and also consumes worms, snails, soft shell crabs, shrimp, and sea cucumbers.

Distribution: Arctic and sub-Arctic regions near the North Pole, including the Pacific, Atlantic, and Arctic Oceans.

Threats: Currently, the primarily threat is climate change. They were historically hunted commercially.

Conservation Status: IUCN Red List: Vulnerable

Role in Ecosystem: They are keystone species in Arctic marine ecosystems.

**2.Magnetic resonance imaging**

The Magnetic Resonance Imaging (MRI) market is projected to hit \$9.8 billion by 2028. This technology plays a pivotal role in medical science, offering diverse applications throughout the human body.

**1. About MRI:** It is a non-invasive medical imaging technique that provides detailed images of internal structure in the human body, including organs, Bones, Muscles. Blood vessels and Joints.

**2. How Does MRI Work?**

MRI leverages the magnetic properties of hydrogen atoms, which are abundant in the body's fat and water content. The procedure involves four main components:

- Superconducting Magnet that generates a strong magnetic field around the targeted body part.
- Radio frequency Pulses which excite hydrogen atoms, raising their energy level.
- Larmor Frequency is the specific frequency at which hydrogen atoms resonate and absorb radio waves, varying by magnetic field strength and tissue type.
- After the pulse, hydrogen atoms emit energy as they revert to their normal state, which is captured by a detector and converted into images by a computer.

**3. Significance of MRI:**

- It is used to obtain images of soft tissues within the body. It is widely used to image the brain, the cardiovascular system, the spinal cord and joints, various muscles, the liver, arteries, etc.
- MRI is particularly crucial for diagnosing and monitoring various cancers, such as prostate and rectal cancer, and is also essential for tracking neurological conditions including Alzheimer's disease, dementia, epilepsy, and stroke.
- Functional MRI is used to track changes in blood flow in the brain which helps to understand how neuronal activity shifts.

**3. Drip pricing**

Consumers often faces drip pricing while purchasing any commodities or services. Considering this, the Department of Consumer Affairs asked consumers to reach out to the ministry if they observe 'drip pricing'.

- About Drip pricing: It is a marketing strategy where initially only a portion of a products or service's total cost is shown. The full price is disclosed progressively as the customer moves through the purchase process.
- Strategy used: This strategy often involves concealing essential fees like taxes or booking fees, or excluding necessary add-ons such as internet access or amenities that are essential for the use of the product or service.

The price advertised in print, emails, or on websites, known as the “headline price,” may not accurately represent the total cost that the consumer will ultimately pay.

3. Why companies indulge in Drip Pricing- Businesses use drip pricing to attract customers by starting with a lower price, and hoping that they will continue with the purchase even after seeing additional costs later.

4. Impact on Consumer Behaviour: Drip pricing can make it difficult for consumers to compare prices effectively.

5. Sellers offering transparent prices at disadvantage- Drip pricing may put sellers who offer more transparent pricing at a disadvantage.

#### **4. Pradhan Mantri Jan Arogya Yojana (PMJAY)**

A study in Chhattisgarh revealed that despite the Pradhan Mantri Jan Arogya Yojana (PMJAY), out-of-pocket spending (OOPE) on health remains high, particularly in private hospitals, due to the widespread practice of dual billing

PMJAY Overview:

- Ministry: Ministry of Health and Family Welfare
- Genesis: Launched in 2018 as part of Ayushman Bharat scheme
- Benefit: Offers Rs. 5 lakhs/year/family for secondary and tertiary care in public and private hospitals, without restrictions on family size, age, or gender.
- Coverage: Includes pre and post-hospitalization expenses, covering all pre-existing medical conditions.

#### **Challenges with PMJAY Implementation:**

- High Out-of-Pocket Spending: Despite PMJAY, significant out-of-pocket expenditure persists, particularly in private hospitals.
- Dual Billing: Private hospitals engage in dual billing, charging patients and claiming reimbursement from the government, leading to fraudulent practices.
- Disparities in Cost: Medical expenditure in private hospitals is substantially higher compared to public hospitals, exacerbating financial burdens on patients.
- Catastrophic Health Expenditure: Utilization of private hospitals under PMJAY often results in catastrophic health expenditure for vulnerable groups.
- Poor Regulation: Lack of effective regulation allows private hospitals to overcharge patients, undermining the affordability goal of PMJAY.
- Limited Access for Vulnerable Groups: Vulnerable sections like scheduled tribes and women predominantly rely on public hospitals, limiting their access to private sector benefits promised by PMJAY.
- Capacity Deficit: Some states face capacity issues with a high number of people per empanelled healthcare provider.
- Delayed Claim Settlements: Despite clear guidelines, there are delays in settling claims.
- Validation Control Issues: Lack of essential validation controls in beneficiary registration, with instances of linking multiple beneficiaries to a single mobile number.
- Grievance Disposal: The delayed resolution of grievances, with only around 10% addressed within the 15-day turnaround time, as per the CAG report.
- Whistleblower Policy Non-Adoption: Several states, including Bihar, Chhattisgarh, and Rajasthan, have not adopted a whistleblower policy.

#### **5. Delhi High Court Orders Police Action Against Oxytocin Use**

The Delhi High Court ordered State authorities to take action against the use of oxytocin on cattle in dairy colonies in the Capital.

- Rampant use of Oxytocin: In March 2023, the High Court had constituted a court commissioner for inspecting nine dairy colonies in the Capital. The court commissioner flagged the “rampant use” of oxytocin.

Administering of oxytocin amounts to animal cruelty and is a cognisable offense under Section 12 of The Prevention of Cruelty to Animals Act, 1960.

- Weekly Inspections and Legal Action: The court asked the Delhi government’s Department of Drugs Control to conduct weekly inspections and register cases against the administration of the hormone.
- Source Tracing: It asked the Delhi police to identify the sources of oxytocin production, packaging and distribution, and take action in accordance with the law.

#### **Oxytocin**

- Also known as the ‘love hormone’, Oxytocin is secreted by the pituitary glands of mammals during sex, childbirth, lactation or social bonding. It could be chemically manufactured and sold by pharma companies for use during childbirth. It is administered either as an injection or a nasal solution.
- Role: Oxytocin plays a key role in both the female and male reproductive systems. This includes increasing contractions to induce labor and birth, and the release of milk from the breast after birth.

- It also acts as a chemical messenger in the brain and influences important elements of human behavior such as social recognition, relationship formation and long-term emotional attachment.
- Significance: Its use is crucial to prevent new mothers from excessively bleeding after giving birth—a common cause of maternal deaths.
- According to an India sample registration scheme survey conducted in 2001-2003, postpartum hemorrhage accounted for 38 percent of maternal deaths.
- Concerns Associated:
  - Misuse of oxytocin: It is being used illegally to increase milk production in dairy animals which are forced to produce milk through painful procedures and can become infertile with long-term use.
  - Health Impact: Its overuse on milch cattle to improve production harms not only the cattle's health but also the health of humans consuming the milk.
  - There are concerns that milk from oxytocin-treated animals may contain residues of the hormone that could potentially have negative health impacts on human consumers.

### ANSWER WRITING

**Q. What are the types and features of writs issued by the Supreme Court and the High Courts under Article 32 and Article 226 of the Constitution respectively? Give examples of each type of writ.**

A writ is a formal, legal document that orders a person or entity to perform or to cease performing a specific action or deed. The Constitution of India vests the Supreme Court and High Courts with the power to issue writs under Article 32 and Article 226 respectively, underscoring the judiciary's pivotal role in upholding individual rights.

Types of Writs issued by the Supreme Court and the High Courts under Article 32 and Article 226

- Habeas Corpus: A directive mandating the authority or person detaining another to produce the detainee before the court. Eg: ADM Jabalpur case (1976) during the Emergency era where the SC controversially ruled that the state could deprive a citizen of their right to life and liberty without being answerable.
- Mandamus ("We command"): Commands a public officer or authority to perform a duty they're legally obligated to execute. Eg: In the Vishakha case, the Supreme Court issued directives, leveraging the Mandamus writ, for instituting mechanisms to prevent sexual harassment at workplaces.
- Prohibition ("To forbid"): A writ ensuring lower courts don't exceed their jurisdiction. Eg: In the Rupa Ashok Hurra vs Ashok Hurra and Another (2002) case, the Supreme Court used this writ to clarify its own powers regarding the reconsideration of its judgments.
- Certiorari ("To be certified"): Enables higher courts to review, and if necessary, quash decisions of lower courts or Tribunals. Eg: In the Mumbai Kamgar Sabha vs M.R. Meher (1976) case, the SC exercised this writ to quash an industrial tribunal's decision that was found to be plagued by errors.
- Quo Warranto: It is employed to question the legitimacy of a person's appointment to a public office. Eg: In the University of Mysore vs C.D. Govinda Rao (1964) case, the SC upheld the writ of Quo Warranto, stressing that to be appointed to a specific post, the person must satisfy all the requisite conditions.

Features of Writs issued by the Supreme Court and the High Courts under Article 32 and Article 226

- Scope: Article 32 is dedicated to the enforcement of fundamental rights, while Article 226 embraces both fundamental and other legal rights. Eg: in the Shankari Prasad case (1951), Article 32 was invoked to question the validity of the First Amendment to the Constitution which introduced Articles 31A and 31B, which affected the right to property, a fundamental right at that time.
- Original Jurisdiction: Article 32 bestows original jurisdiction upon the Supreme Court. In the landmark Kesavananda Bharati vs State of Kerala (1973) case, the petitioner directly approached the Supreme Court under Article 32, emphasising its role as the guardian of fundamental rights.
- Flexibility: High Courts, under Article 226, have a wider ambit. In S. R. Bommai vs Union of India (1994), the Karnataka High Court demonstrated its flexibility by examining the President's proclamation under Article 356, which doesn't strictly pertain to fundamental rights.
- Power of Parliament: The Parliament can, under specific conditions, empower any court to issue writs but can't encroach upon the High Court's jurisdiction. This principle was reaffirmed in the L. Chandra Kumar vs Union of India (1997) case.
- Binding Nature: A decision from the Supreme Court is binding across all courts. As seen in the M.C. Mehta vs Union of India (1987) case, the guidelines set by the apex court were binding for all entities across India.
- Suspension: Article 359, during emergencies, lets the President suspend the enforcement of fundamental rights. This was invoked during the Emergency era (1975-1977), suspending citizens' right to approach the court under Article 32.
- Enforcement: Both the apex and High Courts ensure the proper execution of their writs. Mohd. Hanif Quareshi vs State of Bihar (1958) case saw the Supreme Court employing its powers to ensure the enforcement of its judgement, ensuring its pivotal role in upholding justice.

Writ jurisdiction symbolizes the judiciary's commitment to preserving the rule of law in India. The power to issue writs, granted to the Supreme Court and High Courts, ensures a robust mechanism to prevent violations of fundamental rights and reinforcing the Constitution's spirit.

**MCQs**

- Which one of the following statements best defines the term 'Carbon Farming'?
  - It involves the intentional planting of high-carbon crops for the purpose of releasing carbon dioxide into the atmosphere to increase plant growth.
  - It is a method of industrial carbon capture and storage to reduce atmospheric CO<sub>2</sub> levels.
  - It is the practice of using agricultural methods to increase carbon sequestration in the soil, thereby enhancing soil health and mitigating climate change.**
  - It is the intensive use of heavy machinery and equipment on farms to capture carbon emissions and redistribute them across the land to improve soil quality.
- Magnetic Resonance Imaging (MRI) is based on which one of the following principles?
  - The absorption of X-rays by different tissues in the body.
  - The reflection of high-frequency sound waves from tissues.
  - The alignment and realignment of nuclear spins in a magnetic field.**
  - The emission of gamma rays from decaying isotopes.
- Consider the following:
  - Carbon offsets
  - Command-and-Control Regulations
  - Deforestation-free certification schemes
  - Community-based Management
  - Payment for Ecosystem Services (PES)
  - Reducing Emissions from Deforestation and Forest Degradation (REDD)
 Which of the above are considered as market-based approaches to forest conservation?
  - 1, 2, 3, and 5 only
  - 1, 2, 4, 5 and 6 only
  - 2, 3, 4 and 5 only
  - 1, 3, 5 and 6 only**
- Consider the following statements with reference to the recently released World Press Freedom Index-2024:
  - Among the BRICS countries, China and Russia have greater press freedom, while Brazil and South Africa are ranked lower.
  - Among the South Asian countries, India is ranked lower than all other countries, except Bangladesh.
 Which of the statement(s) given above is/are correct?
  - 1 only
  - 2 only**
  - Both 1 and 2
  - Neither 1 nor 2
- Consider the following statements:
  - The Jandhan, Aadhaar & Mobile (JAM) framework aims to enhance national security and citizen identification.
  - The PM SVANidhi Yojana is a scheme launched by the government to extend collateral-free working capital loans to street vendors.
 Which of the statement(s) given above is/are correct?
  - 1 only
  - 2 only**
  - Both 1 and 2
  - Neither 1 nor 2
- Consider the following statements:
  - Air Quality Index (AQI) provides a color-coded system to indicate air quality health risks.
  - Air Quality Early Warning System (AQEWS) provides advanced warnings of potential air quality deterioration.
  - Commission for Air Quality Management (CAQM) was established under the Environment Protection Act, 1986.
  - The Graded Response Action Plan (GRAP) is aimed at providing financial assistance to industries for adopting cleaner technologies.
 How many of the statements given above are correct?
  - Only one
  - Only two**
  - Only three
  - All four
- Consider the following statements about Oxytocin:
  - The drug is used by dairy owners and farmers to boost milk production and make vegetables look bigger and fresher
  - It causes hormonal imbalances and shortens the lives of milch animals.
 Which of the above statements are correct?
  - 1 only
  - 2 only
  - Both 1 and 2**
  - Neither 1 nor 2
- Which one of the following is the context in which the term "Schizophrenia" is often mentioned in news?
  - Water Borne Disease
  - Sexually Transmitted Disease
  - Lung Disease
  - Serious Mental Illness**
- Consider the following statements regarding Global Biofuel Alliance:
  - It aims to set standards for biofuel and expand the size of formal biofuel markets.
  - USA and Australia are the main founding members of the Global Biofuel Alliance.
  - The permanent secretariat of the alliance is based at Sydney.
 How many of the above statements is/are correct?
  - Only one**
  - Only two
  - All three
  - None
- Consider the following statements regarding the State Legislative Council.
  - The constitution leaves the choice of having a Legislative Council to the Parliament.
  - A Council cannot have more than a third of the number of MLAs in the state, and not less than 40 members.
  - The states having Legislative Council are Andhra Pradesh, Bihar, Karnataka, Maharashtra, Telangana and Uttar Pradesh.
 How many of the above statements are correct?
  - Only one
  - Only two**
  - All three
  - None