

ForumIAS

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Mains Marathon

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HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

FORUMIAS

INDEX

Trace the evolution of India's startup ecosystem over the past decade. What are the key factors contributing to its growth, and how can these be leveraged further to make India a global leader in innovation? (15 marks).....	2
Discuss the implications of China's construction of a dam on the Yarlung Zangbo (Brahmaputra) river for India's water security and regional stability. Suggest measures India can adapt to safeguard its interests. (15 marks).....	3
Discuss the significance of ISRO's Space Docking Experiment (SpaDeX) for India's ambitions in interplanetary missions and long-duration spaceflights.	4
Examine the role of India-EU cooperation in fostering an alliance of democracies. Highlight the challenges and opportunities in this partnership.	5
Evaluate the impact of "greedy jobs" on gender equity and work-life balance. Suggest measures for creating sustainable work schedules in the Indian corporate sector.....	6
How does the quality of primary education influence the development of higher education and national leadership? Discuss with examples from India and other nations. (GS Paper II - Education).....	7
Evaluate the challenges posed by radicalism in India's neighborhood, with specific reference to recent developments in Bangladesh. How should India recalibrate its foreign policy to address these concerns? (GS Paper II - International Relations)	8
Examine the constitutional and legal challenges arising from the conflict between UGC regulations and State University Acts. How does this impact federalism in India?	9
Critically examine the potential of regenerative farming and climate-smart agriculture in achieving sustainable agricultural growth in India. What policy interventions are necessary?	10
Examine the significance of the U.S.-India Civil Nuclear Agreement in transforming bilateral relations between the two democracies. What are the major impediments to its full potential? (250 words)	11
Critically examine the implications of the U.S. withdrawal from the WHO under Trump's presidency. What are the potential consequences for global health governance? (250 words).....	12
Discuss the role of grandfathering provisions in India's DTAA's with Mauritius, Singapore, and Cyprus. How do these provisions ensure treaty-specific commitments are upheld while applying the PPT? (10 marks)	13
Examine the objectives behind the U.S.'s tiered framework for licensing and exporting Artificial Intelligence (AI) chips. How does it align with national security and foreign policy interests? (15 marks).....	14

Trace the evolution of India's startup ecosystem over the past decade. What are the key factors contributing to its growth, and how can these be leveraged further to make India a global leader in innovation? (15 marks)

Introduction: Contextual Introduction

Body: Key factors contributing to the growth of startups and strategies to make India a leader in startup

Conclusion: Way forward

India's startup ecosystem has transformed over the past decade, growing from just 400 recognized startups in 2015-16 to over 1,30,000 today. The number of investors has increased ninefold, funding has grown 15 times, and incubators have expanded sevenfold, establishing India as the world's third-largest hub for innovation and entrepreneurship.

Key milestones in this evolution include:

- **Digital Revolution:** India's robust digital public infrastructure, including Aadhaar, UPI, and Digital India initiatives, laid the groundwork for innovation and financial inclusion.
- **Government Initiatives:** Policies such as Startup India, Digital India, and the Fund of Funds for Startups (FFS) catalyzed growth, providing capital, reducing regulatory burdens, and opening up new sectors like space, geospatial technology, and drones.
- **Sectoral Diversification:** Startups have ventured into diverse domains, including fintech, agritech, edtech, healthtech, deep tech, and sustainable technologies.
- **Regional Expansion:** Nearly 50% of startups now originate from Tier II and Tier III cities, such as Indore, Jaipur, and Ahmedabad, unlocking regional talent.

Key Factors Contributing to Growth

- **Favorable Policies and Regulatory Environment:** Progressive reforms ensured minimal regulatory interference while fostering innovation. Recent measures, such as the National Quantum Mission, India AI Mission, and Semiconductor Mission, aim to consolidate India's leadership in cutting-edge technologies.
- **Private Sector Participation:** Private equity and venture capital investments increased significantly, peaking at \$77.07 billion in 2021, supporting over half of India's unicorns. Family offices and angel investors have also played a critical role in nurturing startups.
- **Educational and Research Institutions:** Institutions like IITs, IIMs, and IIITs have been instrumental in fostering innovation, providing skilled talent, and facilitating industry-academia collaborations.

Strategies to Leverage Growth for Global Leadership

- **Enhance R&D Investments:** Expand the current allocation of Rs. 1 lakh crore for R&D and create a specialized fund for deep-tech startups requiring patient capital.
- **Focus on Emerging Technologies:** Capitalize on opportunities in AI, big data, EVs, quantum computing, and space exploration. Encourage startups to develop solutions for global challenges like climate change, healthcare, and energy transition.
- **Strengthen Intellectual Property Ecosystem:** Encourage innovation by rewarding and protecting intellectual property. Bridge the \$14.3 billion gap in IPR royalties by fostering indigenous technological advancements.

Conclusion

With startups playing a pivotal role in achieving the vision of *Viksit Bharat* by 2047, they are poised to drive economic growth, generate employment, and cement India's position as a leader in global innovation.

Discuss the implications of China's construction of a dam on the Yarlung Zangbo (Brahmaputra) river for India's water security and regional stability. Suggest measures India can adopt to safeguard its interests. (15 marks)

Introduction: Contextual Introduction

Body: Implications of dam on water security & regional stability in India & measures to protect its interest.

Conclusion: Way forward

China's announcement of constructing a dam on the Yarlung Zangbo near the China-India border raises significant concerns for India's water security, regional stability, and sovereignty. This dam is part of China's larger expansionist strategy, underscoring its intent to consolidate control over transboundary resources and exert strategic leverage in South Asia.

Implications for India

- **Reduced Water Flow and Siltation:** The dam is expected to alter the downstream flow of water and sediment, adversely impacting agriculture, fisheries, and biodiversity in India's northeastern states and Bangladesh.
- **Flood Vulnerabilities:** Uncontrolled water release during monsoons or geopolitical tensions could trigger catastrophic floods, particularly in Arunachal Pradesh and Assam.
- **Dependence on Chinese Data:** India's reliance on hydrological data shared by China makes it vulnerable to misinformation or lack of transparency during critical periods.
- **Strategic Leverage:** Control over the river flow gives China a strategic tool to exert pressure on India during disputes, adding a new dimension to bilateral tensions.
- **Regional Tensions:** The dam threatens to destabilize South Asia by exacerbating transboundary disputes with countries like Bangladesh, Nepal, and Bhutan, all of whom share river systems with China.

Measures India Can Adopt to Safeguard Its Interests

- **Strengthen Bilateral Mechanisms:** Revitalize Sino-Indian dialogue on transboundary rivers under the Sino-Indian Expert-Level Mechanism to ensure transparency and mutual trust.
- **Leverage International Norms:** Advocate for adherence to international conventions like the UN Watercourses Convention and Helsinki Rules on equitable and reasonable utilization of transboundary rivers.
- **Foster Regional Cooperation:** Collaborate with Bangladesh, Bhutan, and Nepal to form a South Asian water-sharing mechanism akin to the Mekong River Commission.
- **Integrated Water Management:** Establish storage facilities and flood control infrastructure in the northeastern states to counter the risks posed by sudden water releases.
- **Satellite Surveillance:** Use satellite imagery and remote sensing technologies to monitor China's dam construction and assess its impacts on water flow and sedimentation.
- **Hydrological Research:** Conduct detailed impact assessments and develop simulation models to prepare for potential disruptions in river flow.
- **Promote Collective Action:** Lead initiatives for a South Asian Water Commission to address shared challenges, ensuring a united response to China's unilateral actions.
- **Diplomatic Coordination:** Engage with Bhutan, Nepal, and Bangladesh to create a unified front, emphasizing the shared risks of China's hydropower projects.

Conclusion

A unified South Asian approach will further bolster India's efforts to counterbalance China's growing influence and secure its long-term interests.

Discuss the significance of ISRO's Space Docking Experiment (SpaDeX) for India's ambitions in interplanetary missions and long-duration spaceflights.

Introduction: Contextual Introduction

Body: Significance of ISRO's Space Docking Experiment (SpaDeX) for India's Space Ambitions

Conclusion: Way forward

The Space Docking Experiment (SpaDeX), successfully demonstrated on January 16, 2025, is a major milestone for ISRO. It marks a crucial step in India's progression towards mastering advanced spaceflight technologies essential for long-duration missions and interplanetary exploration.

Significance of ISRO's Space Docking Experiment (SpaDeX) for India's Space Ambitions

- **Orbital Platforms and Resupply:** The docking mechanism enables in-space servicing, refueling, and module replacement, paving the way for more sustainable and cost-effective long-duration missions.
- **In-Orbit Assembly:** SpaDeX demonstrated the capability to launch smaller modules separately and assemble them in space, bypassing the payload limitations of launch vehicles. This technology is crucial for missions like Chandrayaan-4, where spacecraft need to carry heavy payloads such as lunar samples.
- **Mars and Beyond:** The perceived inevitability of long-duration spaceflights to Mars and other celestial bodies necessitate docking technology for mid-mission resupply and modular spacecraft assembly.
- **Data-Driven Innovation:** ISRO's iterative approach during SpaDeX—postponing docking attempts and collecting data—demonstrates a commitment to precision and risk mitigation, critical for interplanetary ventures.
- **Bharatiya Antariksh Station (BAS):** SpaDeX is integral to the development of BAS, expected to launch later this decade. The ability to dock and exchange power between satellites during SpaDeX lays the groundwork for assembling, maintaining, and operating a space station.
- **Encouraging Private Sector Innovation:** The C60 mission launched payloads developed by private enterprises, fostering an ecosystem of innovation and collaboration in space technology.
- **Resupply and Maintenance:** Docking technology makes orbital resupply platforms and satellite servicing feasible, reducing costs for future crewed missions or space mining operations.
- **Global Competitiveness:** By mastering docking, ISRO positions itself to participate in international projects, such as lunar and Martian missions, enhancing its competitiveness in the global space economy.
- **Symbolic Gateway:** SpaDeX serves as a symbolic gateway to advanced missions, reflecting India's readiness for complex challenges in space exploration.
- **ISRO's New Phase:** Under V. Narayanan's leadership, ISRO must ensure the integration of SpaDeX outcomes into a broader strategic vision, aligning its objectives with global trends and India's aspirations.
- **Dual Payload Testing:** Beyond docking, the SpaDeX mission also tested payloads such as orbital plant studies (e.g., cowpea seed germination), capturing the public imagination and expanding ISRO's research portfolio.

Conclusion

SpaDeX is a landmark achievement, signifying India's technological maturity in space exploration. It lays the foundation for interplanetary missions, long-duration spaceflights, and the development of a robust space station. However, ISRO must articulate a clear, long-term vision for utilizing these advancements to ensure India's space program remains focused and globally relevant.

Examine the role of India-EU cooperation in fostering an alliance of democracies. Highlight the challenges and opportunities in this partnership.

Introduction: Contextual Introduction

Body: Role of India-EU cooperation in fostering an alliance of democracies.

Conclusion: Way forward

India and the European Union (EU) share common democratic values and face similar geopolitical challenges in a rapidly changing global landscape.

India-EU Cooperation: Foundations of an Alliance of Democracies

- **Shared Democratic Ideals:** Both India and the EU value democracy, the rule of law, and human rights, providing a solid foundation for cooperation. India's democratic setup and Europe's diverse democratic nations can form a powerful bloc advocating for democratic norms in international forums.
- **Technological Collaboration:** Emerging technologies such as quantum computing, biotechnology, and artificial intelligence are key areas where India and the EU can collaborate. Both are positioned as global innovation hubs and by joining forces, they can outpace China in these critical fields, ensuring that democracies lead the global technological race.
- **Strategic and Geopolitical Interests:** The partnership between India and the EU holds immense geopolitical significance, especially in the context of the Indo-Pacific region, where both seek to maintain a free and open maritime environment. This is particularly important in countering the influence of China in the region.

Challenges in the Partnership

- **Trade Negotiation Hurdles:** The long-stalled EU-India FTA has faced multiple obstacles, primarily related to market access, intellectual property rights, and regulatory challenges. Despite the strategic importance of a free trade agreement, these trade barriers remain a hurdle to achieving deeper economic cooperation.
- **Internal Democratic Challenges:** In India, concerns about minority rights and the freedom of expression often make it a target of criticism from European policymakers. Similarly, Europe grapples with rising populism, which threatens the liberal democratic fabric of the region.
- **Geopolitical Tensions:** One significant challenge lies in India's historic ties with Russia, particularly in defense and energy sectors, which has caused frustration in Europe. India's reluctance to sever ties with Russia in the wake of the Ukraine invasion adds complexity to the relationship.

Opportunities in the Partnership

- **Strategic Cooperation in Defence and Security:** With growing tensions in the Indo-Pacific and Europe's security concerns in the east, a robust defence and security collaboration between India and the EU can help bolster global peace and stability.
- **Technological and Innovation Leadership:** India and the EU are at the forefront of technological innovation, and by deepening their collaboration in areas like cybersecurity, space exploration, and green technology, they can set global standards and lead the race for technological supremacy in a world increasingly dominated by competition from authoritarian regimes.

Conclusion

India-EU cooperation has immense potential in fostering an alliance of democracies that can collectively lead the charge for democratic values, economic growth, and technological innovation in the face of global authoritarian challenges.

Evaluate the impact of “greedy jobs” on gender equity and work-life balance. Suggest measures for creating sustainable work schedules in the Indian corporate sector.

Introduction: Contextual Introduction

Body: Impact of “greedy jobs” on gender equity and work-life balance & measures to deal with this.

Conclusion: Way forward

"Greedy jobs" refer to roles that demand disproportionately high levels of time, energy, and commitment, often rewarding employees based on long working hours rather than productivity or outcomes.

Impact of “Greedy Jobs” on Gender Equity and Work-Life Balance

- **Stunted Career Progression:** With women primarily handling domestic responsibilities, they are unable to commit to the long hours, late-night meetings, and travel demanded by greedy jobs. This results in fewer women occupying leadership roles, deepening workplace inequalities.
- **Economic Inequities:** Despite increases in female labor force participation, only 4 women for every 10 men are in the workforce. This is linked to the unpaid domestic workload women disproportionately shoulder, creating systemic barriers to their economic independence.
- **Exhaustion and Burnout:** Long hours leave employees, both men and women, with insufficient time for recuperation, leading to physical and mental health issues. This is unsustainable in the long term for individuals and organizations.
- **Disruption of Family Life:** Greedy jobs reduce family interactions and participation in caregiving, disproportionately burdening women. Men’s limited contribution to domestic chores exacerbates this imbalance.

Measures for Sustainable Work Schedules in the Indian Corporate Sector

- **Shift from Hours to Outcomes:** Introduce outcomes-based performance metrics that focus on results rather than time spent at the office, reducing the glorification of long working hours.
- **Gender-Responsive Policies:** Provide equal access to parental leave for men and women to encourage shared caregiving responsibilities. Promote part-time or flexible work arrangements without penalizing employees in terms of career growth or compensation.
- **Right to Disconnect:** Enforce policies that respect employees’ right to disconnect from work after office hours, fostering better work-life balance.
- **Capping Work Hours:** Impose strict limits on weekly work hours (e.g., 48-hour cap) to ensure employees have sufficient time for rest and personal commitments.
- **Transparent Compensation Practices:** Reduce disparities in remuneration by linking managerial rewards to organizational productivity and fairness, ensuring equitable pay for all employees.
- **Encourage Work-Life Integration:** Support on-site childcare facilities and caregiving services to alleviate domestic burdens. Foster a workplace culture that values well-being and prioritizes family-friendly practices.
- **Awareness and Sensitization Campaigns:** Conduct regular training to challenge stereotypes that associate caregiving solely with women and promote shared domestic responsibilities among employees.
- **Policy Advocacy:** Advocate for government policies that incentivize companies to adopt family-friendly and gender-equitable practices, such as tax benefits and certifications.

Conclusion

A balanced society is key to unlocking the full potential of all workers and ensuring long-term prosperity.

How does the quality of primary education influence the development of higher education and national leadership? Discuss with examples from India and other nations. (GS Paper II – Education)

Introduction: Contextual Introduction

Body: What is the role of Primary Education in Shaping Higher Education and Leadership?

Conclusion: Way forward

The quality of education at the primary level profoundly influences the development of higher education institutions and national leadership. While the expansion of education in post-independence India has been remarkable, it has also led to challenges, including the dilution of educational standards.

Role of Primary Education in Shaping Higher Education and Leadership

- **Cultural and Moral Foundations:** Primary education is crucial in shaping not just intellectual abilities, but also the moral and cultural values that influence leadership qualities. In Japan, primary schools instill a culture of respect, punctuality, and hard work, which carry over into professional and academic environments. Such cultural values contribute to the creation of competent leaders at every level of society, including in universities.
 - **India's Contrast:** In India, where such cultural values are often neglected at the primary education level, inefficiencies in the system result in a lack of strong leadership at the higher education level. The routine delay in classes, lack of discipline, and general inefficiency in some parts of the education system detract from the development of leaders who can contribute to national progress.
- **Institution Building Through Leadership:** As history has shown, great institutions are often the product of visionary leaders who set the direction and quality standards for their respective fields. Leaders like Madan Mohan Malaviya, Syed Ahmed Khan, and Vikram Sarabhai created institutions that became beacons of excellence. These individuals were products of their educational environments, which had strong foundations in primary education, and they, in turn, contributed to the development of higher education institutions and national progress.
 - **India's Example:** India's renowned institutions, such as BHU, AMU, and ISRO, owe much of their success to visionary leadership. However, creating such leaders requires attention to the quality of primary education, which can lay the foundation for future innovation and progress.
- **Preparing Leaders at Every Stage:** To create effective leaders in academic institutions, the focus must be on leadership development at all educational stages. This includes training teachers who can nurture leadership qualities in students, starting from the primary level. While the UGC focuses on leadership in universities, a broader national concern is required to cultivate leadership throughout the education system.
 - **Global Example:** In countries like Singapore and Finland, leadership development is integrated into the education system from an early age, ensuring that the values of responsibility, integrity, and discipline are instilled in students, preparing them for leadership roles in higher education and beyond.

Conclusion

For India to foster world-class universities and effective national leadership, it must focus on improving the quality of primary education and ensuring that leadership development is nurtured at every stage of the education system.

Evaluate the challenges posed by radicalism in India's neighborhood, with specific reference to recent developments in Bangladesh. How should India recalibrate its foreign policy to address these concerns? (GS Paper II – International Relations)

Introduction: Contextual Introduction

Body: Challenges Posed by Radicalism in India's Neighborhood & how India can address these concerns.

Conclusion: Way forward

Radicalism, particularly of the religious extremist variety, poses significant challenges to regional stability and national security in India's neighborhood.

Challenges Posed by Radicalism in India's Neighborhood

- **Security Threats from Radical Groups:** Bangladesh, traditionally a moderate Muslim-majority nation, has recently seen a resurgence of radical Islamic groups such as Jamaat-e-Islami, Ansarullah Bangla Team (ABT), and Hefazat-e-Islam. These groups have links to global terrorist organizations like Al-Qaeda and ISIS.
- **Political Instability and Extremist Gains:** The political instability in Bangladesh, following the 2024 military coup and the suppression of democratic forces, has created a fertile ground for extremist elements to gain influence.
- **Sectarian Violence and Minorities:** Radical Islamic groups in Bangladesh have increasingly resorted to sectarian violence, targeting Hindu, Christian, and other minority communities. The rise in religious hate and violence in Bangladesh could spill over into India, particularly in border states such as West Bengal and Assam, leading to increased communal tensions.
- **Impact on Bilateral Relations:** India has a strategic interest in maintaining strong ties with Bangladesh, especially concerning issues such as water-sharing, border security, and counterterrorism. The resurgence of radical forces threatens to undo these gains and create new points of friction.

Recalibration of India's Foreign Policy to Address the Challenges

- **Diplomatic Engagement and Support for Democracy:** India should continue to engage diplomatically with Bangladesh, even under the current military-led government. However, India should prioritize the restoration of democratic governance in Bangladesh.
- **Strengthening Security Cooperation:** Given the growing threat of extremism, India should deepen security cooperation with Bangladesh. This could involve sharing intelligence on radical groups, enhancing border security, and assisting Bangladesh in counterterrorism efforts.
- **Promoting Counter-Radicalization Initiatives:** India should support counter-radicalization programs in Bangladesh, especially among the youth. These programs could be based on religious tolerance, promoting inclusive narratives, and discouraging the adoption of violent ideologies.
- **Economic and Humanitarian Support:** India should continue to provide economic and humanitarian support to Bangladesh, particularly in areas such as infrastructure development, healthcare, and education.
- **Multilateral Diplomacy and Regional Stability:** India should leverage regional and international platforms, such as the United Nations, SAARC, and BIMSTEC, to promote regional stability and counter the rise of radicalism in South Asia.
- **Preventing Religious Polarization:** India should avoid falling into the trap of religious polarization while addressing the issue of radicalism.

Conclusion

By engaging diplomatically, strengthening security cooperation, promoting counter-radicalization efforts, and ensuring economic stability in Bangladesh, India can help steer its eastern neighbor away from extremism. India's policy must remain flexible and adaptable, ensuring that it protects its strategic interests while contributing to peace and stability in the region.

Examine the constitutional and legal challenges arising from the conflict between UGC regulations and State University Acts. How does this impact federalism in India?

Introduction: Contextual Introduction

Body: Constitutional & Legal Challenges from the conflict between UGC regulations & the State University Act

Conclusion: Way forward

The conflict between UGC regulations and State University Acts in India presents significant constitutional and legal challenges, particularly in the areas of federalism, the scope of delegated legislation, and the separation of powers.

Constitutional and Legal Challenges

- **Legal Framework:** UGC operates under the UGC Act, 1956, and frames regulations under Section 26, which grants it the authority to lay down norms for the governance of universities, including the appointment of Vice-Chancellors (VCs). State University Acts are plenary laws and typically confer substantial autonomy to states in matters related to education, including the selection of VCs and the composition of university search committees.
- **Doctrine of Parliamentary Supremacy vs. State Autonomy:** UGC regulations, being made under the provisions of a Union law, have an overarching authority, and institutions are required to adhere to them. State University Acts provide a framework for managing state universities based on local needs, cultures, and priorities.
- **Legal Ambiguity Regarding Compliance:** While UGC regulations are intended to standardize higher education across India, their enforcement often encounters legal ambiguity. States may argue that they have exclusive jurisdiction over their universities, and central intervention through UGC regulations is an overreach.

Impact on Federalism in India

- **Centralization vs. Decentralization:** The conflict between the UGC and State University Acts reflects the tension between the centralizing tendencies of the Union government and the decentralized nature of India's federal structure. While the UGC's role in setting standards for higher education is necessary to maintain uniformity and quality across the country, it often leads to perceptions of central overreach.
- **Threat to State Autonomy:** The Constitution of India guarantees autonomy to states in the formulation and execution of their policies, as long as they do not violate the constitutional framework. However, when UGC regulations override state-specific policies, particularly regarding academic standards, faculty recruitment, or fee structure, it diminishes the autonomy of states in running their educational institutions.
- **Unequal Application of Policies:** The conflict also impacts the uniformity of higher education policies across India. States with robust and autonomous university systems may resist uniform regulations that they perceive to be unsuitable for their educational and social contexts. On the other hand, states with less developed higher education systems may benefit from the standardization brought about by UGC norms. The differential impact of these policies on different states can lead to unequal access to quality education, further exacerbating regional disparities and undermining the federal balance.
- **Judicial Intervention:** The courts often step in to adjudicate on such conflicts, interpreting the Constitution and resolving the disputes between UGC regulations and State University Acts. While judicial intervention is essential in maintaining constitutional supremacy, it can sometimes be seen as a dilution of the federal principle, as the courts have to strike a balance between Union legislation and state autonomy.

Conclusion

A definitive ruling by the Supreme Court is crucial in upholding the federal balance and ensuring clarity in the relationship between central and state educational authorities.

Critically examine the potential of regenerative farming and climate-smart agriculture in achieving sustainable agricultural growth in India. What policy interventions are necessary?

Introduction: Contextual Introduction

Body: Potential of Regenerative Farming and Climate-Smart Agriculture & Policy Interventions Needed

Conclusion: Way forward

Indian agriculture stands at a crossroads, requiring innovative solutions to ensure food security, improve rural livelihoods, and achieve environmental sustainability by 2047.

Potential of Regenerative Farming and Climate-Smart Agriculture(CSA)

- **Enhancing Soil Health:** Regenerative practices like no-till farming, crop rotation, and cover cropping improve soil fertility, enhance microbial diversity, and increase carbon sequestration. This approach addresses soil degradation, a major issue affecting 30% of India's arable land.
- **Water Conservation:** Techniques such as mulching, agroforestry, and precision irrigation reduce water usage, crucial in water-scarce regions. CSA promotes efficient irrigation systems like drip irrigation, which aligns with the PM Krishi Sinchayee Yojana.
- **Mitigating Climate Change:** Both approaches aim to reduce greenhouse gas (GHG) emissions through reduced chemical inputs, integrated pest management, and improved livestock management. Carbon sequestration in soil through regenerative farming can help India meet its Nationally Determined Contributions (NDCs) under the Paris Agreement.
- **Improving Farmers' Income:** By reducing input costs (chemical fertilizers and pesticides) and enhancing yields, these methods support farmers' financial stability. The emphasis on organic certification and sustainable supply chains creates opportunities for premium pricing in domestic and global markets.

Policy Interventions for Scaling Sustainable Agriculture

- **Strengthening Extension Services:** Launch awareness campaigns and provide training on regenerative and CSA practices through Krishi Vigyan Kendras (KVKs) and farmer-producer organizations (FPOs). Promote the integration of traditional ecological knowledge with modern scientific methods.
- **Realigning Subsidies:** Shift subsidies from chemical fertilizers to bio-fertilizers, compost, and organic inputs. Provide financial support for transitioning farmers through targeted schemes.
- **Promoting Research and Development:** Invest in research to develop region-specific solutions for regenerative farming and CSA. Collaborate with global institutions to bring innovative technologies to Indian farms.
- **Market Linkages and Certification:** Establish robust certification systems for regenerative produce and ensure market access through e-NAM and other platforms. Facilitate public-private partnerships to integrate sustainable agriculture into value chains.
- **Climate Resilience Funding:** Expand the ambit of schemes like the National Mission for Sustainable Agriculture (NMSA) to include direct funding for regenerative farming practices. Create insurance products that address the risks of transitioning to CSA.

Conclusion

Achieving a *viksit agri economy by 2047* requires investments in technology, robust policy frameworks, and grassroots participation to ensure inclusivity. By embracing these imperatives, Indian agriculture can

transition into a sustainable, globally competitive sector that supports rural livelihoods and secures food for future generations.

Examine the significance of the U.S.-India Civil Nuclear Agreement in transforming bilateral relations between the two democracies. What are the major impediments to its full potential? (250 words)

Introduction: Contextual Introduction

Body: Significance of Civil Nuclear Agreement & major impediments to its full potential.

Conclusion: Way forward

The U.S.-India Civil Nuclear Agreement of 2008 marked a significant turning point in bilateral relations, transforming them from a relationship largely built on strategic interests to one with a strong foundation of cooperation in civilian nuclear energy.

Significance of the U.S.-India Civil Nuclear Agreement

- **Game-Changing Strategic Partnership:** The 2008 U.S.-India Civil Nuclear Agreement marked a fundamental shift in the bilateral relationship, fostering trust in sensitive areas such as nuclear technology and defense. It ended India's nuclear isolation, granting it access to international nuclear markets despite not being a signatory to the NPT.
- **Enhanced Defense and Strategic Cooperation:** The deal created a foundation for deeper military ties, including defense purchases, technology transfer, and intelligence sharing. It allowed for closer collaboration in crisis management & advanced technology exchanges, especially in the Indo-Pacific.
- **Energy Security and Environmental Benefits:** The agreement envisioned transforming India's energy sector by enabling the construction of advanced nuclear reactors. It promised clean, sustainable energy to reduce dependency on fossil fuels, aligning with India's climate goals.
- **Economic and Geopolitical Implications:** By opening India's civil nuclear sector to U.S. companies like Westinghouse and GE, it aimed to create economic opportunities and jobs in both countries. It also positioned the U.S. and India as strategic allies counterbalancing China in the region.

Major Impediments to Its Full Potential

- **Liability Concerns:** India's 2010 Civil Liability for Nuclear Damage Act imposes liability on suppliers, contrary to international norms where operators bear responsibility. U.S. companies, unlike Russian state-backed enterprises, have been unwilling to accept these risks despite the insurance mechanisms proposed by India.
- **Technological and Cost Challenges:** Rapid advancements in nuclear technology demand that U.S. companies offer cutting-edge, cost-effective solutions to stay competitive. High implementation costs and concerns about cost overruns discourage investment, particularly as Indian officials aim to protect consumers from rising electricity tariffs.
- **Regulatory and Political Barriers:** Complex regulatory frameworks in India and the U.S., coupled with export control concerns, hinder seamless collaboration. Security concerns about technology diversion to "unfriendly actors" have historically affected U.S. policy decisions.
- **Public and Environmental Opposition:** Safety concerns, fueled by incidents like the Fukushima disaster, have led to public resistance and delays in nuclear project approvals.
- **Insufficient Domestic Capability:** India's nuclear manufacturing and infrastructure limitations hinder the execution of large-scale projects, impacting the pace of sectoral growth.

Conclusion

The U.S.-India Civil Nuclear Agreement was pivotal in transforming bilateral relations, fostering strategic and defense cooperation, and unlocking energy and economic opportunities. Addressing these impediments through policy, innovation, and sustained diplomatic efforts is essential to realize the immense benefits of this historic partnership.

Critically examine the implications of the U.S. withdrawal from the WHO under Trump's presidency. What are the potential consequences for global health governance? (250 words)

Introduction: Contextual Introduction

Body: Implications of the U.S. withdrawal from the WHO & consequences for global health governance

Conclusion: Way forward

The decision by U.S. President Donald Trump to withdraw from the World Health Organization (WHO) in 2020 cited reasons including alleged mishandling of the COVID-19 pandemic, lack of independence from political influences, failure to implement reforms, and "unfairly onerous" financial demands on the United States.

Implications of U.S. Withdrawal

- **Financial Strain on WHO:** The U.S. was the largest contributor to WHO's budget, providing 22.5% of assessed contributions and 13% of voluntary contributions in 2023. The sudden cessation of funds created a significant resource gap, threatening key health programs, particularly in low- and middle-income countries (LMICs).
- **Loss of Expertise and Leadership:** The U.S. played a pivotal role in WHO committees, contributing scientific expertise through institutions like the Centers for Disease Control and Prevention (CDC). The withdrawal disrupted collaborations essential for international surveillance and pandemic preparedness.
- **Impact on Global Health Security:** The U.S. decision to withdraw from negotiations on the WHO-led pandemic treaty undermined efforts to build a unified global framework for pandemic preparedness, equitable vaccine distribution, and response coordination.
- **Erosion of Multilateralism and Trust:** The withdrawal weakened multilateralism by prioritizing national interests over global solidarity. Other nations may follow suit, eroding trust in international institutions like the WHO.

Consequences for Global Health Governance

- **Shift in Power Dynamics:** The U.S. exit created opportunities for China and the global south to fill the void. While China increased its funding and influence, countries like India emerged as voices for LMICs, advocating for equitable health policies.
- **Challenges to Health Equity:** WHO's reduced capacity to support immunization programs and disease eradication efforts disproportionately impacted vulnerable populations in LMICs.
- **Fragmentation of Pandemic Response:** The severance of U.S.-WHO collaborations disrupted global pandemic surveillance networks and delayed the sharing of critical research and innovations.
- **Implications for India and the Global South:** India and other nations in the Global South have an opportunity to assert greater influence in reshaping global health governance. India's leadership in holistic health initiatives and vaccine diplomacy positions it as a key player. However, resource limitations and competing priorities, such as regional conflicts, challenge their ability to fill the leadership void left by the U.S.

Conclusion

The U.S. withdrawal from the WHO under Trump's presidency marked a critical juncture in global health governance, highlighting the vulnerabilities of multilateral institutions to political influences. To address these challenges, nations like India and other members of the global south must step up, fostering a cooperative and equitable framework to ensure health security and resilience worldwide. Reinstating U.S. participation remains crucial for restoring trust and stability in global health governance.

Discuss the role of grandfathering provisions in India's DTAA with Mauritius, Singapore, and Cyprus. How do these provisions ensure treaty-specific commitments are upheld while applying the PPT? (10 marks)

Introduction: Contextual Introduction

Body: Role of grandfathering provisions in India's DTAA and how PPT interacts with grandfathering.

Conclusion: Way forward

India's amendments to its Double Taxation Avoidance Agreements (DTAAs) with Mauritius, Singapore, and Cyprus were pivotal in addressing treaty abuse and ensuring fair taxation. These amendments included the introduction of source-based taxation of capital gains while incorporating grandfathering provisions to protect investments made before specific dates. The PPT is a general anti-avoidance rule (GAAR) introduced under BEPS Action Plan 6 to combat treaty abuse. It denies treaty benefits if obtaining such benefits was the principal purpose of a transaction or arrangement.

Key Aspects of Grandfathering Provisions

- **Scope of Grandfathering:**
 - Mauritius and Singapore: Investments in shares made before April 1, 2017, continue to enjoy tax exemption on capital gains under the original treaty provisions.
 - Cyprus: Similar protection is extended to investments made before April 1, 2017, as per its amended DTAA.
- **Purpose and Significance:**
 - Protects legitimate expectations of investors by preventing retroactive taxation.
 - Reflects India's commitment to bilateral treaty obligations, thus fostering investor confidence.
 - Balances India's anti-avoidance objectives with its need to remain an attractive investment destination.
- **CBDT Guidance Note on Grandfathering Provisions:**
 - Reaffirms that treaty-specific grandfathering commitments take precedence over PPT provisions.
 - Ensures these provisions are not influenced by the PPT, preserving the sanctity of bilateral commitments.

Interaction of PPT with Grandfathering Provisions

- **Carving Out Grandfathering from PPT:** The CBDT guidance explicitly clarifies that investments protected under grandfathering provisions are excluded from PPT scrutiny. This ensures that treaty-specific commitments remain insulated from broader anti-abuse measures, maintaining clarity for pre-existing investments.
- **Prospective Application:** PPT provisions will apply only to investments or transactions made after the enforcement of the new protocol. This avoids retrospective application, reinforcing legal certainty.
- **Alignment with BEPS and UN Model Tax Convention:** Tax authorities are guided to refer to BEPS Action Plan 6 and the UN Model Tax Convention for consistency in applying the PPT, ensuring international best practices are followed.

Conclusion

Grandfathering provisions in India's DTAA's with Mauritius, Singapore, and Cyprus exemplify the balance between adhering to treaty-specific bilateral commitments and implementing anti-abuse measures like the PPT. By carving out pre-committed investments from the PPT's purview, India reassures investors of its respect for treaty obligations while focusing the PPT on curbing future treaty abuse. This nuanced approach preserves investor confidence, aligns with global tax principles, and bolsters India's reputation as a stable investment destination.

Examine the objectives behind the U.S.'s tiered framework for licensing and exporting Artificial Intelligence (AI) chips. How does it align with national security and foreign policy interests? (15 marks)

Introduction: Contextual Introduction

Body: Objectives behind the U.S.'s tiered framework for licensing and exporting Artificial Intelligence (AI) chips & how it aligns with national security and foreign policy interests

Conclusion: Way forward

The new regulations introduced by the U.S. Bureau of Industry and Security (BIS) establish a tiered framework for licensing and exporting AI chips, primarily aimed at advancing national security and foreign policy objectives. By categorizing countries into three tiers, the framework delineates export controls based on the strategic trustworthiness of the importing nations.

Objectives Behind the Framework

- **Preventing Misuse of AI Technology:** The framework seeks to prevent advanced computing chips and AI model weights from being misused by adversaries or in activities such as mass surveillance, weapons development, and cyber warfare. China, Russia, and other "countries of concern" are restricted from accessing these technologies to avoid enabling their military advancements.
- **Protecting National Security Interests:** By limiting exports to high-risk nations, the U.S. ensures that advanced AI systems and large-scale integrated circuits (ICs) critical for military decision-making and logistics are not diverted to unfriendly regimes.
- **Safeguarding U.S. Technological Leadership:** The regulations aim to preserve the U.S.'s competitive edge in the AI and semiconductor industries by ensuring that critical technologies remain within trusted ecosystems.
- **Ethical Considerations:** The BIS emphasizes preventing human rights violations, particularly mass surveillance, by controlling access to AI chips that could enable oppressive regimes.

Alignment with National Security and Foreign Policy Interests

- **Countering Military Threats:** The framework prevents advanced AI chips from being used in adversarial military systems, including hypersonic weapons, autonomous drones, and cyber warfare infrastructure. By regulating exports, the U.S. ensures that critical technologies do not inadvertently bolster the capabilities of strategic rivals.
- **Promoting a Rules-Based Order:** The tiered licensing system reinforces a global order based on rules and norms, discouraging the proliferation of technologies that could destabilize regions or threaten U.S. interests.
- **Safeguarding Supply Chain Integrity:** Export controls mitigate the risk of advanced technologies being diverted through third-party actors to unauthorized users, preserving the integrity of global semiconductor supply chains.
- **Projecting Soft Power:** By enabling allied nations to access U.S. technologies under the framework, the U.S. strengthens its diplomatic ties and ensures its leadership role in global technology governance.
- **Minimizing Ethical Concerns:** The framework supports U.S. commitments to ethical technology use by preventing the misuse of AI chips in authoritarian regimes' domestic surveillance or human rights abuses.

Conclusion

For India, the immediate impact remains limited, but the classification signals a need for stronger partnerships and robust regulatory measures to gain greater trust in global technology ecosystems.

