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## **1. India Launches 'Global South Quantum Alliance' at BRICS Science Summit** **Source: Indian Express**

**Context:** On the sidelines of the BRICS Science, Technology & Innovation Ministerial Meeting in Kazan, Russia, India announced the launch of the 'Global South Quantum Alliance' (GSQA). This initiative aims to create a collaborative platform for developing countries to accelerate research, development, and capacity-building in the field of quantum technologies. Brazil and South Africa are the first founding partners, with India committing an initial \$20 million to the GSQA fund.



### **Significance:**

- The GSQA is a strategic move by India to position itself as a leader of the Global South in an emerging and critical technology domain.
- While the US, China, and Europe are investing billions in quantum technology, most developing nations are left out.
- This alliance aims to bridge that "quantum divide" by facilitating joint research projects, sharing computational resources, and developing common ethical guidelines and standards.
- It reinforces India's foreign policy goal of acting as a "Vishwa Mitra" (friend to the world).

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**Analysis:**

- The initiative is ambitious and timely. Quantum computing, communication, and sensing are poised to revolutionize fields from medicine to finance and defence. By fostering collaboration, the GSQA can help member nations leapfrog traditional technological pathways.
- However, the alliance will face challenges, including a lack of funding compared to Western initiatives, a shortage of skilled quantum researchers in member countries, and the need to navigate complex geopolitics.
- Its success will depend on its ability to deliver tangible projects and create a vibrant ecosystem that can attract talent and investment, preventing a brain drain to developed quantum hubs.

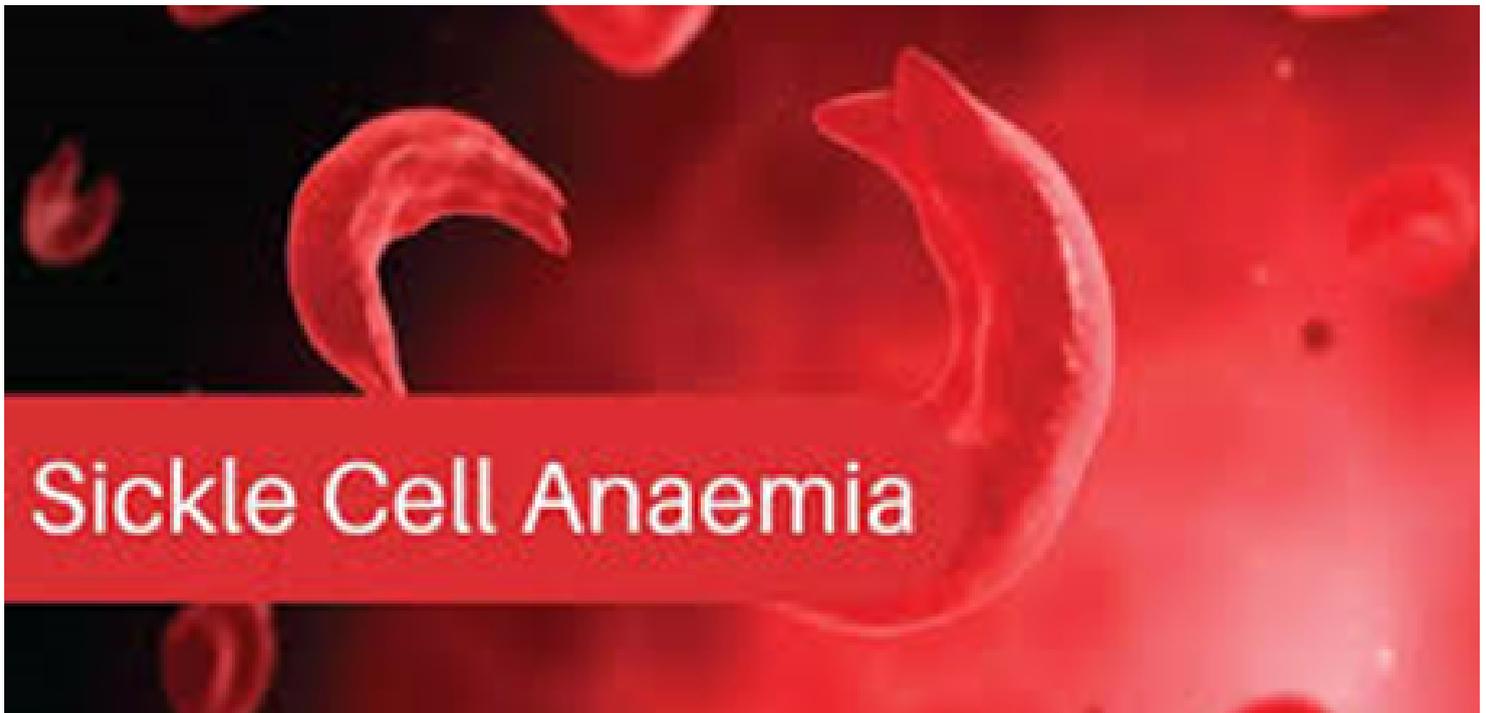
**UPSC Syllabus Correlation:**

**GS Paper 2:** Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests. **GS Paper 3:** Science and Technology - Indigenization of technology and developing new technology; Awareness in the fields of Computers, Robotics, Nano-technology, Bio-technology.

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## **2. National Mission on Sickle Cell Anaemia: PM Reviews Progress, Launches AI-Powered Screening Portal, Source: PIB, Ministry of Health and Family Welfare**

**Context:** Prime Minister Narendra Modi today chaired a high-level meeting to review the progress of the National Sickle Cell Anaemia Elimination Mission, which aims to eradicate the disease from India by 2047. The PM launched an AI-powered portal named 'Arogya-JanJati' for mass screening and patient management. The portal will use AI algorithms to predict high-prevalence areas, manage patient data, and provide personalized counseling to carriers of the gene.



### **Significance:**

- The mission targets a genetic disorder that disproportionately affects India's tribal population, making it an issue of both public health and social justice.
- The launch of the AI portal represents a significant leap in using technology for public health interventions. It aims to screen 7 crore people in the next three years.
- This tech-driven approach can overcome logistical challenges in remote areas, ensure better data management, and facilitate genetic counseling to prevent the birth of affected children.

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**Analysis:**

- While the mission's goal is noble and the use of technology is innovative, the challenges are immense.
- They include overcoming social stigma, ensuring last-mile delivery of screening kits in remote tribal hamlets, and providing lifelong access to affordable care and counseling.
- The success of the 'Arogya-JanJati' portal will depend on the quality of data fed into it and the availability of digital infrastructure and trained healthcare workers on the ground.
- A purely technological solution must be complemented by robust community engagement and a sensitive, empathetic healthcare delivery system.

**UPSC Syllabus Correlation:**

**GS Paper 2:** Issues Relating to Development and Management of Social Sector/Services relating to Health; Welfare schemes for vulnerable sections of the population by the Centre and States.

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### **3. India Crosses 200 GW Renewable Energy Capacity Milestone**

**Source: Economic Times**

**Context:** India has officially crossed the 200-gigawatt (GW) mark in installed renewable energy (RE) capacity, including large hydro projects. The milestone was achieved with the commissioning of the final phase of the 2 GW Khavda Solar Park in Gujarat. This achievement solidifies India's position as the fourth-largest RE market in the world and marks a significant step towards its ambitious goal of 500 GW of non-fossil fuel capacity by 2030, as per its updated Nationally Determined Contributions (NDCs).



#### **Significance:**

- Crossing the 200 GW threshold is a testament to India's consistent policy push, including Production Linked Incentive (PLI) schemes for solar module manufacturing and the Green Hydrogen Mission.
- It enhances India's energy security by reducing dependence on volatile imported fossil fuels and contributes significantly to its climate action goals.
- This milestone will boost investor confidence and attract more green finance into the country.

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**Analysis:**

- Despite this success, the path to 500 GW by 2030 remains steep, requiring an annual addition of nearly 40 GW.
- Key challenges persist, including land acquisition conflicts, intermittency of renewable power, and the need for massive investments in grid modernization and energy storage solutions (like batteries and pumped hydro).
- The financial health of electricity distribution companies (Discoms) also remains a critical bottleneck for signing new power purchase agreements.
- The next phase of growth will depend heavily on the success of energy storage solutions and the development of a robust ancillary services market to manage grid stability.

**UPSC Syllabus Correlation:**

**GS Paper 3:** Infrastructure: Energy; Conservation, environmental pollution and degradation.

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#### 4. India-Bangladesh Cross-Border Energy Pipeline Phase-II Inaugurated

**Source: Hindustan Times**

**Context:** The Prime Ministers of India and Bangladesh today jointly inaugurated Phase-II of the India-Bangladesh Friendship Pipeline (IBFP) and a new high-capacity gas pipeline connecting West Bengal to western Bangladesh. Phase II extends the diesel supply pipeline from Parbatipur to Rangpur and Bogura in Bangladesh, while the new gas pipeline will allow Bangladesh to import liquefied natural gas (LNG) regasified at Indian terminals.



#### Significance:

- This marks a deepening of energy cooperation under India's 'Neighborhood First' policy.
- For Bangladesh, it ensures a stable, cost-effective, and uninterrupted supply of fuel and gas, critical for its power plants and industrial sector.
- For India, it strengthens its role as a regional energy hub, creates a new market for its LNG infrastructure, and enhances economic and strategic linkages with its most important eastern neighbor.
- This integrated energy grid is a model for regional cooperation in South Asia.

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**Analysis:**

- The project is a win-win, showcasing how trans-border infrastructure can foster interdependence and mutual growth.
- However, for such cooperation to be sustainable, issues like tariff structures, long-term supply agreements, and transit security need to be managed effectively.
- This energy partnership serves as a powerful counter-narrative to Chinese infrastructure projects in the region, as it is built on principles of shared needs and mutual benefit.
- The success of this project could pave the way for more ambitious regional energy grids involving Nepal and Bhutan.

**UPSC Syllabus Correlation:**

**GS Paper 2:** India and its Neighborhood- Relations; Bilateral, Regional and Global Groupings and Agreements involving India.

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## **5. India AI Mission: Government Launches 'BHARAT-AI' Sovereign AI Cloud** **Source: PIB, Ministry of Electronics and IT**

**Context:** As a part of the ambitious IndiaAI Mission, the government today launched 'BHARAT-AI,' a sovereign AI cloud infrastructure. This Public-Private Partnership (PPP) initiative will provide Indian researchers, startups, and government bodies with access to significant Graphics Processing Unit (GPU)-based computing power. The first cluster, with 10,000 GPUs, has been established by C-DAC in collaboration with a private sector partner.



### **Significance:**

- The lack of access to large-scale, affordable computing power has been a major bottleneck for AI development in India.
- 'BHARAT-AI' aims to solve this problem, creating a foundational infrastructure for developing and training large-scale AI models, including Large Language Models (LLMs) and generative AI applications.
- This will democratize access to AI tools, foster innovation, and reduce reliance on foreign cloud providers, thereby ensuring India's "AI sovereignty."

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**Analysis:**

- BHARAT-AI is a critical piece of the puzzle for India to become a global AI powerhouse. However, simply providing infrastructure is not enough.
- Its success will depend on the quality of datasets available for training models, the development of a skilled talent pool, and the creation of a clear ethical and regulatory framework for AI development. Competing with the massive computational infrastructure of global tech giants will be challenging.
- The PPP model is crucial here, as it can bring in private sector efficiency and investment while maintaining government oversight for strategic objectives.

**UPSC Syllabus Correlation:**

**GS Paper 3:** Science and Technology- developments and their applications and effects in everyday life; Awareness in the fields of IT, Computers, Robotics.

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## **6. Third Litter of Cheetah Cubs Born in Kuno National Park; Survival Rate Improves, Source: The Hindu**

**Context:** In a positive development for Project Cheetah, officials at Kuno National Park (KNP) in Madhya Pradesh have confirmed the birth of four cubs to a Namibian cheetah named 'Jwala'. This is the third litter to be born in India since the ambitious reintroduction project began in 2022. More importantly, wildlife officials report an improved survival rate among the new cubs compared to previous litters, attributing it to better habitat management and non-invasive monitoring protocols.



### **Significance:**

- The birth of a new litter and their improved survival prospects provide a much-needed morale boost to the world's first intercontinental cheetah translocation project, which has faced several setbacks, including the deaths of several adult cheetahs and cubs.
- It indicates that the translocated cheetahs are adapting to Indian conditions and breeding successfully.
- This is a crucial step towards the long-term goal of establishing a viable, self-sustaining cheetah population in India.

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**Analysis:**

- While the news is encouraging, the project is far from being declared a success.
- The key challenges remain ensuring the long-term survival of the cubs into adulthood, managing human-wildlife conflict as the cheetahs disperse outside the park, and establishing a genetically diverse population by sourcing cheetahs from different parts of Africa.
- Scientists stress the need for a second cheetah habitat to be prepared urgently to avoid over-concentration in Kuno.
- The project remains a long-term, high-risk conservation experiment, and each successful birth is a small but vital step forward.

**UPSC Syllabus Correlation:**

**GS Paper 3:** Conservation, Environmental Pollution and Degradation.

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## **7. ASI Unearths Pre-Mauryan Urban Settlement Near Rajgir, Bihar**

**Source: Indian Express**

**Context:** The Archaeological Survey of India (ASI) today announced a significant discovery near Rajgir, the ancient capital of the Magadhan empire. Excavations at a new site have unearthed a well-planned urban settlement with ring wells, structural remains of houses, and a large quantity of Northern Black Polished Ware (NBPW) pottery, provisionally dated to circa 7th-6th century BCE. This pushes back the timeline of urbanization in the Gangetic plains.



### **Significance:**

- The discovery is of immense historical importance.
- It provides tangible archaeological evidence for a sophisticated urban culture in the pre-Mauryan era, corroborating literary accounts from Buddhist and Jain texts.
- The layout of the settlement suggests a high degree of social organization and town planning even before the rise of the Mauryan empire under Chandragupta.
- The artifacts will shed new light on the trade, culture, and daily life of the Mahajanapada period.

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**Analysis:**

- This finding could challenge existing narratives about the timeline and nature of the "second urbanization" in India.
- Further scientific dating and analysis of the artifacts will be crucial to confirm the exact chronology.
- The discovery highlights the immense archaeological potential that still lies untapped in the Gangetic valley.
- It also underscores the need for increased funding and advanced scientific techniques (like LiDAR surveys and carbon dating) in Indian archaeology to unearth and preserve the nation's rich past.

**UPSC Syllabus Correlation:**

**GS Paper 1:** Indian Culture - Salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

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## **8. 'Samruddh Adivasi' Scheme Launched for Digital & Financial Literacy of Tribal Women, Source: PIB, Ministry of Tribal Affairs**

**Context:** The Ministry of Tribal Affairs, in collaboration with the Ministry of Rural Development, today launched the 'Samruddh Adivasi' (Prosperous Tribal) scheme. The scheme aims to empower 1 million tribal women across 100 tribal-majority districts by providing them with comprehensive training in digital literacy, financial management, and entrepreneurship through the Self-Help Group (SHG) ecosystem.



### **Significance:**

- The scheme directly addresses key barriers to the economic empowerment of tribal women, who are often among the most marginalized sections of society.
- By leveraging the existing SHG network, the scheme ensures community-based implementation.
- Integrating digital literacy (using UPI, accessing government portals) with financial literacy (saving, credit, insurance) and entrepreneurship will create a powerful multiplier effect, enabling women to manage their finances better, access markets, and scale up their enterprises.

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**Analysis:**

- The scheme's success will depend on its implementation quality, particularly the relevance and accessibility of the training modules, which need to be delivered in local dialects.
- Ensuring last-mile connectivity and access to affordable smartphones and data is another critical prerequisite.
- The convergence between the Tribal Affairs and Rural Development ministries is a positive step, preventing duplication of efforts.
- If successful, the scheme can be a powerful tool for poverty reduction and gender empowerment in India's tribal heartland, aligning with the goal of inclusive growth.

**UPSC Syllabus Correlation:**

**GS Paper 2:** Welfare schemes for vulnerable sections of the population by the Centre and States; Mechanisms, Laws, Institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

**GS Paper 1:** Role of women and women's organizations.

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## **9. iCET Initiative: India and US Launch Joint Development of AI-enabled Drone Swarms, Source: The Hindu**

**Context:** Under the framework of the India-US Initiative on Critical and Emerging Technology (iCET), the defence ministries of both countries have officially launched a joint project for the co-development of AI-enabled drone swarm technology. The project will be executed by India's Defence Research and Development Organisation (DRDO) and the US Defense Advanced Research Projects Agency (DARPA), with involvement from select startups from both nations.



### **Significance:**

- This is one of the most significant and high-tech co-development projects ever undertaken by India and the US. Drone swarms, which use AI to coordinate the autonomous flight of a large number of drones for surveillance or attack, are a next-generation military technology.
- This project signals an unprecedented level of trust and strategic convergence between the two nations, moving beyond a buyer-seller relationship to one of genuine co-development of sensitive defence technologies.

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**Analysis:**

- The project is a game-changer for India's military capabilities and its defence industrial base.
- However, it will face significant challenges, including aligning the two countries' complex defence procurement and export control regulations, ensuring seamless technology transfer, and managing intellectual property rights.
- For the US, this is a strategic investment to build up the capabilities of a key partner in the Indo-Pacific to counter China.
- The success of this pilot project could pave the way for more ambitious co-development in areas like hypersonic and directed energy weapons.

**UPSC Syllabus Correlation:**

**GS Paper 2:** Bilateral agreements involving India.

**GS Paper 3:** Indigenization of technology and developing new technology; Various Security forces and agencies and their mandate.

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## **10. RBI Financial Stability Report Highlights Risks from Unsecured Lending and Climate Events, Source: Economic Times**

**Context:** The Reserve Bank of India (RBI) today released its biannual Financial Stability Report (FSR). The report concludes that India's financial system remains resilient, with banks and non-banking financial companies (NBFCs) well-capitalized. However, it flagged two emerging areas of risk: the rapid growth in unsecured personal loans and the increasing physical and transition risks from climate change-related events on the banking sector.



### **Significance:**

- The FSR is a crucial health check-up of the financial system. The specific warning on unsecured loans, despite recent macroprudential tightening by the RBI, indicates the central bank's continued concern about potential asset quality stress in this segment if the economic cycle turns.
- The inclusion of a detailed chapter on climate-related financial risks is a major development, signaling that the RBI is moving towards integrating climate considerations into its regulatory and supervisory framework.

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**Analysis:**

- The report presents a picture of cautious optimism. While the headline indicators like the Capital to Risk-Weighted Assets Ratio (CRAR) are strong, the underlying risks require proactive management.
- For banks, the challenge will be to maintain credit growth without compromising on underwriting standards, especially in the unsecured segment.
- The report's focus on climate risk will compel financial institutions to develop strategies to assess and manage the impact of floods, droughts, and other climate events on their loan portfolios.
- This marks the beginning of a new, complex area of financial regulation in India.

**UPSC Syllabus Correlation:**

**GS Paper 3:** Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment; Inclusive Growth and issues arising from it. Government Budgeting.