



Mains Marathon
Compilation

2nd to 7th January, 2023

Mains Marathon Compilation for the Month of January, (First Week) 2023

- 1. Despite their advantages for consumers, and farmers, millets aren't the first choice. What are the reasons behind it? What should be done to make it more acceptable?**
- 2. What are the concerns associated with deepfakes? Suggest solutions to counter the menace of deepfakes.**
- 3. Progress is antithetical to setting up prisons, and we must address congestion in prisons in non-carceral ways. Discuss.**
- 4. Highlight the hurdles in enhancing energy storage capacity to match renewable power generation capacities.**
- 5. Given all the plus points of nano-fertilizers vis-à-vis their conventional counterparts, the need for their promotion cannot be overstressed. In light of the statement, discuss the significance of hi-tech nano-fertilizers.**
- 6. While Vietnam is set to become the most attractive destination for MNCs diversifying away from China, India needs to undertake substantial catch-up reforms in all areas to be considered a significant contender in this process. Elaborate.**
- 7. Highlight the significance of policy guidelines for uplinking and downlinking of television channels from India.**
- 8. In the light of the recent developments, briefly discuss the evolution of the right to free speech**
- 9. Fielding nascent technologies like Artificial intelligence enabled weapons without comprehensive testing puts both military personnel and civilians at risk. Do you agree? Give justifications for your arguments.**
- 10. Entry of foreign universities is a long step forward for higher education in India. But there will be challenges. Comment.**

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Q.1) Despite their advantages for consumers, and farmers, millets aren't the first choice. What are the reasons behind it? What should be done to make it more acceptable?

Indian Express

Introduction: Contextual introduction.

Body: Explain some reasons why millets aren't the first choice for consumers, and farmers. Also write some solutions to make it more acceptable.

Conclusion: Write a way forward.

The term millet is used to describe **small-grained cereals** like sorghum (jowar), bajra, little millet (kutki), finger millet (ragi), etc. Millets score over rice and wheat in terms of minerals, vitamins, and dietary fibre content, as well as amino acid profile. The **year 2023 will be celebrated as the International Year of Millets.**

Despite their advantages for consumers and farmers, millets are not the first choice due to following reasons:

- **Market and economic barriers:** Unjust pricing and intermediaries have led to farmer distress. Market dynamics don't favour the growth of millets.
- **Barriers to growth:** A rise in incomes and urbanization has led to millets being used for various purposes other than for consumption.
- **Low per-hectare yields:** the national average is below 2 tonnes for millets, as against 3.5 tonnes for wheat and 4 tonnes for paddy. With access to assured irrigation, farmers would tend to switch to rice, wheat, sugarcane, or cotton.
- Due to the **Green Revolution and the National Food Security Act of 2013**, two-thirds of India's population receives up to 5 kg of wheat or rice per person per month at Rs 2 and Rs 3/kg respectively. This goes against millets.
- The **absence of government procurement at minimum support price** would make farmers hesitant to grow this suitable for both post-monsoon kharif and summer cultivation.

What should be done to make it more acceptable?

- **Incentivizing the adoption of inter-cropping and providing crop insurance:** The inter-cropping of millets is beneficial because the fibrous roots of millet plants help in improving soil quality, keep water run-off in check and aid soil conservation in erosion-prone areas.
- Every **schoolchild and anganwadi beneficiary** can be served one daily meal based on locally-sourced bajra, jowar, ragi, etc. It will give a boost to **crop diversification** by creating demand.
- **MSP procurement of millets** should be part of a decentralised nutritional programme specifically targeting tomorrow's citizens.
- Millets could be served in the form of **ready-to-eat foods** such as cookies, laddu, nutrition bars, etc.
- The Centre could **fund any state willing to procure millets** specific to their region exclusively for distribution through schools and anganwadis. E.g. **Odisha** already has a dedicated millets mission.

A combination of **central funding with decentralised procurement** linked to nutrition goals can do for millets what the Food Corporation of India achieved with rice and wheat.

Q.2) What are the concerns associated with deepfakes? Suggest solutions to counter the menace of deepfakes.

The Hindu

Introduction: Contextual introduction.

Body: Explain concerns associated with deepfakes. Also suggest solutions to counter the menace of deepfakes.

Conclusion: Write a way forward.

Deepfakes are **digital media - video, audio, and images edited and manipulated using Artificial Intelligence**. It is basically **hyper-realistic digital falsification**. Access to commodity cloud computing, public research AI algorithms, and abundant data and availability of vast media have created a perfect storm to democratise the creation and manipulation of media. This synthetic media content is referred to as deepfakes.

Concerns associated with deepfakes:

- Deepfakes can be used to **damage reputation**, fabricate evidence, defraud the public, and **undermine trust in democratic institutions**.
- Pornographic deepfakes reduce women to sexual objects causing **emotional distress**, and in some cases, lead to **financial loss** and collateral consequences like job loss.
- Deepfakes can also cause short-term and long-term social harm and accelerate the already **declining trust in traditional media**.
- Deepfake could act as a powerful tool by a malicious nation-state to **undermine public safety and create uncertainty and chaos** in the target country. Deepfakes can undermine trust in institutions and diplomacy.
- Deepfakes can be **used by non-state actors**, such as insurgent groups and terrorist organisations, to show their adversaries as making inflammatory speeches or engaging in provocative actions **to stir anti-state sentiments** among people.
- **Leaders may weaponise deepfakes** and use fake news and alternative-facts narrative to dismiss an actual piece of media and truth.

Solutions to counter the menace of deepfakes:

- Media literacy efforts must be enhanced to cultivate a discerning public. **Media literacy for consumers** is the most effective tool to combat disinformation and deepfakes.
- We also need **meaningful regulations** with a collaborative discussion with the technology industry, civil society, and policymakers **to develop legislative solutions** to disincentivising the creation and distribution of malicious deepfakes.
- We need **easy-to-use and accessible technology solutions** to detect deepfakes, authenticate media, and amplify authoritative sources.
- Deep Fakes **must be included under hateful manipulated media**, propaganda, and disinformation campaigns.
- Journalists should be provided with tools to examine the authenticity of images, video, and audio recordings. For that, they require **proper training and resources**.
- Policymakers need to understand how deep fakes can threaten polity, society, economy, culture, individuals, and communities.

The best way to deal with this menace is AI-backed technological tools to detect and prevent deep fakes. These tools must be invented by the countries in cooperation as soon as possible because these technologies are even capable of invoking wars among countries, in this information age.

Q.3) Progress is antithetical to setting up prisons, and we must address congestion in prisons in non-carceral ways. Discuss.

The Hindu

Introduction: Contextual introduction.

Body: Explain present conditions of prison. Also explain why need to address this.

Conclusion: Write a way forward.

Prison is a **State subject** under List-II of the Seventh Schedule in the Constitution. The management and administration of Prisons falls exclusively in the domain of the State Governments, and is governed by the **Prisons Act, 1894** and the Prison Manuals of the respective State Governments.

Present conditions of prison:

- Prisons Act, 1894, a **colonial legislation** which treats prisoners as sub-par citizens, and provides the legal basis for punishment to be retributive, rather than rehabilitative.
- These laws are also **highly casteist**, and remain largely unchanged since they were drafted by the British. For example, some jail manuals continue to focus on purity as prescribed by the caste system, and assign work in prison based on the prisoner's caste identity.
- Furthermore, Dalits and Adivasis are over-represented in Indian prisons. Legislations such as the **Habitual Offenders Act and Beggary Laws** allow the police to target them for reported crimes.
- According to the **National Crime Records Bureau's reports** the capacity of prisons has increased from some 3.32 lakh to 4.25 lakh in the last decade, which is a 27% increase while the number of prisoners has increased from 3.7 lakh to 5.54 lakh in the same period, by 48%.

Need to address this:

- Prisons were considered a place for rehabilitation for prisoners but it has become a place of **despair, hopelessness and helplessness** for prisoners.
- Prisons are **overcrowded** with the high number of **undertrial prisoners** (70 percent) than convicts.
- Deathworthy report on mental health and the death penalty reveals that over 60% of death row prisoners had **mental illness** and they have not been provided treatment.
- Overcrowded jails are a **violation of the human rights** of prisoners guaranteed **under Article 21** of the Constitution.
- Apart from risking the lives of inmates, ignorance of the poor conditions of prisons has also added to the misery of the families of those in jail.

There is a need for reform, rehabilitation or reintegration. These will make prisoners confident in their lives, in their choices and in their ability to take decisions and be responsible and accountable for them. The rehabilitation process should be empathetic and caring instead of violence.

Q.4) Highlight the hurdles in enhancing energy storage capacity to match renewable power generation capacities.

Business Standard

Introduction: Contextual introduction.

Body: Explain some hurdles in enhancing energy storage capacity to match renewable power generation capacities.

Conclusion: Write a way forward.

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Energy storage is not just about integrating intermittent wind and solar output. Battery solutions, which can be deployed rapidly and with pinpoint precision, can be used to make the overall grid more efficient and resilient, regardless of the generation sources.

Hurdles in enhancing energy storage capacity:

- **High Cost:** The costs of either battery storage or energy storage via hydrogen are huge – and even if the costs of batteries can be reduced, big questions about the space, security and safety of such storage installations remain.
- **Grid modernization:** The growth of battery storage goes hand-in-hand with grid modernization efforts, including the transition to smart grids. Batteries help to unlock the full potential of smart technologies, and vice versa.
- **Incomplete definition of energy storage:** Energy storage is having an identity crisis, with stakeholders and policymakers around the world wrestling with how to define fast-acting battery storage.
- The use of fossil fuels means that the power supply can be adjusted instantaneously to meet changing demand. In contrast, **wind and solar energy are variable**, which prevents them from becoming major energy sources in an economy that requires constant, on-demand electricity.
- **Investments in gridlines** are required to transport renewable energy from where it is produced to where it is needed.
- One of the biggest obstacles is **limited supplies of lithium and cobalt**, which currently are essential for making lightweight, powerful batteries. According to some estimates, around 10% of the world's lithium and nearly all of the world's cobalt reserves will be depleted by 2050.
- There are **leakage problems** associated with hydrogen. **Hydrogen is highly inflammable** and requires special containers and pipes to transport safely. Still, some of the gas leaks into the atmosphere causing environmental damage.

As all energy sources have negatives, so the government must keep this in mind that fossil fuel will be needed for the energy generations in the coming decades.

Q.5) Given all the plus points of nano-fertilizers vis-à-vis their conventional counterparts, the need for their promotion cannot be overstressed. In light of the statement, discuss the significance of hi-tech nano-fertilizers.

Business Standard

Introduction: Contextual introduction.

Body: Explain significance of nano-fertilizers.

Conclusion: Write a way forward.

India is the **2nd largest consumer and 3rd largest producer of fertilizers** in the world. India depends heavily on imports for its fertilizer requirements. In 2021-22, in value terms, imports of all fertilisers touched an all-time high of \$12.77 billion. A nano fertilizer is any product that is **made with nano particles or uses nanotechnology** to improve nutrient efficiency.

Significance of nano-fertilizers:

- **Higher Shelf Life:** Liquid nano urea has a shelf life of a year and farmers need not be worried about “caking” when it comes in contact with moisture.
- These innovative and indigenously developed liquid fertilisers can prove a game-changer by **reducing the dependence on imports and government subsidies** due to the spike in the international prices of plant nutrients in the aftermath of the Ukraine-Russia conflict.

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- Their ultra-small particle size is **favourable to easier absorption** by the plants than with bulk fertilisers, translating into **higher nitrogen use efficiency**. E.g. While conventional urea has an efficiency of about 25%, the efficiency of liquid nano urea can be as high as 85-90%.
- Nutrients, are bound to nano-dimensional adsorbents, which release nutrients very slowly as compared to conventional fertilizers. This approach also **minimizes nutrient leaching** into ground water.
- Comparatively **higher solubility and diffusion** impart superiority to nanofertilizers over conventional synthetic fertilizers.
- They **increase soil fertility**, yield, and quality parameters of the crop, they are **non-toxic** and less harmful to environment and humans.

Indian fertilizer sector needs a revolution to address the challenges posed by the present fertilizer usage and supply chain. Use of Nano Urea is promoted through different activities such as awareness camps, webinars, field demonstrations, kisan sammelans and films in regional languages etc.

Q.6) While Vietnam is set to become the most attractive destination for MNCs diversifying away from China, India needs to undertake substantial catch-up reforms in all areas to be considered a significant contender in this process. Elaborate.

Business Standard

Introduction: Contextual introduction.

Body: Explain why Vietnam is becoming the most attractive destination for MNCs. Also explain why India is lagging behind.

Conclusion: Write a way forward.

After Covid-19, China is facing a unique global withdrawal of MNCs. Amidst this, Vietnam has emerged as the preferred choice of electronics and mobile phone companies, trying to move out of China.

Why Vietnam is becoming the most attractive destination for MNCs?

- Vietnam has invested billions of dollars in **investments to set up research and education centers**, attracting major chipmakers to shop there.
- Vietnam has evolved as an **attractive destination for FDI**, as it is increasingly providing **cheap labour** whilst offering a friendly environment and **reduction in taxes** to foreign enterprises. E.g. out of 56 companies that have moved out of China since its trade war with US, only eight have invested in India, while 26 shifted bases to Vietnam.
- Vietnam has been swift in offering **attractive corporate tax rates** for large firms wanting to relocate.
- Vietnam's total **merchandise exports grew** at an annualised average rate of 18 per cent in the last 10 years till 2019, as compared with India's 5 per cent.

India needs to undertake substantial catch-up reforms due to following reasons:

- **Complex labour laws:** Large-scale exclusions of workers from labour law, violence and arrests are the reasons for India's poor performance.
- **Land acquisition difficulty:** Stringent land acquisition laws and inflexible labour regulations make it difficult for India to attract investors in the manufacturing sector.
- Enterprises continue to face **domestic policy challenges**. The most difficult obstacles to efforts in scaling up production in India include **complex tax policies and procedures**, the **substandard quality of infrastructure**, and **uncertainty in trade policy**.
- Indian Firms also face problems in meeting **quality standards, lack institutional support, and inadequate information**. All this impedes their integration into GVCs.

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- India's top exports comprised **largely low-tech manufacturing products** like mineral fuels, pearls, machinery, organic chemicals etc. Hi-tech exports as a percentage of manufacturing in Vietnam stands at 40 per cent, whereas in the case of India it stands abysmally low, at 9 per cent in 2018.
- 90 percent of Vietnam's merchandise trade is through **seaports**. In the case of India, despite its coastline being almost double that of Vietnam, it has not been successful in using it to its benefit.

India is soon going to be the most populous country with the largest workforce in the world. India should update and implement Labour Rules as well as take steps to ensure clarity on data protection rules that may impact investment decisions for digital infrastructure.

Q.7) Highlight the significance of policy guidelines for uplinking and downlinking of television channels from India.

The Hindu

Introduction: Contextual introduction.

Body: Explain the significance of policy guidelines for uplinking and downlinking of television channels from India.

Conclusion: Write a way forward.

While an uplink refers to the link from a ground station up to a satellite, a downlink is the link from a satellite down to one or more ground stations or receivers. Under these policy guidelines, the channels would have to mandatorily broadcast content on themes of national importance and socially relevant issues for at least 30 minutes every day.

Significance:

- **Ease of compliance for the permission holder:** Requirement for seeking permission for live telecast of events has been done away with; only prior registration of events to be telecast live would be necessary.
- **Ease of Doing Business:** as it provides **specific timelines** for grant for permission. A channel can be uplinked by using facilities of more than one teleport/ satellite (previously one teleport/satellite).
- **Simplification and Rationalization:** One **composite set of Guidelines** has replaced two separate Guidelines and the structure has been synthesized to avoid duplication. It also contains a **penalty clause** for different types of contraventions (uniform penalty at present).
- **Making India a Teleport-hub:** The move is expected to allow television channels of Bhutan, Bangladesh, Sri Lanka, and Nepal to uplink from India, instead of Singapore. This would create **employment opportunities** and make India a Teleport-hub for other countries.
- The amended Cable Television Network Rules bring in a **strong institutional system for redressing grievances** and make broadcasters and their self-regulating bodies accountable and responsible.

The new policy guidelines are a significant step and it needs to be celebrated in India's 'Azadi Ka Amrit Kaal'.

Q.8) In the light of the recent developments, briefly discuss the evolution of the right to free speech

Times of India

Introduction: Contextual introduction.

Body: Explain the evolution of the right to free speech.

Conclusion: Write a way forward.

Article 19(1)(a) gives citizens the right to freedom of speech and expression. Article 19(2) enlists certain grounds on the basis of which the state, through a law, can impose **reasonable restrictions** on this right. These grounds are the sovereignty and integrity of India, the security of the state, friendly relations with foreign states, public order, decency or morality, contempt of court, defamation and incitement to an offence.

Evolution of the right to free speech:

- The **Constitution of India Bill, 1895** is the first document that contains such provision. It gave citizens a right to free speech but made citizens 'answerable for abuses, which they may commit in the exercise of this right, in cases and in the mode the Parliament to determine'.
- Through a series of judgments delivered in the 1960s-80s, SC has read the **freedom of the press** into Article 19(1) (a). This includes the right to **freely publish** and circulate information, opinions, as well as advertisements. It has also **recognised the right to know** as a part of free speech by holding that voters are entitled to receive information about the criminal antecedents of candidates.
- In *Maneka Gandhi v. Union of India*, Court held that reasonable restrictions should be such that **others' rights should not be hindered or affected** by the acts of one man. Any speech that can harm a large group of people and their rights need restriction by state.
- Recently the Supreme Court ruled that **no further curbs** could be imposed on the fundamental right to freedom of speech and expression, holding that the existing eight "reasonable" restrictions under Article 19(2) of the Constitution are "exhaustive".

It can be easily concluded that right to freedom of speech and expression is one of the most important fundamental rights.

Q.9) Fielding nascent technologies like Artificial intelligence enabled weapons without comprehensive testing puts both military personnel and civilians at risk. Do you agree? Give justifications for your arguments.

Indian Express

Introduction: Contextual introduction.

Body: Explain some benefits of AI enabled weapons. Also write some concerns.

Conclusion: Write a way forward.

Artificial intelligence describes the **action of machines accomplishing tasks that have historically required human intelligence**. It includes technologies like machine learning, pattern recognition, big data, neural networks, self algorithms etc. AI powered by deep learning, data analytics, and cloud computing, is poised to alter the maritime battlefield, potentially triggering a revolution in military affairs in India.

Benefits of AI enabled weapons:

- **Logistics and supply chain management:** AI-backed systems could go a long way in increasing efficiencies, reducing wastage and overall costs in the military's logistics management.

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- **Cyber-operations:** As cyber warfare becomes faster, more sophisticated and more dangerous, it becomes necessary to develop both offensive and defensive cyber-war capabilities both to **protect the military's own assets and communication links**, and to attack similar assets of opposing militaries.
- **Intelligence, surveillance and reconnaissance (ISR):** Such "intelligent" unmanned systems could be used for **patrolling in harsh terrains and weather conditions**, providing harbour protection, and allowing the deploying force to scout the battlefield or conflict zone with no danger to human soldiers.
- These weapons can **save soldiers' lives** if wars are fought by machines. Also, in the hands of a responsible military, they can help soldiers target only combatants and **avoid inadvertently killing** friendly forces, children, and civilians.

Concerns:

- **Ethical paradox:** AI **compromises the control, safety, and accountability** of weapon systems; it also enhances the risk of shared liability between networked systems, particularly when weapon algorithms are sourced from abroad.
- **Challenging for policy making:** because military doctrine is premised on a traditional understanding of conflict. E.g. It is not yet clear if unmanned maritime systems enjoy the status of "ships" under the UN convention of the laws of the sea;
- **Capacity limitation:** a large gap still exists in the development of critical technologies, which are system engineering, airborne and underwater sensors, weapon systems, and hi-tech components.
- AI is characterised by a predisposition to certain kinds of data. This may **affect rational decision-making, undermining confidence** in automated combat solutions. E.g. AI seemingly automates weapon systems in ways that are inconsistent with the laws of war. To fully exploit their potential, however, the Indian military needs to build a close working relationship with the vibrant private technology sector in India, and especially with start-ups doing exciting work in the AI space.

Q.10) Entry of foreign universities is a long step forward for higher education in India. But there will be challenges. Comment.

Indian Express

Introduction: Contextual introduction.

Body: Explain why entry of foreign universities is a step forward for higher education in India. Also write some challenges.

Conclusion: Write a way forward.

Internationalisation of Indian higher education is a salient **feature of National Education Policy 2020**. The draft regulations of the UGC on Setting up and Operation of Campuses of Foreign Higher Educational Institutions in India 2023 pave the way for the entry of foreign universities into the groves of higher education in the country.

Why entry of foreign universities is a step forward for higher education in India?

- **Encourage competition:** This step would encourage competition mainly between existing private universities and foreign branch institutions.
- **Promotes new ideas:** about curriculum, pedagogy, and governance to Indian higher education.
- **Opportunity to learn business:** Foreign countries and universities will be providing opportunities for home campus students to learn about Indian business, society, and culture to participate in growing trade and other relations.
- **It would be helpful in addressing skill requirements and providing examples of different approaches to higher education.**

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- The number of Indian students opting for higher education overseas grows annually and their abroad spending is set to grow from current annual \$28 billion to \$80 billion by 2024. Subsequently, it will help retain the best of Indian talent by **controlling the problem of brain drain**.

Challenges:

- It will **not be easy to attract** foreign universities to India and even more difficult to create the conditions for them to flourish.
- There is also an issue of **dilution of standards of teaching** and delivery in a foreign campus. There is a lot of investment in training local staff to adhere to standards and without a strong legal and financial structure it becomes a risky plan.
- A big challenge will be India's "well-known" bureaucracy, especially the **multiple regulators**.
- It would be difficult to ensure that the degrees offered by the foreign branch campuses would be accepted by the employers in the home countries of the campuses.
- The opaque salary structure of private higher education institutions remains a cause of concern to many and, in the **absence of tangible recruitment rules**, the gap would further widen once foreign branch campuses are operational in India.
- The challenge lies with **Humanities and Social Sciences** where multiple interpretations are popular, pushing the boundaries of knowledge. The foreign faculty members may find it difficult to balance state policies, sensibilities and laissez-faire intellectual standpoint.

Education can be an important source of soft power if it is pursued in the right direction. Lessons can be learnt from our **Yoga culture** which has gained tremendous recognition worldwide.