



DAILY CURRENT AFFAIRS

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Bill to increase minimum age of marriage

Syllabus: GS2/ Government Policies & Interventions, Issues Arising out of their Design & Implementation.

In Context

- A parliamentary committee was recently examining the Prohibition of Child Marriage (Amendment) Bill, which seeks to increase the age of marriage of women.

More about the news

- **Background:**
 - The **Prohibition of Child Marriage (Amendment) Bill** was introduced in the Lok Sabha in December 2021 and was referred to the **Standing Committee on Education, Women, Children, Youth and Sports**.
 - The Standing Committee on Education, Women, Children, Youth and Sports **functions under the Rajya Sabha Secretariat**.
- **Objective of the Bill:**
 - The Bill seeks to increase the age of marriage of women from the present 18 to 21 years.
 - The Bill seeks to bring parity in the minimum age of marriage for men and women overriding all existing laws, including any custom, usage, or practice governing the parties in relation to marriage.
- **Panel's Current position on the Bill:**
 - The panel has received multiple extensions since it began its deliberations.
 - The bill has now been granted a fresh three-month extension by the panel to table its report.

Issue of Marriageable age in India

- In India, child marriage has been a stumbling block for women since time immemorial.
- **Legislations:**
 - In the 19th century, the marriageable age for women used to be 10 years and 15 years from 1949 onwards.
 - However, in 1978, an amendment was passed under **the Child Marriage Restraint Act (CMRA)** to increase the marriageable age for girls to 18.
 - In 2006, the Government of India enacted the Prevention of Child Marriage Act (PCMA) that replaced CMRA with a motto of the abolishment of child marriage.
- **Data on early marriages of girls in India:**
 - While it has been 44 years since the anti-child marriage act, the primitive practice continues in several parts of the country.
 - According to **National Family Health Survey-5 (NFHS-5) 2019-21**, women in the age group of 20-24 years who were married before they turned 18, are 14.7% in urban and 27% in rural areas.
 - Women aged 15-19 years who were already mothers or pregnant at the time of the survey were 3.8% (urban) and 7.9% (rural).

Significance of the Prohibition of Child Marriage (Amendment) Bill

- **Bringing women on equal footing:**
 - To bring women on equal footing with men, the government has introduced the Prohibition of Child Marriage (Amendment) Bill to **raise the legal age of marriage** of women to 21 from 18 years.
- **Empowering girls:**
 - In India, thousands are pushed into marriage early. Sometimes forcibly, against their will, seemingly to 'ward off' bad influences or to not escape the opportunity of getting a 'perfect' match.
 - According to the Prime Minister, increasing the legal age of marriage will empower girls and will help in building their careers.

- **Help in solving other gender related issues:**
 - The government states that this would bring gender equality in the country and will resolve other problems such as Maternal Mortality Rate, Infant Mortality Rate, poor health of women, etc

Challenges & criticisms

- **Crossing the adult age bar from '18':**
 - If women can vote at the age of 18, why does she have to choose her life partner at 21.
 - If we look at all the laws around, 18 is the cut off so why do we increase the marriage to 21.
 - Be it the age of consent or the right to choose abortion, Indian laws have allowed women aged 18 and above to decide on their own.
 - The government should look into all these laws too, before implementing this law.
- **Counterproductive legislation:**
 - Several experts fear that the proposed legislation might end up being futile if not counter-productive.
 - The pressure to educate young girls until 21 among poor families will **increase the rate of sex-selective abortion** in the country.
 - The fear of rape or elopement will also loom large, especially in the rural areas due to the proposed law.
- **Not touching the actual issues:**
 - According to critics, merely extending the marriage by two years without looking at **other social factors** cannot be the right way to change legislation
 - In the proposed law, girls are **not getting the freedom to choose their partners**, and there is **no importance given to consent** from a girl's side.
 - The problem of marriage **pressure will remain** the same irrespective of the marital age and the argument of augmenting gender equality through the new amendment remains hollow.
- **Marriage as an option for freedom:**
 - According to experts, several girls decide to get married early to get rid off violent homes where they are considered a burden and need to be married off. They consider marriage as an option for freedom.
 - However, the implementation of this law might change the situation.
- **Issue of 'consent' under POSCO:**
 - Critics also question if the POSCO Act will be amended as a supplement of the PCMA Act.
 - The Protection of Children from Sexual Offences (POCSO) Act 2012 stands out as comprehensive legislation on sexual crimes against children in India.
 - Many cases of sexual assault reported in the country under POSCO and other laws dealing with 16-18 years-old children are consensual and are reported by a girl's family who disapproves of the teenagers' conduct.

Global Position

- A large number of countries have capped the **marital age at 18** for both boys and girls.
 - The list includes Australia, Finland, France, Greece, Hungary, Germany, Israel, Iceland, Switzerland, and Russia.
- In **New Zealand**, the marriageable age is **20 for both men and women**.
- In **Singapore**, individuals **under age 21** wishing to marry must obtain parental consent, and individuals **under age 18 will also require a special licence** from the Ministry of Social and Family Development.

Way Ahead

- Girls need to get equal opportunities in terms of health, education, and living.
 - Before increasing the legal age for marriage, the government should work on the Right to Education Act (RTE). It should be extended beyond 14 years.
- Such issues must be dealt with public awareness and holding wider discussions.

Source: TH

OBCs and Sub-Categorisation

Syllabus: GS2/Indian Polity

In News

- The Minister for Backward Classes Welfare in Andhra Pradesh stated that the state will begin a **backward classes census from Nov 15, 2023**.

Who are the Other Backward Classes (OBCs)?

- The expression ‘OBC’ was coined to denote backward/ marginalised communities and castes **that were not Scheduled Castes (SCs) or Scheduled Tribes (STs)**.
- **Constitutional provisions for the upliftment of OBCs:**
 - **Article 15(4):** The exception under Article 15 specify that the “Nothing in this article or in **clause (2) of Article 29** [non-discrimination with regard to admission into state educational institutions on grounds of religion, caste, etc] shall prevent the State from **making any special provision for the advancement of any socially and educationally backward classes of citizens**.”
 - **Article 16(4):** It allows the state to make “**any provision for the reservation of appointments or posts in favour of any backward class of citizens** which, in the opinion of the State, is not adequately represented in the services under the State”.
 - **Article 340** of the Constitution provides for the **appointment of a Commission** to investigate the conditions of and the difficulties faced by the socially and educationally backward classes and to make appropriate recommendations .

Commissions for OBCs

- **Kaka Kalelkar Committee:** It was constituted by Jawaharlal Nehru's government in **1953**, and submitted its report in 1955.
 - **Identification criteria:** low social position in the traditional caste hierarchy of Hindu society; lack of general educational advancement among the major section of the caste/ community; inadequate or no representation in government service; and inadequate representation in trade, commerce and industry.
 - **Recommendations:** It prepared a list of 2,399 backward castes or communities in the country, categorizing **837 of them as "most backward"**.
 - It recommended enumerating castes in the 1961 census, providing **25-40% reservation** at different levels of government jobs, and **70% reservation** for admission to technical and professional institutions.
 - The report **was never discussed in Parliament and never implemented.**
- **Mandal Commission:** This was the B P Mandal Commission, which was **appointed in 1979 by Morarji Desai's government**, and its recommendations were implemented in **1990**.
 - It identified 3,743 castes and communities as OBCs, estimated their population at **52%**, and **recommended 27% reservation** in government jobs and admissions to all government-run scientific, technical, and professional institutions.
 - **No subcategories were recognised** within the 27% OBC quota.

Demand for Sub-Categorisation

- The **many castes among the OBCs are at different levels of marginalisation.**
 - At first glance, **two broad categories within the OBCs emerge:** those who own land and those who do not.
- The **demand for reservation for the "backwards among OBCs"** has gained traction as the feeling has grown that a **handful of "upper" OBCs have grabbed most of the benefits of the 27% reservation.**

Subcategories in states

- Over the decades, **state governments have applied their own criteria** to distribute quota benefits among the various categories of OBCs.
- **Andhra Pradesh, Telangana, Karnataka, Jharkhand, West Bengal, Maharashtra, Tamil Nadu, and Kerala** provides reservations for the sub-categories among the OBCs.

Current Status

- In , 2015, the National Commission for Backward Classes (NCBC), suggested that OBCs should be **sub-categorised into Extremely Backward Classes, More Backward Classes, and Backward Classes.**
- The recommendation was not implemented and, in 2017, a new commission for sub-categorisation of OBCs was constituted under **Justice G Rohini.**
 - The Rohini Commission submitted its report on July 31 2023, but its contents are not public.

National Commission for Backward Classes (NCBC)

- It was initially constituted by the **Central Govt by the National Commission for Backward Classes Act, 1993** and so far the **Commission had been reconstituted 7 times up to 2016.**
- The present Commission (8th) has been accorded **Constitutional Status** and constituted through **“The Constitution (One Hundred and Second Amendment) Act, 2018”.**
 - **Article 338B** has been inserted, forming a Commission for the socially and educationally backward classes to be known as **National Commission for Backward Classes.**
 - It consists of **a Chairperson, Vice-Chairperson and three other Members in the rank & pay of Secretary to the Govt of India.**

Source: [IE](#)

Copyright of Religious Texts

Syllabus: GS3/Economy

In News

- The Delhi High Court has found **“large-scale infringement”** in the reproduction **on the Internet of copyrighted works of the Bhaktivedanta Book Trust.**

About

- The **Bhaktivedanta Book Trust** claimed that certain websites, mobile apps, and Instagram handles were making available a large number of the trust’s copyrighted works **without its permission, which amounted to infringement.**

High Court’s Verdict

- **Adaptation of the scriptures**, including “explanation, meaning, interpretation or creating any audio visual works”, would be **entitled to copyright protection** because these are the **original works of the authors themselves.**

- Thus, there can be no objection in the **actual reproduction of the text of Srimad Bhagavad Gita** or similarly other spiritual books.
 - However, the **manner in which the same is interpreted** by different gurus and spiritual teachers being varied in nature, **copyright would vest in respect of the original parts of the literary works** which preach, teach or explain the scripture.
- The HC added that since Srila Prabhupada had himself handed over the copyrights to be administered by the trust, the **works cannot be “reproduced without authorization, licence or the permission” of the trust.**

Bhaktivedanta Book Trust

- It **publishes books and commentaries** on Indian religious philosophy and spiritualism, especially classic Vaishnava texts.
- It was established in **1970** by **Bhaktivedanta Swami Prabhupada** (Srila Prabhupada), who also founded the Gaudiya Vaishnava religious organisation International Society for Krishna Consciousness (ISKCON), colloquially known as the **Hare Krishna Movement**.

Are religious texts protected by copyright?

- Religious scriptures are in the **public domain**, and in copyright law, **no exclusive intellectual property rights apply to creative works in the public domain.**
- The King James Version (KJV) of the Bible, **one of the most widely used translations of the Bible, are not protected by copyright.**
 - However, **many modern translations of the Bible are copyright-protected** because they represent new creative works by the translators.
- While the Ramayana and Mahabharata are not protected by copyright, the television series Ramayana created by Ramanand Sagar or B R Chopra’s Mahabharata are **“transformative works” that would be protected.**

What does the copyright law in India say?

- Indian copyright law **protects “original work”** — a creative and independently created expression fixed in a tangible medium.
- The law grants the creator/ author of the work the exclusive right to “use, reproduce, distribute, perform, and display their work”.
- The **law also protects transformative work** which is a creative/ artistic work that takes existing material (text, music, art) and significantly modifies, reinterprets, or builds upon it to create something new and distinct.

Source: [IE](#)

Appointments and Transfer of Judges in HCs

Syllabus: GS2/Functioning of judiciary

In News

- The Union government recently notified the **transfer of 16 high court judges and appointment of 17 new judges** in various high courts.

Appointment of Judges in the High Courts

- **Qualifications:** The qualifications regarding the appointment are provided in **Article 217**. The person
 - must be a **citizen of India**;
 - should have held a **judicial office in the territory of India for at least ten years**;
 - should have been an **advocate in the High Court for at least ten years**.
- **Procedure: Article 217** of the Indian Constitution provides the procedure regarding the appointment of judges in the High Courts.
 - The judges of the High Courts can be appointed **only by the warrant of the President and his seal**.
 - The appointment can be done **only after consulting the Chief Justice of India and the Governor of the State**.
 - The appointment of Judges other than the Chief Justice can be done **after consulting the Chief Justice of the High Court**.
- **Age:** The person can hold the office as a judge until he is **sixty-two years old**.
- **Oath:** The Judges appointed must take an oath before the Governor of the State according to **Article 219**. The oath must be according to the form that is provided for the purpose in the **Third Schedule**.

Collegium System and Memorandum of Procedure

- The procedure agreed upon by the government and the judiciary on appointment of judges, is a crucial document as the **Collegium system of appointing judges is a judicial innovation** that is not mandated through legislation or text of the Constitution.
- The MoP has evolved as the standard based on **three SC decisions – the First Judges Case (1981), Second Judges Case (1993) and the Third Judges Case (1998)** forming the basis of a peer selection process for appointment of judges.
- As per the MoP, the proposal for appointment of a Judge of a High Court shall be initiated by the **High Court Collegium headed by the Chief Justice of the HC**. Once the recommendation is made, the opinion of state governments and the input from the Intelligence Bureau are sought.

- The recommendations are then processed, before they are sent to the **Supreme Court Collegium, which in turn recommends to the central government who then sends it to the President for approval.**

Transfer of Judges in the High Court

- **Article 222** of the Constitution makes provision for the transfer of a Judge (including Chief Justice) from one High Court to any other High Court.
- The initiation of the proposal for the transfer of a Judge should be made by the **Chief Justice of India** whose opinion in this regard is determinative.
- **Consent of a Judge for his first or subsequent transfer would not be required.**
- All transfers are to be made in public interest i.e. for promoting better administration of justice throughout the country.

Overlining Issues

- **Huge vacancy:** As of October 1 2023, **347 posts of high court judges were lying vacant in the 25 high courts** across the country against the **total strength of 1,114**. The vacancy translates to more than **31% of the total strength**.
- **Inordinate delay** by the Centre in processing collegium's recommendations: The Supreme Court recently observed that **collegium's recommendations cannot remain in limbo**, emphasising that instead of sitting on them indefinitely, the government must either notify those appointments or send them back citing specific objections.
- **Tussle between judiciary and the executive:** Lack of consistency in the time taken by the Centre to notify the recommendations creates **"issues of faith" between the judiciary and the executive.**

Way Ahead

- Judges are the most important part of the judicial system. The **appointment of Judges must be done properly and in a time bound manner.**
- The Judges **should not be transferred unnecessarily and the transfer must be done only in a public interest** not for personal and political reasons.

Source: [HT](#)

Large Language Models & NDTSP

Syllabus: GS3/Economy, Science and Technology

Context:

- India aims to build [Large Language Models \(LLMs\)](#) for Indian languages.

- LLMs are a **cornerstone technology** underlying several ‘intelligent’ software and make possible applications such as ChatGPT.

Significance of LLMs for India

- Deep Technology refers to innovations founded on advanced scientific and technological breakthroughs. Due to their disruptive nature, they have the potential to solve India’s most pressing societal issues. These include:
 - **Preserving and promoting linguistic diversity** and enhancing cultural representation;
 - Improving accessibility and **reducing the digital divide** and fostering greater inclusivity;
 - **Supporting local businesses** by the development of language-specific applications and services to support unique regional needs;
 - **National Security**, by allowing better control over data and technology domestically.

Draft National Deep Tech Startup Policy (NDTSP)

- Acknowledging the key significance of deep technology in propelling innovation, economic growth, and societal development, the NDTSP lays the foundation for India's emerging Deep Tech Startup ecosystem.
- The purpose of the policy is to ‘**ensure India’s position in the global deep tech value chain**’, in areas such as semiconductors, artificial intelligence, and space technology.
- It is strategically formulated to stimulate innovation, spur economic growth, and promote societal development through the effective utilisation of deep tech research-driven innovations.
- This policy aims to significantly strengthen India's capabilities and enhance global competitiveness.

Pillars of NDTSP:

- Ensuring the Security of India's Economic Future;
- Facilitating a Seamless Transition to a Knowledge-Driven Economy
- Bolstering National Capability and Sovereignty through the Atma Nirbhar Bharat Imperative;
- Fostering Ethical Innovation.

What are the priorities under NDTSP?

- R&D and Innovation
- Intellectual Property
- Funding
- Infrastructure
- Create a conducive regulatory environment for innovations.
- Diversity & Capacity Building
- Adoption
- Policy Interlinkages

Collaborations on LLM Models

- Large language models are a subset of generative AI, which is the “new big thing” in technology right now. Large tech companies such as Meta, Google, IBM have their own LLM models.
 - However, India does not have any major presence in this space.
- **The Initiative on Critical and Emerging Technology (iCET):** Governments, businesses, and academic institutions to realise their shared vision for the strategic technology partnership.
 - It focused on an open, accessible, and secure technology ecosystem, based on mutual confidence and trust that reinforces our shared values and democratic institutions.

Way Forward

- LLMs exist in the world in the form of applications. However, in an Indian context, cultural diversity is one of the biggest challenges we face. The services should be available in all Indian languages, even for people who do not have access to technology.

[Source: TH](#)

Minimum Support Prices for Rabi Crops

Syllabus:GS3/ Economy and Agriculture

News

- The Cabinet Committee on Economic Affairs (CACP), has approved the increase in the Minimum Support Prices (MSP) for all mandated Rabi Crops for Marketing Season 2024-25.

About

- The increase in MSP for mandated Rabi Crops for Marketing **Season 2024-25** is in line with the **Union Budget 2018-19** announcement of fixing the MSP at a level of at **least 1.5 times of the All-India weighted average Cost of Production.**
- The expected margin over All-India weighted average Cost of Production is 102 percent for wheat, followed by 98 percent for rapeseed & mustard; 89 percent for lentil; 60 percent for gram; 60 percent for barley; and 52 percent for safflower.

What is MSP?

- **Minimum Support Price (MSP)** is a form of market intervention by the Government of India to insure agricultural producers against any sharp fall in farm prices.MSP protects the producer- farmers against distress sale during bumper production years.
- **MSPs have no statutory backing** — a farmer cannot demand MSP as a matter of right.

Crops Covered

- The Centre announces the **MSP for 22** mandated crops.These include:
 - **14 kharif crops** (paddy, jowar, bajra, maize, ragi, tur/arhar, moong, urad, groundnut, soyabean, sunflower, sesamum, niger seed, cotton),

- **6 rabi crops** (wheat, barley, gram, masur/lentil, rapeseed and mustard, and safflower) and
- **2 commercial crops** (jute and copra).
- In addition, **MSP for Toria and de-husked coconut** is also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

Fair and Remunerative Price (FRP)

- FRP is the minimum price at which the sugar mills purchase sugarcane from farmers.
- The Cabinet Committee of Economic Affairs announces the FRP on the recommendations of CACP.

Who decides what the MSP would be and how?

- The Cabinet Committee of Economic Affairs announces the MSP at the start of each sowing season, taking into account the recommendations of the Commission for Agricultural Costs and Prices (CACP).
- While recommending MSPs, the CACP looks at following factors:
 - the demand and supply of a commodity;
 - its cost of production;
 - the market price trends (both domestic and international);
 - inter-crop price parity;
 - the terms of trade between agriculture and non-agriculture (that is, the ratio of prices of farm inputs and farm outputs);
 - a minimum of 50 per cent as the margin over the cost of production; and
 - the likely implications of an MSP on consumers of that product.

Calculation Formula

- The CACP does not do any field-based cost estimates itself. It makes projections using state-wise, crop-specific production cost estimates provided by the Directorate of Economics & Statistics in the Agriculture Ministry.
- The CACP calculates three types of costs — **A2, A2+FL and C2** — for each mandated crop for different states.
 - **A2 cost:** It is the lowest and covers all paid-out costs directly incurred by the farmer — in cash and kind — on seeds, fertilizers, pesticides, hired labor, leased-in land, fuel, irrigation, etc.
 - **A2+FL cost:** It includes A2 plus an imputed value of unpaid family labor.
 - **C2 cost:** It is the highest of the three costs and defined as a more comprehensive cost that factors in rentals and interest for owned land and fixed capital assets, on top of A2+FL.
- The National Commission for Farmers, chaired by **MS Swaminathan**, had recommended MSP under the **C2+50 percent formula**. That is, the total cost of the crop (C2) and the profit thereon is **50 percent**. However, the government announces **MSP on the basis of A2+FL**.

Source: [TH](#)

White phosphorus

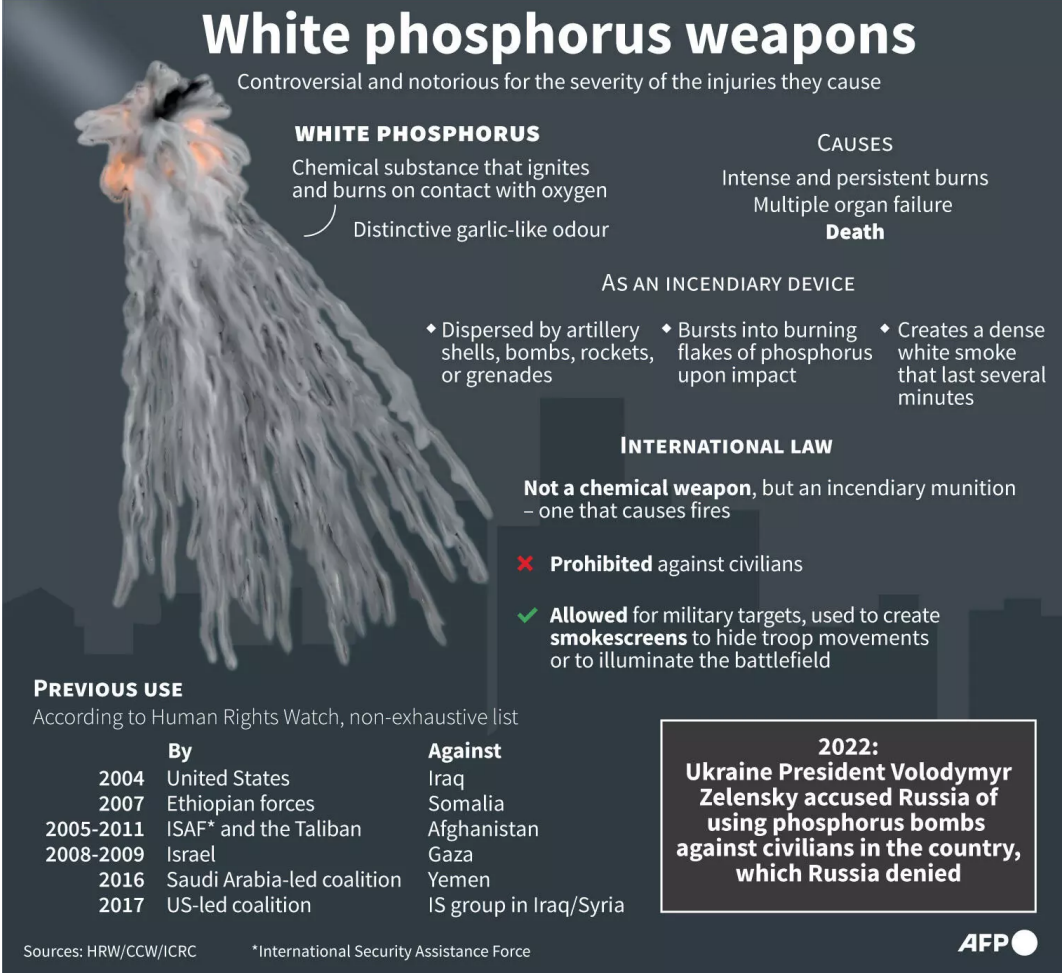
Syllabus:GS2/IR, GS3/Science and Technology

News

- Amnesty International and Human Rights Watch (HRW) have accused the Israel Defense Forces (IDF) of using white phosphorus munitions in Gaza and Lebanon.

What is white phosphorus?

- **White phosphorus** is a pyrophoric that ignites when exposed to oxygen, producing thick, light smoke as well as intense 815-degree Celsius heat. White phosphorus emits a distinct garlic-like odor.
- **Pyrophoric substances** are those which ignite spontaneously or very quickly when in contact with air.
- Under the **Globally Harmonized System of Classification and Labeling of Chemicals**, the internationally agreed-upon system to standardize chemical hazard classification and communication, white phosphorus falls under “**Pyrophoric solids, category 1**”, which includes chemicals that catch fire “spontaneously” when exposed to air.



White phosphorus weapons

Controversial and notorious for the severity of the injuries they cause

WHITE PHOSPHORUS

Chemical substance that ignites and burns on contact with oxygen

Distinctive garlic-like odour

CAUSES

Intense and persistent burns
Multiple organ failure
Death

AS AN INCENDIARY DEVICE

- ♦ Dispersed by artillery shells, bombs, rockets, or grenades
- ♦ Bursts into burning flakes of phosphorus upon impact
- ♦ Creates a dense white smoke that lasts several minutes

INTERNATIONAL LAW

Not a chemical weapon, but an incendiary munition – one that causes fires

- ✗ **Prohibited** against civilians
- ✓ **Allowed** for military targets, used to create **smokescreens** to hide troop movements or to illuminate the battlefield

PREVIOUS USE

According to Human Rights Watch, non-exhaustive list

	By	Against
2004	United States	Iraq
2007	Ethiopian forces	Somalia
2005-2011	ISAF* and the Taliban	Afghanistan
2008-2009	Israel	Gaza
2016	Saudi Arabia-led coalition	Yemen
2017	US-led coalition	IS group in Iraq/Syria

2022:
Ukraine President Volodymyr Zelensky accused Russia of using phosphorus bombs against civilians in the country, which Russia denied

Sources: HRW/CCW/ICRC *International Security Assistance Force

AFP

Military uses of white phosphorus

- White phosphorus is dispersed in artillery shells, bombs, and rockets. The Munitions can either be ground-burst for more concentrated smoke, or air-burst in order to cover a larger area.
- It is used as a **smokescreen** to hide troop movement on the ground. The smoke acts as a visual obscurant. White phosphorus is also known to mess with infrared optics and weapons tracking systems, thus protecting forces from guided missiles.
- White phosphorus can also be used as an **incendiary weapon**.

How harmful is white phosphorus?

- Upon exposure, white phosphorus can cause severe burns, often down to the bone. The burns are difficult to heal, and susceptible to infections. Particles of white phosphorus that remain lodged in the body can reignite if in contact with air.
- Inhaling white phosphorus particles or smoke can cause respiratory damage and harm to internal organs.
- White phosphorus can also devastate infrastructure and property, damage crops and kill livestock, with raging fires, especially in windy conditions.

First use of White phosphorus munitions

- Irish nationalists in the late 19th century first used white phosphorus munitions, in a formulation known as “Fenian fire”. World War I and World War II.
- The US invasion of Iraq in 2004 and the Nagorno-Karabakh conflict have also witnessed the use of White phosphorus.

Legal status of white phosphorus munitions

- The use of white phosphorus is regulated under the International humanitarian law (IHL). However there is no blanket ban on White phosphorus munitions. It is not considered a chemical weapon because its operational utility is primarily due to heat and smoke, rather than toxicity.
- The use of white phosphorus is governed by the **Convention on Conventional Weapons (CCW)**, specifically **Protocol III**, which deals with incendiary weapons. Palestine and Lebanon have joined Protocol III, while Israel has not ratified the protocol.
- **Protocol III of CCW**, prohibits the use of airdropped incendiary weapons in “concentrations of civilians”. As per HRW, it has two significant loopholes.
 - **First**, it restricts some but not all use of ground-launched incendiary weapons where there are concentrations of civilians.
 - **Second**, the protocol’s definition of incendiary weapons covers weapons that are “primarily designed” to set fire to and burn people, and thus arguably excludes multipurpose munitions such as those containing white phosphorus, which are considered to primarily be “smoking” agents.

Source: [IE](#)

Quantum Algorithms

Syllabus: GS3/ Awareness in various S&T fields

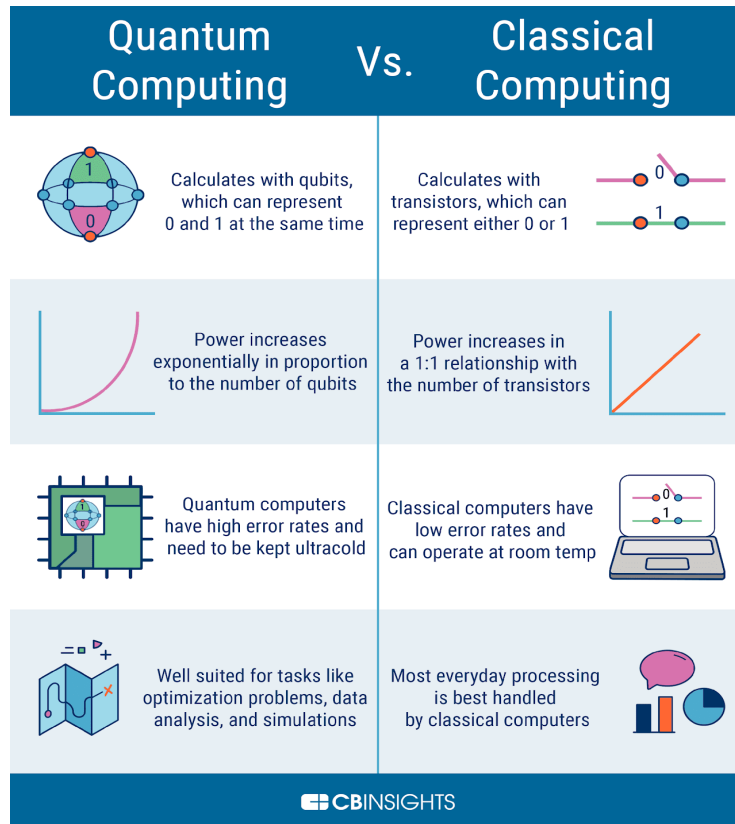
In Context

- We often hear that **quantum computers** efficiently solve problems that are very difficult to solve with a **classical computer**.
 - However, harnessing the full potential of quantum computing isn't just about having the hardware, it requires the development of **clever quantum algorithms**.

What is Quantum Computing?

- **Quantum computing** uses phenomena in **quantum physics** to create new ways of computing.
- Quantum computing **involves qubits**.
- Unlike a normal computer bit, which can be **either 0 or 1**, a **qubit** can exist in a multidimensional state.
- The power of quantum computers grows exponentially **with more qubits**.
- Classical computers that add more bits can increase power only linearly.

Quantum Computer vs. Classical Computer



What is an Algorithm?

- An algorithm is a sequence of logically connected mathematical steps that solve a problem.
- **For Example:** an algorithm to add three numbers can have two steps: add the first two numbers in the first step and the result to the third number in the second step.

Quantum v. classical algorithms

- A quantum algorithm has a series of steps, but its **implementation requires quantum gates**. Unlike classical bits, qubits can exist in states of both 0 and 1 simultaneously, allowing quantum algorithms to exploit superposition for speed-up.
- One factor that controls this speed-up is the possibility of superposition of the states of quantum bits, or qubits, that encode information. Whereas a classical computer uses semiconductor-based gadgets as bits to encode information, quantum computers use qubits.

Shor's Algorithm

- One of the earliest quantum algorithms is the factorisation algorithm developed by **Peter Shor**. It requires fewer steps to factorise a number than one that operates with classical principles.

- Shor's algorithm identifies the factors of a given integer. For example, 2 is a factor of 20 (since 2 divides 20 without a remainder). Similarly, 4, 5, and 10 are also factors of 20.
- Shor's algorithm operates with a polynomial increase in steps, while classical algorithms exhibit superpolynomial growth.

Grover's Algorithm

- The quantum algorithm will require only a thousand steps, however. In fact, for every 100x increase in the list's size, Grover's algorithm will need only 10x more steps.
- Classical methods may require nearly half the number of steps as there are patterns, while Grover's quantum algorithm drastically reduces the steps required.

Conclusion

- The quantum algorithms can solve problems in optimisation, drug design, and pattern search, among other fields more efficiently.
- When reliable, large-scale devices become available, quantum computing will help address many otherwise intractable problems as well.
- Research in quantum algorithms is highly interdisciplinary, involving computer science, mathematics, and physics. The field is also still evolving, and there are plenty of opportunities to make significant contributions.

Source: [TH](#)

Facts In News

KatiBihu

Syllabus:GS1/Culture

News

- The harvest festival of Kathi Bihu is observed on the first day of the Kati month in the Assamese calendar.

About

- **Kathi Bihu** is marked annually on the first day of the **Kati month** in the Assamese calendar. The festival is also known as **Kongali Bihu**.
- **Significance:** It marks a crucial phase of the year for every farmer's family in Assam - the fresh start of the harvest season and the relocation time of rice saplings.
- There are another two Bihu festivals celebrated
 - **Bhogali or Magh Bihu:** It is observed in the month **January**.
 - **Rongali or Bohag Bihu:** It is observed in the month of **April**.

Source: [PIB](#)

Fourth Krishi Roadmap of Bihar

Syllabus: GS-3/Economy

Context

- The President of India launched the **fourth Krishi Road Map (2023-2028)** of Bihar.

About the roadmap

- The Road Map will give a **boost to agricultural production** in the State, while also **focusing on increasing farmers' income** in the next **five years**.
- It also focuses on the **storage, processing, and expansion of seed** and **irrigation** along with **crop diversification** as well as **revamping agriculture marketing**.
- The construction of an **organic corridor** on the banks of the river Ganga is being used for **organic farming**.

Some Important Facts

- The government of Bihar has been implementing the Agriculture Road Map **since 2008**.
- The first Agriculture Road Map was launched in **2008**, followed by another in **2012** and a **third in 2017**.
- The implementation of the **last three agricultural road maps** has almost **doubled the productivity of paddy, wheat, and maize** in the state.
- It has become a leading state in the production of **mushrooms, honey, makhana, and fish**.
- **Ethanol** is also being produced in Bihar.

Source: [TH](#)

Operation Nanhe Farishtey of RPF

Syllabus: GS-2/Governance, Government Initiatives

Context:

- Under the **Operation 'Nanhe Faristey'**, RPF played an important role in reuniting the children lost or separated due to several reasons from their family.

Railway Protection Force (RPF)

- Constituted as a federal Force in the year **1957**, RPF is responsible for the **security of railway property, and passenger and passenger zones**.
- RPF motto: **"SEWA HI SANKALP"– "A PROMISE TO SERVE"**.
- It has been implementing innovative solutions suited to the typical needs at the **ground-zero level**.
- RPF has the distinction of being the federal force of India with the largest share of women in its ranks.

Other Operations conducted by RPF

- **Human Trafficking & Operation AAHT:** In order to counter Human traffickers, **Anti Human Trafficking Units** of RPF are operational at the Post level (Thana level) over the Indian Railways.
- **Operation “Jeevan Raksha”:** Due to alertness and swift action by RPF, the lives of various passengers were saved, who had come close to getting run over by trains, at platforms and railway tracks.
- **Women Security (Meri Saheli Initiative):** It has been launched to provide security to lady passengers in long-distance trains, particularly those traveling alone or those who are vulnerable to crime.
- **Action against touts & Operation “Uplabdh”:** In this, various touts were arrested and legal action was taken against them as per law.
- **Operation “NARCOS”:** Many accused have been arrested along with the seizure of **Narcotic Drugs and Psychotropic Substances (NDPS)** valued at Rs.2.65 Crores and the arrested criminals were handed over to empowered agencies for further legal action.
- **Emergency Response & Operation ‘Yatri Suraksha’:** In order to redress security-related complaints of passengers in distress and for immediate assistance, passengers can make complaints on the Rail Madad Portal or through helpline No. 139.

Source: [PIB](#)

Tribal Youth Exchange Program (TYEP)

Syllabus: GS-2/Society

Context

- The Union Home Minister interacted with tribal youth under the **Tribal Youth Exchange Program (TYEP)**.

About

- The main focus was to encourage them to eradicate the **idea of Naxalism** and the **ideology of Left-Wing Extremists (LWEs)** from the country as it is against development and a bright future.
- Moreover, **10 tribal museums** would be built across the country in memory of tribal freedom fighters.
- The tribal youth from various states like **Bijapur, Sukma, Bastar, Dantewada, Kanker, Narayanpur, and Rajnandgaon of Chhattisgarh, Balaghat, Madhya Pradesh;** were present at the event.

About Tribal Youth Exchange Program (TYEP)

- **Nehru Yuva Kendra Sangathan** has been organizing the Tribal Youth Exchange Programme since **2006** for the development and mainstreaming of

Tribal Youth in collaboration and financial support from the Department of Left Wing Extremism (LWE).

- The aim of this program is **to sensitize LWE Tribal Youth to the Rich Cultural Heritage of India.**

Source: [IE](#)

Phase III Of Yuva Sangam

Syllabus: GS-2/Governance

Context

- Recently, the registration portal for Phase III of Yuva Sangam, under **Ek Bharat Shreshtha Bharat (EBSB)**, was launched.

About the Yuva Sangam Initiative

- It was launched under **Ek Bharat Shreshtha Bharat (EBSB)** to strengthen people-to-people connect between youth belonging to **different States/UTs in the country.**
- **Origin:** The concept of sustained and structured cultural connections between people of different regions was introduced during **Rashtriya Ekta Diwas in 2015.**
- **Eligibility:** Youngsters between the age of **18-30 years.**
 - It is designed for youth from various segments including **Students, NSS (National Service Scheme)/NYKS (Nehru Yuva Kendra Sangathan), volunteers, employed individuals, self-employed individuals, etc.**
- **Significance:**
 - The youth will receive comprehensive exposure in five key areas: **Paryatan** (Tourism), **Parampara** (Traditions), **Pragati** (Development), **Paraspar Sampark** (People-to-People Connect), and **Prodyogiki** (Technology).
 - Under this initiative, the youngsters will get familiar with the culture, traditions, and technological advancements of the various states they will visit.

Source: [PIB](#)

Bamboo for Landslides Prevention

Syllabus: GS3/ Conservation

In Context

- The Kerala Forest department is planning to plant bamboo and **bamboo creeper along the Gap Road stretch** of the **Kochi-Dhanushkodi National Highway** in Munnar to prevent repeated landslips.

- In 2017, the Government amended the **Indian Forest Act to categorise bamboo as grass**. Now there is no prohibition on growing or cutting bamboo trees even outside the forests.

Benefits

- Bamboo and creeper bamboo will penetrate four to five feet deep into the soil and will ensure strong protection to the soil. It will also prevent future landslips in the area.
- If bamboo and reed bamboo are planted, it will ensure food security for wild elephants in the area.

About Bamboo

- This tree, which comes from the grass family, is known as a **poor man's timber and green gold**.
- It grows fast and requires low maintenance.
- There are 110 different species of bamboo **found in North East India**.

Other Related Facts

- The **National Bamboo mission** was launched in 2018-19 to promote the growth of the bamboo sector by an area based regionally differentiated strategy. It is a **centrally sponsored scheme** (implemented by the state government but sponsored by the central government).
- **World Bamboo Day** is observed on 18th September every year.

Source: [TH](#)

Renewable Energy Project in Ladakh

Syllabus: GS3/Economy

In News

- The **Cabinet Committee on Economic Affairs**, approved the project on **Green Energy Corridor (GEC) Phase-II – Inter-State Transmission System (ISTS) for 13 GW Renewable Energy Project in Ladakh**.

Background

- The Prime Minister, during his Independence Day Speech in 2020, announced the setting **up of 7.5 GW Solar Park in Ladakh**.
- After extensive field survey, the Ministry of New and Renewable Energy (MNRE) prepared a plan to set up **13 GW Renewable Energy (RE) generation capacity** along with 12 GWh Battery Energy Storage System (BESS) in Pang, Ladakh.
- For evacuating the huge quantum of power, it will be **necessary to create an inter-state transmission infrastructure**.

About the Project

- The project is targeted to be set up by **FY 2029-30** with Central Financial Assistance (CFA) @ 40 percent of the project cost.

- **Power Grid Corporation of India Limited (POWERGRID)** will be the **Implementing Agency** for this project.
- The transmission line for evacuating this power will pass through **Himachal Pradesh and Punjab up to Kaithal in Haryana**, where it will be **integrated with the National Grid**.
- This project is in **addition to Intra-State Transmission System Green Energy Corridor Phase-II (InSTS GEC-II)**, which is already under implementation in the **States of Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu and Uttar Pradesh**.

Significance

- The project will contribute to achieving the target of **500 GW of installed electricity capacity from non-fossil fuels by year 2030**.
- The project will also help in **developing long term energy security** of the country and promote **ecologically sustainable growth** by reducing carbon footprint.
- It will generate **large direct & indirect employment opportunities** for both skilled and unskilled personnel in power and other related sectors, especially in Ladakh region.

Source: [PIB](#)

MQ-9B

Syllabus: Prelims/Current Events of national importance

News:

- The 31 **MQ-9B Unmanned Aerial Vehicles (UAVs) deal** with the **U.S.** is expected to be concluded by February 2024 and deliveries will begin from February 2027.

About

- This sets the stage for the **acquisition of 31** of these armed UAVs, **15 SeaGuardians for the Indian Navy and 16 SkyGuardians — eight each for the Indian Army and Air Force**.
- As part of this plan, General Atomics (GA) is scheduled to establish a global Maintenance, Repair, and Overhaul (MRO) facility in India.

MQ-9B



- MQ-9B is a **High Altitude Long Endurance (HALE) Unmanned Aerial Vehicle(UAV)**.
- MQ-9B is designed to **fly over the horizon via satellite for up to 40 hours**, depending on configuration, **in all types of weather and safely integrate into civil airspace**.
- The SeaGuardian configuration can include a **360-degree surface-search maritime radar, automatic identification system, sonobuoy monitoring system, and sonobuoy dispensers** for persistent anti-surface and anti-submarine warfare missions.

Applications:

- According to General Atomics, the MQ-9B can provide roughly **80% of the capability of a large human-flown maritime patrol aircraft at about 20% of its cost per hour**.
- For the Army and Air Force, the MQ-9Bs can provide **round-the-clock surveillance looking far beyond the borders**.
- It also **seamlessly integrates with other U.S.-origin platforms that India operates**, the P-8Is, AH-64 Apache attack helicopters, MH-60R multi-role helicopters among others expanding MQ-9B's multi-domain mission set.
- Thus, MQ-9B is expected to **significantly boost the Intelligence, Surveillance and Reconnaissance (ISR) capabilities** of the Indian armed forces.

Source: [TH](#)

Egypt

Syllabus: Places in News
In News

- Recently, Egypt became the first country to achieve **“gold tier” status** on the path to elimination of **hepatitis C as per the WHO’s criteria.**

About Egypt

- The Arab Republic of Egypt is located in the north-eastern corner of Africa and south-western Asia.
- It is bounded on the north by the **Mediterranean Sea**, on the east by **Palestine and Israel**, on the south by Sudan, and on the west by Libya.
- Capital: Cairo**
- The highest point is Catharine Mountain that is 8,668 feet high. The lowest point is Qattara Depression and is 436 feet below sea level.
- The Nile Delta is the only delta in Egypt.



Gaza Strip

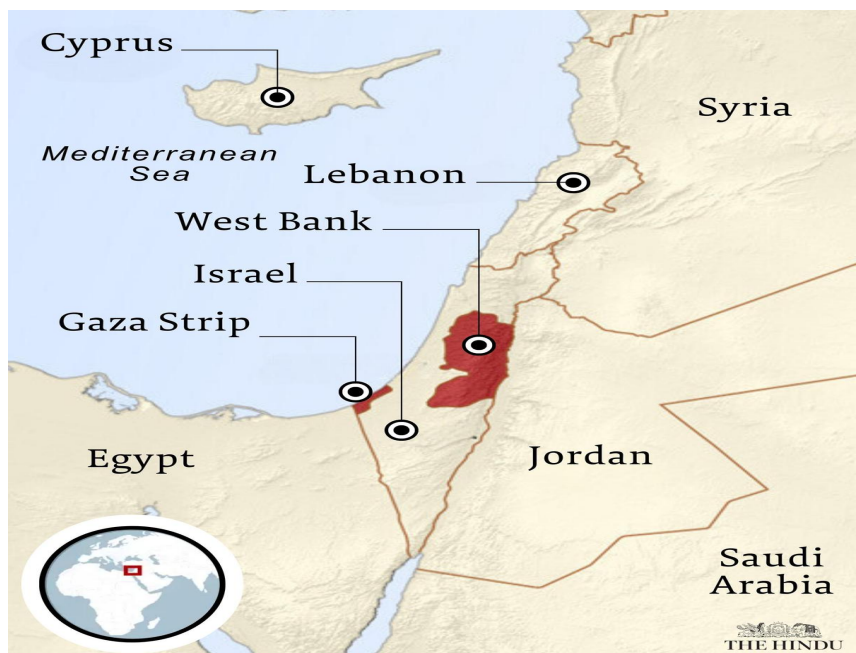
Syllabus: Places in News

In News

- Israel began bombing Gaza after a Hamas attack that left more than 1,300 Israelis dead.

About Gaza Strip

- The Gaza Strip is situated on a relatively flat coastal plain and it is one of most densely populated places on earth, with some 2 million people.
- It is surrounded on two sides by **Israel and borders the Mediterranean Sea** and Egypt.
 - It is a densely populated Palestinian enclave on the eastern coast of the Mediterranean Sea .
- Hamas, an **Arab acronym for Islamic Resistance Movement**, has controlled Gaza since 2007.



- It has been under blockade since Hamas seized control and The Israeli air, naval and land blockade on the territory, as well as the Egyptian land blockade, continue today.