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for ALL CIVIL SERVICES EXAMINATIONS

SEPTEMBER 2022

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- TRADITIONAL RAINWATER HARVESTING
- CENTRAL ASIAN CONFLICTS
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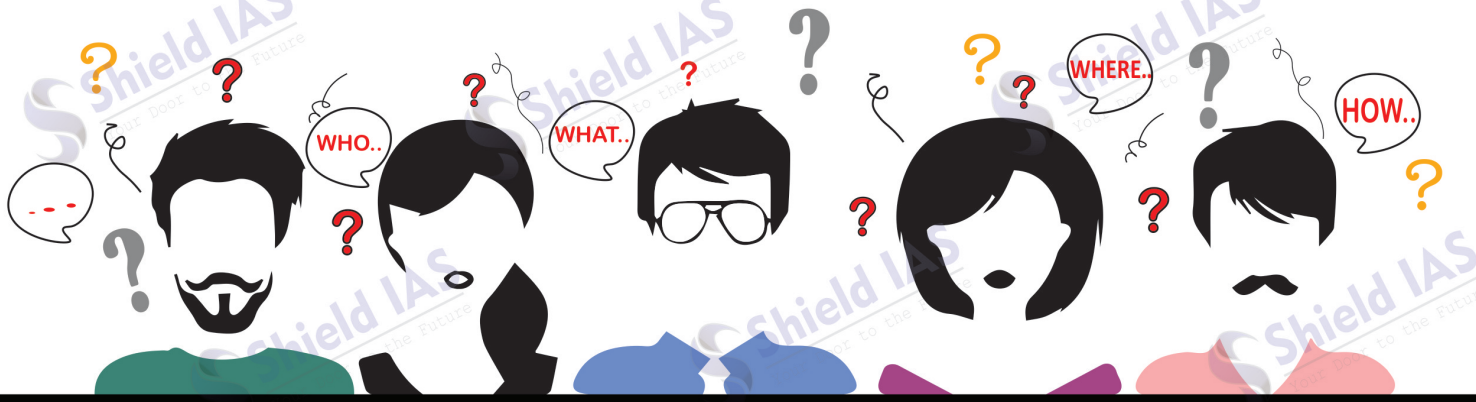
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INTERNATIONAL RELATIONS

(Geopolitics; India and the World; India and it's Neighbourhood)

ARMENIA AND AZERBAIJAN

News: *In the period of ongoing war between Russia and Ukraine, the* recent violent border clashes between Armenia and Azerbaijan have raised fears of another war in the Caucasus.



The bone of contention is the Nagorno-Karabakh region.

- **South Caucasus or Transcaucasia** is a region on the southern Caucasus Mountains on the border of Eastern Europe and Western Asia. It roughly comprises of the modern countries of Azerbaijan, Armenia and Georgia.

- **Nagorno-Karabakh region** is a mountainous land-locked region in the South Caucasus. It is a forested region and **geographically lies within the boundary of Azerbaijan**.
- The region is also called **Artsakh (chiefly by Armenians).**

- Nagorno-Karabakh lies in the mountainous range of Karabakh.
- Nagorno-Karabakh is **internationally recognised as a part of Azerbaijan**, although it is ruled by the Republic of Artsakh (formerly known as the Republic of Nagorno-Karabakh).
- The Republic of Artsakh is autonomous but controlled by Armenia.
- The major ethnic group of the region is Armenian.

Strategic Significance

- The energy-rich Azerbaijan has built several gas and oil pipelines across the Caucasus (the region between the Black Sea and the Caspian Sea) to Turkey and Europe.
- Some of these pipelines pass close to the conflict zone (within 16 km of the border).
- In an open war between the two countries, the pipelines could be targeted, which would impact energy supplies and may even lead to higher oil prices globally.

Background of the Conflict

- The conflict can be traced back to the pre-Soviet era when the region was at the meeting point of Ottoman, Russian and the Persian empires.

- Once **Azerbaijan and Armenia became Soviet Republics in 1921**, Russia (erstwhile Soviet Union) gave Nagorno-Karabakh to Azerbaijan but offered autonomy to the contested region.
- In the 1980s, when the Soviet power was receding, separatist currents picked up in Nagorno-Karabakh.
- In 1988, the national assembly voted to dissolve the region's autonomous status and join Armenia.
- However, Azerbaijan suppressed such calls, which led to a military conflict.
- The **self-declaration of independence by Nagorno-Karabakh in September 1991** in the backdrop of an imminent collapse of the USSR resulted in a war between Azerbaijan and Nagorno-Karabakh — supported by Armenia.
- This clash lasted till a ceasefire agreement was reached in 1994, mediated largely by Russia. Since then, the **Organization for Security and Co-operation in Europe (OSCE) Minsk Group** co-chaired by the USA, Russia and France have engaged Azerbaijan and Armenia extensively to resolve the conflict.
- By that time, Armenia had taken control of Nagorno-Karabakh and handed it to Armenian rebels.

Minsk Group

- The Minsk Group or the OSCE Minsk Group was **established in 1992** by the Conference on Security and Cooperation (CSCE, now Organization for Security and Co-operation in Europe (OSCE)) to envisage a peaceful, negotiated resolution to the Nagorno-Karabakh conflict between Azerbaijan and Armenia.
- It is **co-chaired by** France, Russia and the USA.
- **Permanent members of the group**: Azerbaijan, Armenia, Belarus, Germany, Italy, Sweden, Finland, Turkey
- One of the criticisms of the group is that although it is supposed to be neutral, it is co-chaired by the US, Russia and France – all countries with **huge Armenian diasporas**. Because of this reason, the group is said to be soft on Armenia.
- Despite the UN's calls for Armenian forces to withdraw, the Minsk Group does not actively endorse an Armenian withdrawal from the region.
- It is also said that apart from mere lip-service in the form of calls for a ceasefire and the condemnation of the clashes between both sides, the group does nothing substantial to find a lasting solution to the crisis.

Reasons for regular conflicts

First, the issue of delineating the shared international border.	○ Following the 2020 agreement, a substantial amount of territory was handed over from Armenian Karabakh to Azerbaijan making the once soft border between Armenia and Nagorno-Karabakh, a hard international border. ○ However, Armenia and Azerbaijan have never agreed upon a boundary between them in the past and the 2020 ceasefire statement did not make it clear on how exactly the border should be drawn out.
Second, the	○ The overland route that goes from **Stepanakert (a city within the**

dispute over transport routes.	**Nagorno-Karabakh region) to Armenia** has become an issue between the two countries. o The 2020 agreement states that the parties should build an alternative road within three years. o Presently, there is only one road which is the Lachin corridor, which runs past the outposts through Azerbaijan's mountainous Lachin region to Shusha, which Azerbaijani forces retook in the 2020 war. o The construction of the road would allow Azerbaijan to take back control of Lachin city and surrounding areas. However, Azerbaijan has accused Armenia of stalling operations of laying its several-kilometre section of the new road.
Third, the difference over the status of Nagorno-Karabakh.	o The ethnically Armenian enclave of Nagorno-Karabakh, which is also known as the Republic of Artsakh, has expressed frustration over Armenia's willingness to make concessions to Azerbaijan as part of a larger prospective peace settlement. o While Armenia supports the aspirations for independence of Nagorno-Karabakh, Azerbaijan seeks to preserve its national and territorial integrity.
Fourth, the dispute over the exchange of prisoners.	o The two sides were to exchange prisoners of war, hostages and other detained persons, and dead bodies. o While there has been a series of prisoner exchanges in the last two years, the Azerbaijan side still has many captives while Armenia has just a few.

KYRGYZSTAN AND TAJIKISTAN

News: *Many people have been killed and scores injured in violent border clashes between Kyrgyzstan and Tajikistan. The Batken region of Kyrgyzstan is seeing families being moved out and getting relocated.*

Origins of the conflict

- The conflicts replay **previous pre- and post-Soviet legacies**.
- Under the direction of **Joseph Stalin**, the boundaries of the two republics were established.
- In the past, the populations of Kyrgyzstan and Tajikistan **shared rights to natural resources**.
- **Large-scale livestock transfers** to collective and state farms occurred during the Soviet Union's establishment, upsetting the status quo.
- There was, regrettably, only so much acreage to go around.
- As the number of animals in the **Tajik territory of Batken** increased and grazing area became more scarce, agreements were made between the two populations on the use of Kyrgyz territory by the Tajiks' livestock.
- The **border delineation** debate is a holdover from the Soviet era.
- The map that should be used for demarcation purposes remains one of the key sources of contention, despite attempts to resolve the matter through regular negotiations.

- Nearly half of its roughly 1000 kilometre border is up for debate.



Current flare-up

- The ideological basis of the current set of clashes is reinforced by developmental issues, thus providing a fertile ground for the entire geopolitical space to become a hotbed of multiple minor conflicts and clashes.
- The environmental trajectory of the conflict can be further highlighted by incidents which saw groups from either side planting trees in disputed areas and engaging in a physical confrontation using agricultural equipment as weapons.
- **Ferghana valley continues to be a site of struggle** and frequent violent outbursts, with the location consisting primarily of Tajiks, Kyrgyz, and Uzbeks, who have historically shared common sociological specificities, economic activities, and religious practices.
- The **collapse of the Soviet Union** and the s**ubsequent dissolution of the then-existing water and land agreements** saw the creation of multiple smaller independent farms, which led to a marked increase in water consumption patterns among the farmers.

- Both countries share multiple water channels with undulating trajectories and flow, which upset equitable access to water on both sides.
- As a result, small-scale **conflicts occur practically every year** during the crucial irrigation period.

Significance of this region for India

- India has a very wide array of interests in Central Asia covering security, energy, economic opportunities etc., therefore security, stability and prosperity of Central Asia is imperative for peace and economic development of India.
- Central Asia **serves as a land bridge between Asia and Europe**, making it geopolitically axial for India.
- The region is **rich in natural resources** such as petroleum, natural gas, antimony, aluminium, gold, silver, coal and uranium which can be best utilized by Indian energy requirements.
- Central Asia **has huge cultivable areas lying barren** and without being put to any productive use, offering enormous opportunity for cultivation of pulses.
- India intends expansion of **International North South Transport Corridor (INSTC)** to Afghanistan and Uzbekistan. This will act as a vital gateway to access Eurasian markets and optimally operationalize its use, requiring a Central Asian state joining the project as a direct stakeholder.
- India has proposed setting up of **'India-Central Asia Development Group'** to take forward development partnership between India & Central Asian countries. This group will help India to expand its footprints in the resource-rich region amid China's massive inroads and to fight terror effectively, including in Afghanistan.
- Both India and Central Asian Republics (CARs) share many commonalities and perceptions on various regional and world issues and can play a crucial role in providing regional stability.

SCO MEET 2022

News: *The Shanghai Cooperation Organisation (SCO) summit 2022 was held recently in Samarkand, Uzbekistan.* ***Samarkand declaration*** *was signed by the member states.* ***India takes over Presidency of the SCO for 2023****.*

Key highlights of the summit

- The Samarkand declaration advocated **"commitment to peaceful settlement of differences and disputes** between countries through dialogue and consultation".
- They stress that the **principles of mutual respect** for sovereignty, independence, territorial integrity of States, equality, mutual benefit, non- interference in internal affairs, and non-use or threat of use of force are the basis for sustainable development of international relations.
- The member countries are **planning to develop common principles and approaches** to form a unified list of terrorists, separatist and extremist organizations whose activities are prohibited on the territories of the SCO member states.
- Russia is also looking at **more customers for its gas** as Western countries look to cut their dependence on it.

- Russia suggested that the organisation should think about **holding its own big athletic event**.

Indian Perspective

Connectivity	○ India urged to **give each other full right to transit**, as it would enhance connectivity and help in establishing reliable and resilient supply chains in the region.
Food Security	○ As the whole world is facing an unprecedented energy and food crisis, India emphasised the **initiative to promote millet** and address issues related to food security. ○ In this context, India is trying to popularise millets, as SCO can play a big role in **marking 2023 as the International Year of Millets**.
Working Group on Traditional Medicine	○ World Health Organisation (WHO) opened its Global Center for Traditional Medicines in Gujarat in April 2022. ○ This was the first and only worldwide centre for conventional medicine established by the WHO.
Tourism	○ Varanasi was declared as the **SCO Tourism and Cultural Capital for 2022-2023** to promote the rich cultural and historical heritage of the people and the tourism potential of SCO member states. ○ Further, it will promote tourism, cultural and humanitarian exchanges between India and the SCO member Countries. ○ It also underlines India's ancient civilizational links with the Member States of SCO, especially the Central Asian Republics. ○ Under the framework of this major cultural outreach program, a number of events will be hosted in Varanasi during 2022-23.

SRILANKA: 13th CONSTITUTIONAL AMENDMENT

News: *India voiced concern over the "lack of measurable progress" in Sri Lanka's promised political solution to the long-pending Tamil national question,*

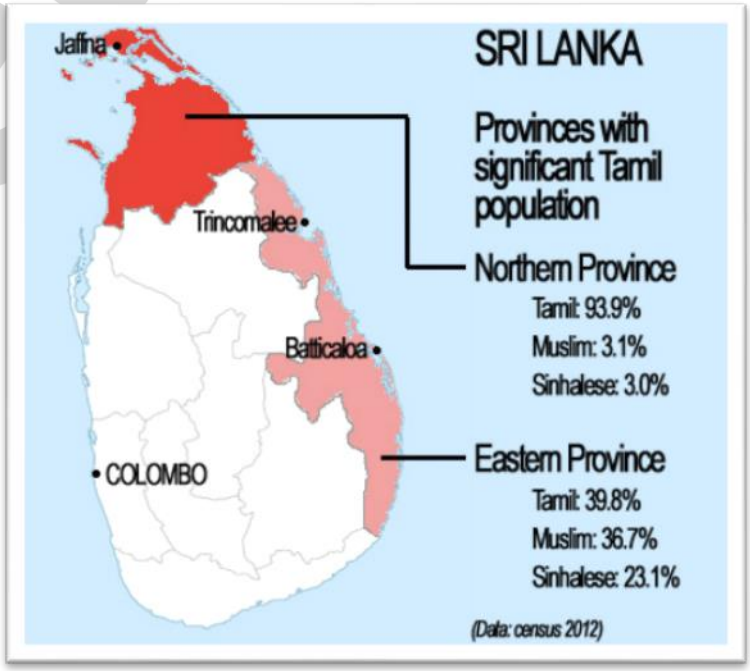
In this regard, the Indian delegation noted with concern the lack of measurable progress by Government of Sri Lanka on their commitments of a political solution to the ethnic issue through ***full implementation of the 13th Amendment*** *of the Constitution, delegation of powers to Provincial Councils and holding of Provincial Council elections at the earliest,*

History of Tamil-Sinhalese conflict

- Great Britain ruled Sri Lanka—then called Ceylon—from **1815 to 1948**.

- In 1815, the population of Ceylon numbered about three million predominantly Buddhist Sinhalese and 300,000 mostly Hindu Tamils.
- Sinhalese ancestors most likely arrived on the island from India in the 500s BCE. Sri Lankan people seem to have been in contact with Tamil speakers from southern India since at least the second century BCE.
- The British established huge cash crop plantations on the island, first of coffee, and later of rubber and tea.
- Colonial officials brought in approximately a million Tamil speakers from India to work as plantation labourers. The British also established schools in the northern, Tamil-majority part of the colony, and ***preferentially appointed Tamils to bureaucratic positions, angering the Sinhalese majority***.
- This was a common divide-and-rule tactic in European colonies that had troubling results in the post-colonial era in places such as Rwanda and Sudan.
- The British granted Ceylon independence in 1948. The Sinhalese majority immediately began to pass laws that discriminated against Tamils, particularly the Indian Tamils brought to the island by the British.
- The ***Ceylon Citizenship Act of 1948 effectively barred Indian Tamils from holding citizenship***, making stateless people out of some 700,000. Over the next three decades more than 300,000 Indian Tamils were deported back to India.
- They made ***Sinhalese the official language***, driving Tamils out of the civil service.
- It wasn't until 2003, 55 years after independence—that all Indian Tamils living in Sri Lanka were granted citizenship, but by this time they only made up 5% of the island's population.

Demand of a separate Tamil State in Sri Lanka



- In the late 1960s documents relating to a separate Tamil state of "Tamil Eelam" began to circulate. At this time **Anton Balasingham**, an employee of the British High Commission in Colombo, began to participate in separatist activities. He later migrated to Britain, where he became the chief theoretician of the LTTE.
- The **LTTE was founded in 1976 by Velupillai Prabhakaran** with the goal of creating an independent Tamil Eelam out of Sri Lanka.
- From clashes with the Sri Lankan military, the LTTE in the early 80s launched a full-scale nationalist insurgency in the north and east of the country, carrying out a string of major terrorist attacks against both military and civilian targets.

- The Tamil Tigers declared the **"First Eelam War" (1983-87).**

13th constitutional Amendment

- It was an **outcome of the Indo-Lanka Accord of July 1987**.
- It mandated a measure of power devolution to the provincial councils established to govern the island's nine provinces.
- It led to the creation of ***Provincial Councils***, assured a power sharing arrangement to enable all nine provinces in the country, including Sinhala majority areas, to self-govern. Subjects such as education, health, agriculture, housing, land and police are devolved to the provincial administrations, but because of restrictions on financial powers and overriding powers given to the President, the provincial administrations have not made much headway. In particular, the provisions relating to police and land have never been implemented.
- It **recognised Tamil as second official language** of Sri Lanka.
- It was opposed vociferously by both Sinhala nationalist parties and the LTTE. The former thought it was too much power to share, while the Tigers deemed it too little. It was **widely perceived as an imposition by a neighbour wielding hegemonic influence.**
- Till date, the 13th Amendment represents the only constitutional provision on the settlement of the long-pending Tamil question. In addition to assuring a measure of devolution, it is considered part of the few significant gains since the 1980s, in the face of growing Sinhala-Buddhist majoritarianism from the time Sri Lanka became independent in 1948.

INDIA AND BANGLADESH

News: *India and Bangladesh have signed seven agreements for cooperation in areas ranging from sharing of river waters to space and unveiled new connectivity and energy initiatives.*

Key Highlights of the Meeting

The two sides have signed Memorandum of Understanding (MoUs), which include:

- The withdrawal of water from the cross-border **Kushiyara river**. The agreement will benefit southern Assam in India and the Sylhet region of Bangladesh.
- Cooperation in **space technology**.
- Collaboration on **Information Technology systems** used by railways in areas such as movement of freight.
- **Science and technology** cooperation.
- **Training** of Bangladesh Railway personnel and Bangladeshi judicial officers in India.
- Cooperation in **broadcasting** between Prasar Bharati and Bangladesh Television.

Thermal Power Project

- The two nations unveiled the first unit of the Maitree super thermal power project being built in Khulna division of Bangladesh with concessional funding from India.

- The unit was synchronized with Bangladesh's power grid in August 2022, and the project will generate 1,320MW, when completed.

Rushpa Rail Bridge

- The 5.13-km Rupsha rail bridge was also inaugurated, a key part of the **64.7-km Khulna-Mongla port broad gauge railway project.**
- The bridge was constructed with an Indian line of credit of $389 million.
- It will increase connectivity with Mongla, Bangladesh's second largest port.

Loans and Advances

- India has provided concessional loans worth USD 9.5 billion for development projects in Bangladesh, which includes:
- Rail connectivity between **Khulna and Dhaka, Chilahati** and **Rajshah.**
- Connecting **Mongla port with Darshana-Gede**.
- The **Parbatipur-Kaunia rail project** to facilitate the transportation of fuel is being built at a cost of USD 120 million.
- Supply of road construction equipment and machinery.

Defence Procurement

- In 2018, India has extended USD 500 million defence Line of Credit (LoC) to Bangladesh.
- In May 2018, Defence public sector undertaking of Kolkata had signed a Memorandum of Understanding with Bangladesh to provide assistance and know-how in the design and construction of warships.
- Dhaka has shared a wish list of military platforms and systems that its armed forces would like to procure from India.
- Bangladesh Army has approved procurement of three items:
- 5 Bridge Layer Tanks (BLT-72) at USD 10 million
- 7 Portable Steel Bridges (Bailey) at USD 2.2 million
- 1 Mine Protective Vehicles at USD 2.2 million.

OHCHR

News: Volker Türk of Austria *replaced Michelle Bachelet as High Commissioner for Human Rights.*

- The Office of the United Nations High Commissioner for Human Rights, commonly known as the **Office of the High Commissioner for Human Rights (OHCHR)** or the United Nations Human Rights Office, is a department of the Secretariat of the United Nations that works to promote and protect human rights that are guaranteed under international law and stipulated in the **Universal Declaration of Human Rights of 1948**.

- The office was established by the **United Nations General Assembly on 20 December 1993** in the wake of the **1993 World Conference on Human Rights**.
- The office is headed by the High Commissioner for Human Rights, who co-ordinates human rights activities throughout the United Nations System and acts as the **secretariat of the Human Rights Council in Geneva, Switzerland.**
- The eighth and current High Commissioner is **Volker Türk of Austria**, who succeeded Michelle Bachelet of Chile on 8 September 2022.
- The High Commissioner for Human Rights is the **principal human rights official** of the United Nations.
- The United Nations High Commissioner for Human Rights is **accountable to the Secretary-General** and is responsible for all the activities of OHCHR, as well as for its administration.

Mandate

- The mandate of OHCHR derives from **Articles 1, 13 and 55** of the Charter of the United Nations, the Vienna Declaration and Programme of Action and General Assembly resolution 48/141 of 20 December 1993, by which the Assembly established the post of United Nations High Commissioner for Human Rights.
- In connection with the programme for reform of the United Nations (A/51/950, para. 79), the OHCHR and the Centre for Human Rights were consolidated into a single OHCHR on 15 September 1997.

Objectives of OHCHR

- Promote **universal enjoyment of all human rights** by giving practical effect to the will and resolve of the world community as expressed by the United Nations
- Play the leading role on human rights issues and **emphasize the importance of human rights** at the international and national levels
- Promote international cooperation for human rights
- Stimulate and coordinate action for human rights throughout the United Nations system
- Promote universal ratification and implementation of international standards
- Assist in the development of new norms
- Support human rights organs and treaty monitoring bodies
- Respond to serious violations of human rights
- Undertake preventive human rights action
- Promote the establishment of national human rights infrastructures
- Undertake human rights field activities and operations
- Provide education, information advisory services and technical assistance in the field of human rights

LOCATIONS, PERSONALITIES AND SPORTS NEWS IN BRIEF

QUEEN ELIZABETH II



- She died on **September 8, 2022, Balmoral Castle,** Aberdeenshire, Scotland.
- Queen Elizabeth II was the **monarch of the United Kingdom of Great Britain** and **Northern Ireland.**
- She assumed the **title of Queen in 1952** after her father's death and reigned for more than 70 years until her death on Sept. 8, 2022, making her the longest-reigning monarch in British history.
- She was also the only female member of the royal family to have entered the armed forces and served in World War II.
- In **2015, she surpassed Victoria to become the longest-reigning monarch** in British history.
- As the **child of a younger son of King George V,** the young Elizabeth had little prospect of acceding to the throne until her uncle, Edward VIII (afterward duke of Windsor), abdicated in her father's favour on December 11, 1936, at which time her father became King George VI and she became heir presumptive.
- She was the **head of Commonwealth of Nations.** Her commitment to the Commonwealth was a constant - she visited every Commonwealth country at least once.
- She is succeeded by her son Charles as King Charles III.

KING CHARLES III



- **King Charles III**, previously known as Prince Charles, is the **new monarch of the United Kingdom and 14 other Commonwealth nations** following the death of Queen Elizabeth II on September 8, 2022.
- These countries, known as the **Commonwealth realms, are**: Australia, Antigua and Barbuda, the Bahamas, Belize, Canada, Grenada, Jamaica, Papua New Guinea, St Christopher and Nevis, St Lucia, St Vincent and the Grenadines, New Zealand, Solomon Islands, Tuvalu.
- In 1969, King Charles III was invested as the Prince of Wales by his mother, Queen Elizabeth II. In 1970, he took a seat in the House of Lords.
- King Charles III **served in the Royal Air Force and the Royal Navy**. It was in March 1971 that Charles flew himself to the Royal Air Force College Cranwell to train as a jet pilot. Following his

training as a jet pilot, he embarked on a naval career and enrolled in a six-week course at the Royal Navy College Dartmouth. He then served on the guided missile destroyer HMS Norfolk and two frigates.

- On **July 29, 1981, the Prince of Wales married Lady Diana Spencer**, and the couple had two sons, Prince Williams, and Prince Harry. Their marriage was, however, dissolved in 1996, and a year later, Princess Diana died in a car crash in Paris.
- **King Charles III remarried in 2005 to Camilla Parker Bowles**, who eventually became the Duchess of Cornwall and will now be known as Queen consort of the United Kingdom.

LIZ TRUSS



- **Mary Elizabeth Truss** (born 26 July 1975) is a British politician who is the current Prime Minister of the United Kingdom and **Leader of the Conservative Party**.
- Truss became Member of Parliament (MP) for South West Norfolk in 2010.
- She held various Cabinet offices under prime ministers David Cameron, Theresa May and Boris Johnson, most recently as Foreign Secretary from 2021 to 2022.
- Truss was the **last of fifteen British prime ministers who served Elizabeth II,** who died on 8 September 2022, two days after appointing Truss to the office.
- Truss won the 2022 Conservative Party leadership election following Johnson's resignation amid a government crisis, becoming the prime minister and forming the Truss ministry. Truss entered office amid an ongoing cost of living crisis and an energy supply crisis. She implemented an Energy Price Guarantee limiting energy prices for households, businesses and public sector organisations.

MIKHAEL GORBACHEV



- **Mikhail Sergeyevich Gorbachev** (2 March 1931 – 30 August 2022) was a Russian and Soviet politician who served as the last leader of the Soviet Union from 1985 to the country's dissolution in 1991.
- Gorbachev **grew up under Stalin's regime**, and experienced German occupation in World War II.
- After the war, he studied law in Moscow and pursued a career in the Communist Party. Journeys abroad gradually made him critical of the inefficient Soviet system, which came under further strain when the Soviet Union invaded Afghanistan in 1979.
- He served as **General Secretary of the Communist Party of the Soviet Union from 1985** and additionally as head of state beginning in 1988, as Chairman of the Presidium of the Supreme Soviet from 1988 to 1989, Chairman of the Supreme Soviet from 1989 to 1990 and the only President of the Soviet Union from 1990 to 1991.

- He sought to reform communism, and introduced the concepts **"glasnost" (openness)** and **"perestroika" (change).**
- Society was liberalized, and Gorbachev sought détente with the USA so as to be able to transfer funding from defence to civil society.
- He **declared that he would not support Communist regimes** in other countries if their peoples were opposed to them. He thus started a chain reaction which led to the fall of communism in Europe.
- He **brought the Cold War to a peaceful end.**
- In 1989 the Berlin Wall fell, and the Cold War between East and West was brought to a halt.
- In **1990,** the Nobel Committee gave President Gorbachev the main credit for this by awarding him the **Peace Prize.**

MICHELLE BACHELET



- On **September 1, 2018 Michelle Bachelet** assumed her functions as the United Nations High Commissioner for Human Rights.
- The **Office of the High Commissioner for Human Rights was established in 1993** and Ms. Bachelet was the seventh Commissioner.
- **Ms. Bachelet was elected President of Chile** on two occasions (2006 – 2010 and 2014 – 2018). She was the first female president of Chile. She served as Health Minister (2000-2002) as well as Chile's and Latin America's first female Defense Minister (2002 – 2004).
- During **her presidential tenures, she promoted the rights of all** but particularly those of the most vulnerable.
- Among her many achievements, education and tax reforms, as well as the creation of the National Institute for Human Rights and the Museum of Memory and Human Rights stand out, as do the establishment of the Ministry of Women and Gender Equality, the adoption of quotas to increase women's political participation, and the approval of Civil Union Act legislation, granting rights to same sex couples and thus, advancing LGBT rights.
- Since the early 1990s, Ms. Bachelet has worked closely with many international organizations. In 2010 she chaired the Social Protection Floor Advisory Group, a joint International Labor Organization (ILO) and World Health Organization (WHO) initiative, which sought to promote social policies to stimulate economic growth and social cohesion.
- **In 2011, she was named the first Director of UN Women**, an organization dedicated to fighting for the rights of women and girls internationally.]
- She pledged to be a **Gender Champion**, committing to advance gender equality in OHCHR and in international fora.
- After finishing her second term in March 2018, she was named **Chair of the Partnership for Maternal, Newborn and Child Health,** an alliance of more than 1000 organizations in 192 countries from the sexual, reproductive, maternal, newborn, child and adolescent health

communities. As Co-Chair of the High-Level Steering Group for Every Woman Every Child, Ms. Bachelet launched **Every Woman Every Child Latin America** and the Caribbean, the first platform for tailored, regional implementation of the EWEC Global Strategy.

- Michelle Bachelet has a Medical Degree in Surgery, with a specialization in Paediatrics and Public Health. She also studied military strategy at Chile's National Academy of Strategy and Policy and at the Inter-American Defence College in the United States.

US OPEN 2022





- The 2022 US Open was the **142nd edition of tennis' US Open** and the fourth and final tennis major (Grand Slam event) of the year.
- It was held on outdoor hard courts at the **USTA Billie Jean King National Tennis Center** in New York City.
- **Carlos Alcaraz** and **Iga Świątek** won the men's and women's singles titles, respectively. They became the first players, both born in the 2000s, to win the tournament's singles titles.
- Carlos Alcaraz Garfia (born 5 May 2003) is a **Spanish professional tennis player**. He is currently ranked as the world No. 1 singles player by the Association of Tennis Professionals (ATP).
- Iga Świątek is a Polish professional tennis player. She is currently ranked world No. 1 by the Women's Tennis Association (WTA).
- Świątek is a three-time major singles champion, having won the French Open in 2020 and 2022 and the US Open in 2022.

- The US Open **starts on the last Monday of August** and continues for two weeks, with the middle weekend coinciding with the US Labor Day holiday.
- Originally known as the **U.S. National Championship**, for which men's singles and men's doubles were first played in **August 1881**.
- It is the **only Grand Slam that was not affected** by cancellation of World War I and World War II, or get interrupted by the COVID-19 pandemic in 2020.
- In 1970, the **US Open became the first Grand Slam tournament to use a tiebreaker** to decide a set that reached a 6–6 score in games.
- In 1973, the **US Open became the first Grand Slam tournament to award equal prize money** to men and women

ATP MEN'S RANKINGS

- The Pepperstone ATP rankingsare the merit-based method used by the Association of Tennis Professionals (ATP) for determining the **qualification for entry as well as the seeding of players** in all singles and doubles tournaments.
- The **first rankings for singles were published on 23 August 1973** while the doubles players were ranked for the **first time on 1 March 1976.**
- **Ranking points are awarded according to the stage of tournament reached**, and the **prestige** of the tournament, with the four Grand Slam tournaments awarding the most points.
- The **rankings are updated every Monday**, and points are dropped 52 weeks after being awarded (with the exception of the ATP Finals, from which points are dropped on the Monday following the last ATP Tour event of the following year).
- **Carlos Alcaraz** is the current world No. 1.

WTA WOMEN'S RANKINGS

- The WTA rankings are the ratings defined by the Women's Tennis Association, introduced in **November 1975.**
- **Iga Świątek** is the current world No. 1.

Shield IAS

GEOGRAPHY AND ENVIRONMENT

(Ecology; Biodiversity and Disaster Management)

INDIA: BASIC FACTS

- India has a unique culture and is one of the oldest and greatest civilizations of the world.



- It stretches from the snow-capped Himalayas in the north to sun drenched coastal villages of the south and the humid tropical forests on the south-west coast, from the fertile Brahmaputra valley on its east to the Thar desert in the west.

- It covers an area of 32,87,263 sq.km.
- India is the seventh largest country in the world and ranks second in population.
- The country stands apart from the rest of Asia, marked off as it is by mountains and the sea, which give her a distinct geographical entity.
- Bounded by the Great Himalayas in the north, it stretches southwards and at the Tropic of Cancer tapers off into the Indian Ocean between the Bay of Bengal on the east and the Arabian Sea on the west. Lying entirely in the northern hemisphere, the mainland extends between latitudes 8°4' and 37°6' north, longitudes 68°7' and 97°25' east and measures about 3,214 km from north to south between the extreme latitudes and about 2,933 km from east to west between the extreme longitudes.

Physical features

- The mainland comprises four regions, namely, **the great mountain zone, plains of the Ganga and the Indus, the desert region and the southern peninsula.**
- The Himalayas comprise three almost parallel ranges interspersed with large plateaus and valleys, some of which, like the Kashmir and Kullu valleys, are fertile, extensive and of great scenic beauty. Some of the highest peaks in the world are found in these ranges.
- The high altitudes allow travel only through a few passes, notably the Jelep La and Nathu La on the main Indo-Tibet trade route through the Chumbi valley, north-east of Darjeeling and Shipki La in the Satluj valley, north-east of Kalpa (Kinnaur).
- The plains of the Ganga and the Indus are formed by basins of three distinct river systems—the Indus, the Ganga and the Brahmaputra. They are one of the world's greatest stretches of flat alluvium and also one of the most densely populated areas on the earth. The desert region can be divided into two parts—the 'great desert' and the 'little desert'. The great desert extends from the edge of the Rann of Kutch beyond the Luni river northward. The whole of the Rajasthan-Sind frontier runs through this. The little desert extends from the Luni between Jaisalmer and Jodhpur up to the northern west.
- The Peninsular Plateau is marked off from the plains of the Ganga and the Indus by a mass of mountain and hill. Prominent among these are the Aravali, Vindhya, Satpura, Maikala and Ajanta. The Peninsula is flanked on the one side by the Eastern Ghats and on the other by the Western. Between the Western Ghats and the Arabian Sea lies a narrow coastal strip, while between Eastern Ghats and the Bay of Bengal, there is a broader coastal area. The southern point of the plateau is formed by the Nilgiri Hills where the Eastern and the Western Ghats meet. The Cardamom Hills lying beyond may be regarded as a continuation of the Western Ghats.

Geological structure

- The geological regions broadly follow the physical features and may be grouped into three regions: **the Himalayas and their associated group of mountains, the Indo-Gangetic Plain and the Peninsular Shield.** The Himalayan mountain belt to the north and the Naga-Lushai Mountain in the east, are the regions of mountain-building movement.
- The weathering and erosive elements worked on these to produce the relief seen today. The Indo-Ganga plains are a great alluvial tract that separates the Himalayas in the north from the Peninsula in the south.

- The Peninsula is a **region of relative stability** and **occasional seismic disturbances**. Highly metamorphosed rocks of the earliest periods occur in this area; the rest being covered by the Gondwana formations, lava flows belonging to the Deccan Trap formation and younger sediments.

River systems

- The river systems of India can be classified into four groups viz., **(i) Himalayan rivers, (ii) Deccan rivers, (iii) Coastal rivers and (iv) Rivers of the inland drainage basin.** The Himalayan rivers are formed by melting snow and glaciers and therefore, continuously flow throughout the year. During the monsoon months, Himalayas receive very heavy rainfall and rivers swell, causing frequent floods.
- The Deccan rivers on the other hand are rainfed and therefore fluctuate in volume. Many of these are non-perennial. The Coastal streams, especially on the west coast are short in length and have limited catchment areas. Most of them are non-perennial. The streams of inland drainage basin of western Rajasthan are few and far apart. Most of them are of an ephemeral character. The main Himalayan river systems are those of the Indus and the Ganga-Brahmaputra-Meghna system.
- The Indus, which is one of the great rivers of the world, rises near Mansarovar in Tibet and flows through India and thereafter through Pakistan and finally falls into the Arabian sea near Karachi. Its important tributaries flowing in Indian territory are the Sutlej (originating in Tibet), the Beas, the Ravi, the Chenab and the Jhelum.
- The **Ganga-Brahmaputra-Meghna** is another important system of which the principal sub-basins are those of Bhagirathi and the Alaknanda, which join at Dev Prayag to form the Ganga. It traverses through Uttarakhand, Uttar Pradesh, Bihar and West Bengal. Below Rajmahal Hills, the Bhagirathi, which used to be the main course in the past, takes off, while the Padma continues eastward and enters Bangladesh.
- The Yamuna, the Ramganga, the Ghaghra, the Gandak, the Kosi, the Mahananda and the Sone are the important tributaries of the Ganga. Rivers Chambal and Betwa are the important sub-tributaries, which join the Yamuna before it meets the Ganga. The Padma and the Brahmaputra join at Bangladesh and continue to flow as the Padma or Ganga.
- The Brahmaputra rises in Tibet, where it is known as Tsangpo and runs a long distance till it crosses over into India in Arunachal Pradesh under the name of Dihang. Near Passighat, the Debang and Lohit join the river Brahmaputra and the combined river runs all along the Assam valley. It crosses into Bangladesh downstream of Dhubri. The principal tributaries of Brahmaputra in India are the Subansiri, Jia Bhareli, Dhansiri, Puthimari, Pagladiya and the Manas. The Brahmaputra in Bangladesh fed by Teesta, etc. finally falls into the Ganga.
- The Barak river, the head stream of Meghna, rises in the hills in Manipur. The important tributaries of the river are Makku, Trang, Tuivai, Jiri, Sonai, Rukni, Katakhal, Dhaleswari, Langachini, Maduva and Jatinga. Barak continues in Bangladesh till the combined Ganga-Brahmaputra joins it near Bhairab Bazar.
- In the Deccan region, most of the major river systems flowing generally in the east fall into Bay of Bengal. The major east flowing rivers are Godavari, Krishna, Cauvery and Mahanadi. Narmada and Tapti are major west flowing rivers. The Godavari in the southern Peninsula has the second largest river basin covering 10 per cent of the area of India. Next to it is the Krishna basin in the region and the Mahanadi is another large basin of the region. The basin of the Narmada in the uplands of the Deccan, flowing to the Arabian Sea and of the Cauvery in the south, falling into the Bay of Bengal are

about the same size, though with different character and shape. A few rivers in Rajasthan do not drain into the sea. They drain into salt lakes and get lost in sand with no outlet to sea. Besides these, there are the desert rivers which flow for some distance and are lost in the desert. These are Luni, Machhu, Rupen, Saraswati, Banas, Ghaggar and others.

Climate/seasons

- India's climate is affected by two seasonal winds—**the north-east monsoon and the south-west monsoon.**
- The north-east monsoon commonly known as winter monsoon blows from land to sea whereas south-west monsoon known as summer monsoon blows from sea to land after crossing the Indian ocean, the Arabian sea and the Bay of Bengal.
- The south-west monsoon brings most of the rainfall during the year in the country.

Flora

- India is rich in flora. Available data place India in the tenth position in the world and fourth in Asia in plant diversity. With a wide range of climatic conditions from the torrid to the arctic, India has rich and varied vegetation, which only a few countries of comparable size possess. India can be divided into eight distinct floristic regions, namely, the western Himalayas, the eastern Himalayas, Assam, the Indus plain, the Ganga plain, the Deccan, the Malabar and the Andamans.
- The **western Himalayan region extends from Kashmir to Kumaon**. Its temperate zone is rich in forests of chir, pine, other conifers and broadleaved temperate trees. Higher up, forests of deodar, blue pine, spruce and silver fir occur.
- The characteristic trees of this zone are high-level silver fir, silver birch and junipers. The eastern Himalayan region extends from Sikkim eastwards and embraces Darjeeling, Kurseong and the adjacent tracts. The temperate zone has forests of oaks, laurels, maples, rhododendrons, alder and birch. Many conifers, junipers and dwarf willows also grow here.
- The Indus plain region comprises the plains of Punjab, western Rajasthan and northern Gujarat. It is dry, hot and supports natural vegetation. The Ganga plain region covers the area which is alluvial plain and is under cultivation for wheat, sugarcane and rice. Only small areas support forests of widely differing types.
- The Deccan region comprises the entire table land of the Indian Peninsula and supports vegetation of various kinds from shrub jungles to mixed deciduous forests. The Malabar region covers the excessively humid belt of mountain country parallel to the west coast of the Peninsula.

Faunal resources

- India is very rich in terms of biological diversity due to its unique bio-geographical location, diversified climate conditions and enormous eco-diversity and geo-diversity. India's immense biological diversity encompasses ecosystems, populations, species and their genetic make-up. This diversity can be attributed to the vast variety in physiography and climatic situations resulting in a diversity of ecological habitats ranging from tropical, sub-tropical, temperate, alpine to desert.

- According to world bio-geographic classification, India represents two of the major realms (the Palearctic and Indo-Malayan) and three biomes (Tropical Humid Forests, Tropical Dry/Deciduous Forests and Warm Deserts/Semi-Deserts).
- In the light of Biodiversity Convention, India holds a unique position with the priority of conservation of natural resources and sustainable development. In fact, within only about 2 per cent of world's total land surface, India is known to have over 7.50 per cent of the species of animals that the world holds.

ARCTIC REGION

- The Arctic region, or the Arctic, is a geographic region spreading around the North Pole. There is no single correct definition of the region as the southern boundary varies.

Key ways to define the Arctic:

- The **Arctic Circle (66 ° 33'N) delimits the Arctic in terms of solar radiation**.
- In theory, areas north of the Arctic Circle have at least one day without daylight in the winter and at least one nightless night in the summer. In practice, this does not happen everywhere because the surface of the earth is uneven, and the light refracts in the atmosphere.
- Based on temperature, the **monthly average temperature in the Arctic is below + 10 ° C throughout the year**, even in summer.
- The forest line follows a **temperature-defined area**. The forest line is not a narrow line but a zone tens of kilometres wide between the northern coniferous forest and the tundra. In this demarcation, the Arctic is predominantly wooded tundra and glaciers.
- **Permafrost increases the area of Russian Arctic** compared to the other delimitations. Permafrost is soil that stays frozen for at least two consecutive years.
- The ice cover determines the Arctic nature of marine areas.
- **Sea ice is highest in February-March** and **lowest in September**. The surface of the Arctic ice is monitored almost in real time by satellites.
- **Culturally defined**, the Arctic covers the **homelands of northern indigenous peoples**.
- **Political delimitations** vary according to how they serve, for example, the interests of states or international cooperation.
- As the climate warms, the Arctic shrinks if defined by temperature, forest line, permafrost, or ice cover. Cultural and political boundaries also vary. The Arctic Circle is the most permanent of the delimitations, although also the polar circle moves very slowly due to the variation of the Earth's axial tilt.

Interesting facts and figures about the Arctic

1. The Arctic is regarded as containing some of the last physically undisturbed marine spaces on earth.
2. Shipping (unique ships) within the Arctic Polar Code area has increased by 25% over 6 years from 2013-2019. A majority of these vessels are fishing vessels.
3. The central feature of the Arctic is the Arctic Ocean. The **Arctic Ocean has the widest continental shelf of all the oceans.**

4. The Arctic sea ice has **diminished from 6,1 million sq.km. in 1999 to 4,3 million sq.km. in 2019.**
5. Boreal forests of the Arctic cover about 17% of the global land area, representing the largest natural forests in the world.
6. Together with the Antarctic, the Arctic contains the largest freshwater resource on Earth.
7. **Seven of the world's ten largest wilderness** areas are located in the Arctic region.
8. The total catch of wild fish in the Arctic mounted to 10% of the world catch .
9. The Arctic as an area is essentially an ocean surrounded by the land north of the Arctic circle (66032' N) that covers a region of 33 million Km2 , larger than Africa or Asia.
10. The United States Geological Survey (USGS) estimates that 30 per cent of the world's undiscovered natural gas is in the Arctic, mostly on the continental shelves beneath the Arctic Ocean.
11. More than 70 per cent of the undiscovered oil resources are estimated to occur in northern Alaska, the Amerasian Basin, the eastern side of Greenland, the eastern Barents Sea region, and the Davis Strait of Greenland and Canada.
12. An estimated 84 per cent of the undiscovered oil and gas in the Arctic occurs offshore.
13. The Arctic region is characterized by some of the largest continuous intact ecosystems on the planet, but is facing increasingly larger threat.



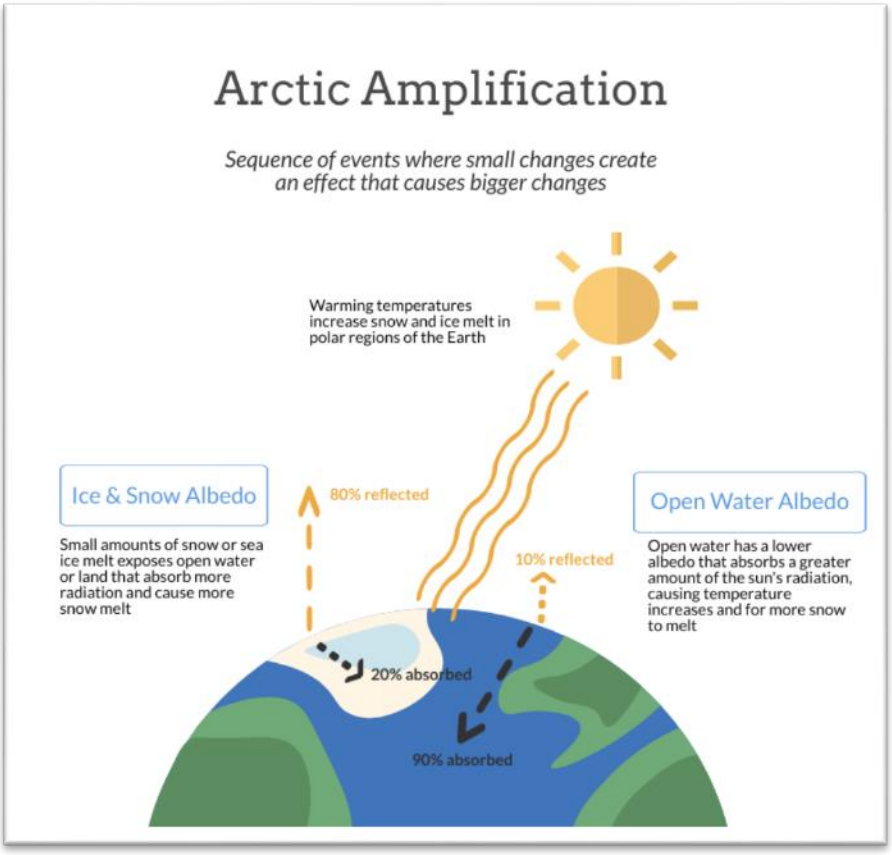
ARCTIC AMPLICATION

News: *Finnish Meteorological Institute published their study in the Communications Earth & Environment journal, concluding that the Arctic is heating four times faster than the rest of the planet.*

The warming is more concentrated in the Eurasian part of the Arctic, where the Barents Sea north of Russia and Norway is warming at an alarming rate — seven times faster than the global average.

What is Arctic amplification? What causes it?

- Global warming, the long-term heating of the earth's surface, expedited due to anthropogenic forces or human activities since pre-industrial times and has increased the planet's average temperature by 1.1 degrees Celsius.
- While changes are witnessed across the planet, any change in the surface air temperature and the net radiation balance tend to produce larger changes at the north and south poles. This phenomenon is known as **polar amplification**; these changes are more pronounced at the northern latitudes and are known as the **Arctic amplification**.



- Among the many global warming-driven causes for this amplification, the **ice-albedo feedback**, **lapse rate feedback**, **water vapour feedback** and **ocean heat transport** are the primary causes.
- **Sea ice and snow have high albedo** (measure of reflectivity of the surface), implying that they are capable of reflecting most of the solar radiation as opposed to water and land. In the Arctic's case, global warming is resulting in diminishing sea ice.
- As the sea ice melts, the Arctic Ocean will be more capable of absorbing solar radiation, thereby driving the amplification. The lapse rate or the rate at which the temperature drops with elevation decreases with warming.
- Studies show that the ice-albedo feedback and the lapse rate feedback are responsible for 40% and 15% of polar amplification respectively.
- **Thawing Permafrost** also contributes to Arctic Amplification
- **Permafrost is frozen ground** that is composed largely of decayed plants. It is full of carbon because, as part of the photosynthesis process, living plants continuously extract CO_2 from the air.
- Scientists once thought that the carbon in permafrost binds tightly with iron and is therefore safely sequestered from the atmosphere.
- However, in a study published in a journal demonstrated that iron doesn't permanently trap CO_2.
- This is because, as permafrost melts, bacteria frozen inside the soil activate. They use the iron as a food source. When they consume it, once-captive carbon is released.
- In a process called **photomineralization**, sunlight oxidizes the released carbon into CO_2.

Wildfires and Arctic Amplification

- As temperatures rise and permafrost thaws and dries out, grasslands become tinderboxes.
- When they burn, the CO_2 and CH_4 in the vegetation combust. Airborne in smoke, they add to the atmosphere greenhouse gas load.

Impact on India

- A study found that the **reduced sea ice in the Barents-Kara Sea region** can lead to extreme rainfall events in India, in the latter half of the monsoons — in September and October.
- The study was titled - **'A possible relation between Arctic Sea ice and late season Indian Summer Monsoon Rainfall extremes'**
- The changes in the atmospheric circulation due to diminishing sea ice combined with the warm temperatures in the Arabian Sea contribute to enhanced moisture and drive extreme rainfall events.
- According to the World Meteorological Organization's report, 'State of Global Climate in 2021', sea level along the Indian coast is rising faster than the global average rate.
- One of the primary reasons for this rise is the melting of sea ice in the polar regions, especially the Arctic.

URBAN FLOODING

#Concept: *To understand.*

- Urban flooding is the **inundation of land or property in a built environment**, particularly in more densely populated areas (like cities), caused by rainfall overwhelming the capacity of drainage systems.
- Unlike rural floods (Heavy rain over a flat or low-lying area), urban flooding is not only caused by just higher precipitation but also unplanned urbanisation (catchments) that:

- increases the flood peaks from 1.8 to 8 times
- increases the flood volumes by up to 6 times.

Causes of urban flooding in India

Encroachments on Drainage Channels	○ In Indian cities and towns, due to increased land prices and less availability of land in the city centre. New developments are coming up in low-lying areas, usually as encroachments over lakes, wetlands and riverbeds. ○ Ideally, the natural drains should have been widened (similar to road widening for increased traffic) to accommodate the higher flows of stormwater. ○ But on the contrary, there have been large scale encroachments without widening the natural drains. Consequently, the capacity of the natural drains has decreased, resulting in flooding.
Climate Change	○ Exacerbated by changing climate, resulting in extreme events. The climate

	change has caused an **increase in the frequency of short duration heavy rainfall leading to higher water run-off.** o Whenever the **rain bearing clouds pass over the urban heat island**, the hot air pushes the clouds up, resulting in highly localised rainfall which may sometimes be of high intensity.
Unplanned Tourism Activities	o Water bodies have been used as an attraction for tourism development for decades. Water plants that reduce the runoff speed are being removed from rivers and lakes for maintaining tourism activity. o Throwing **non-bio degradable matter into the rivers and lakes** during religious and cultural activities reduces the water quality. In the event of floods, the suspended particles and pollutants overflow into the cities posing health risks.
Uninformed Release of Water from Dams	o Unplanned and sudden release of water from dams and lakes lead to floods in an urban area, without giving the public enough time to respond. o **Example:** Chennai Floods 2015 due to release of water from Chembarambakkam Lake.
Illegal Mining Activities	o Illegal mining of river sand and quartzite for use in building construction deplete the natural bed of the rivers and lakes. o It causes soil erosion and reduces the water retention capacity of the waterbody increasing the speed and scale of water flow. o Example: Jaisamand Lake- Jodhpur, Cauvery river- Tamil Nadu.

Steps taken to Mitigate Urban Flooding

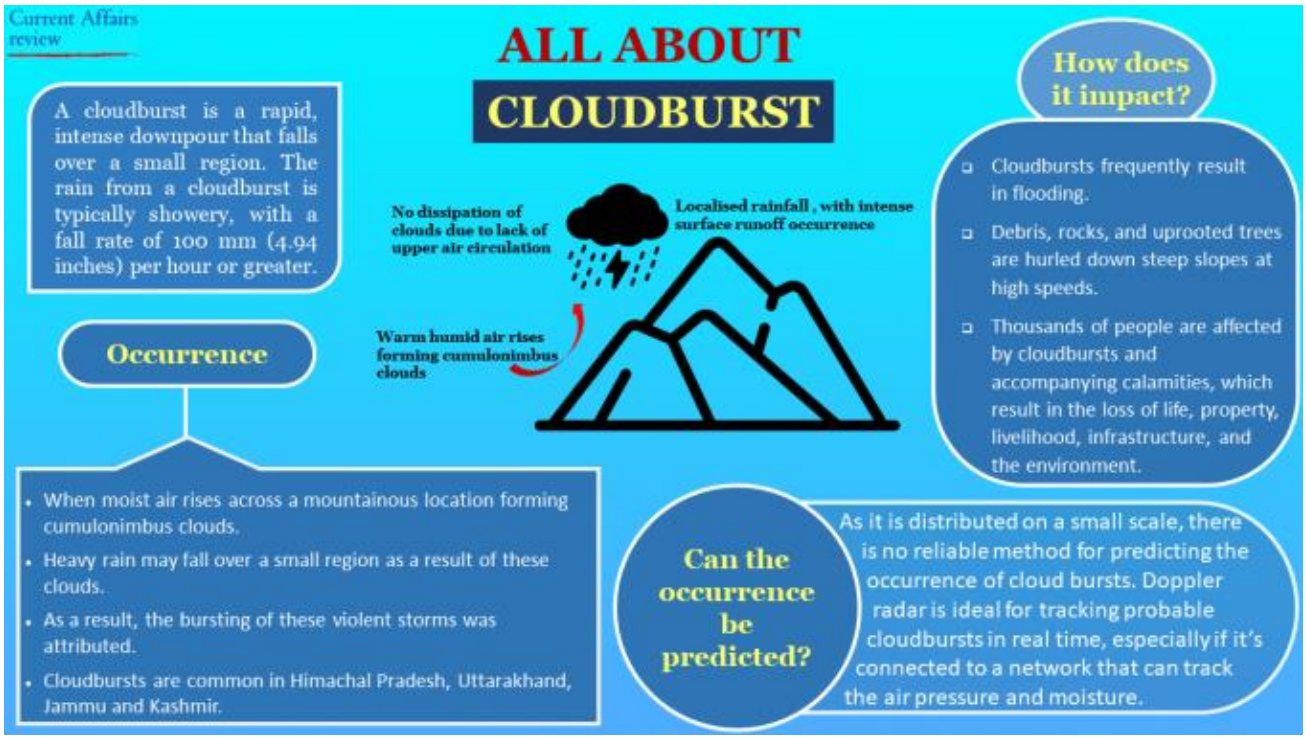
- One of the best solutions to reduce the chances of flooding is to build away from floodplains and high flood hazard zones. It is a challenging task to identify such zones and water bodies but using geospatial analysis can lend crucial aid in identifying such areas.
- New construction in flood-prone areas must be strictly monitored and regulated and in areas where constructions had already finished or rather encroached upon. Structural flood control measures, like increasing stormwater drainage capacitors, must be taken into account.
- Government initiatives like the **Sponge Cities mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT)** can go a long way in helping civic authorities to plan cities keeping flood risks in mind. Further, residential and commercial stakeholders can be further motivated to install green infrastructure options like rain gardens, green roofs, and rainwater harvesting systems.
- In addition to reducing flood risks, these systems store water for drier seasons and help in recharging groundwater. It is only prudent to invest in making our cities resilient so that when disaster strikes, we can bounce back to normal with minimum loss of life and property.

- Along with the government taking these measures, the general public must also be educated about the dangers of buying houses in low lying areas or near floodplains. Such steps may not yield immediate results but the steps taken might lead to tangible results in the future.

CLOUD BURST

Concept: *To understand.*

- Cloudbursts are **short-duration, intense rainfall events** over a small area.
- It is a weather phenomenon with unexpected precipitation exceeding 100mm/h over a geographical region of approximately 20-30 square km.
- In the Indian Subcontinent, it generally occurs when a **monsoon cloud drifts northwards**, from the **Bay of Bengal or the Arabian Sea** across the plains then on to the Himalaya that sometimes brings 75 millimetres of rain per hour.



Occurrence

- The relative humidity and cloud cover is at the **maximum level with low temperature and slow winds** because of which a high amount of clouds may get condensed at a very rapid rate and result in a cloudburst.
- As temperatures increase, the atmosphere can hold more and more moisture and this moisture comes down as a short very intense rainfall for a short duration probably half an hour or one hour resulting in flash floods in the mountainous areas and urban floods in the cities.

Cloudburst are Different from Rainfall

- Rain is condensed water falling from a cloud while cloudburst is a sudden heavy rainstorm.
- Rain over 100mm per hour is categorised as a cloudburst.
- The cloudburst is a natural phenomenon, but occurs quite unexpectedly, very abruptly, and rather drenching.

Impact of Climate Change

- Several studies have shown that climate change will increase the frequency and intensity of cloudbursts in many cities across the globe.
- In May 2021, the World Meteorological Organization noted that there is about a 40% chance of the annual average global temperature temporarily reaching 1.5°C above the pre-industrial level in at least one of the next five years.
- It added that there is a 90% likelihood of at least one year between 2021 and 2025 becoming the warmest on record and dislodge 2016 from the top rank.
- It is seen that more cloudbursts are happening in Himalayan region because the decadal temperature rise in the Himalayan region is higher than the global rate of rising temperatures.
- **Consequences of Cloudbursts:** Flash floods, Landslides, Mudflows, Land caving.

Prediction

- There is no satisfactory technique for anticipating the occurrence of cloud bursts because they develop over a small period of time.
- A very fine network of radars is required to be able to detect the likelihood of a cloud burst and this would be expensive.
- Only the areas likely to receive heavy rainfall can be identified on a short range scale. Much of the damage can be avoided by way of identifying the areas and the meteorological situations that favour the occurrence of cloud bursts.

ADVANCING AND RETREATING MONSOON

Concept: *To* ***understand****.*

Advancing Monsoon	Retreating Monsoon
Wind Movement is from Sea to Land. The wind blows from South West to North East.	Wind Movement is from Land to Sea
Advancing Monsoon brings the maximum rains in India	Retreating Monsoon brings rains in India but not as much as Advancing Monsoon
Advancing Monsoon carries moist winds	Retreating Monsoon carries dry winds
The period of Advancing Monsoon starts in June and ends in September	The period of Retreating Monsoon starts in October and ends by November.
In the case of Advancing Monsoon, winds enter India from the South (in the month of June),	The Winds start retreating from the Northern Plains when the temperature falls in the

and move Northwards and cover the entire country in a month.	Northern Plains in October and November.
Most of India receives rainfall from Advancing monsoon	The Eastern Coast of South India receives rainfall from Retreating Monsoon.

WESTERN AND EASTERN GHATS

#Concept: *To understand.*

Western Ghats	Eastern Ghats
1. The Western Ghats are situated and mark the western edges of Deccan Plateau parallel to the western coasts of India along the Arabian Sea.	1. The Eastern Ghats are situated and mark the eastern edges of Deccan Plateau parallel to the eastern coasts of India along the Bay of Bengal.
2. Continuous, can be crossed through the passes only.	2. Discontinuous, irregular and dissected by rivers draining into the Bay of Bengal.
3. The Western Ghats are higher than the Eastern Ghats. Average elevation is 900 - 1600 meters.	3. Average elevation is 600 meters.
4. The height increases progressively from north to south. The highest peaks include the Anai Mudi, the Doda Belta.	4. The highest peaks include the Mahendragiri, the Javadi Hills.
5. The Western Ghats enclose a narrow strip between its western slopes and the Arabian Sea which is known as Western Coastal Plain. Its maximum width is 64 km.	5. The Eastern Ghats also enclose a strip of land between its eastern slopes and the Bay of Bengal which is known as the Eastern Coastal Plain. It is wider than the Western Coastal strip with its maximum breadth 120 km.
6. It experiences orographic rain mostly in summer due to the summer monsoons. The climate is hot and moist.	6. It receives rain both in summer and winter, especially in winter through winter monsoons. However, here the rain is lesser than the western strip.
7. Here the soil is highly fertile. Rice, spices, rubber and fruits like coconuts, cashew nuts etc. are grown here.	7. The soil is not as fertile as western strip. Rice, ground nuts, cotton, tobacco, coconuts etc. are grown here.

TRADITIONAL RAINWATER HARVESTING

Jhalara:

- are typically rectangular-shaped stepwells that have tiered steps on three or four sides. These stepwells collect the subterranean seepage of an upstream reservoir or a lake.
- Jhalaras were built to ensure easy and regular supply of water for religious rites, royal ceremonies and community use. The **city of Jodhpur** has eight jhalaras, the oldest being the Mahamandir Jhalara that dates back to 1660 AD.

Talab /Bandhi:

- Talabs are reservoirs that store water for household consumption and drinking purposes. They may be natural, such as the **pokhariyan ponds** at Tikamgarh in the Bundelkhand region or man-made, such as the lakes of Udaipur.
- A reservoir with an area less than five bighas is called a talai, a medium sized lake is called a bandhi and bigger lakes are called sagar or samand.

Bawari:

- Bawaris are unique stepwells that were once a part of the ancient networks of water storage in the cities of Rajasthan. The little rain that the region received would be diverted to man-made tanks through canals built on the hilly outskirts of cities.
- The water would then percolate into the ground, raising the water table and recharging a deep and intricate network of aquifers. To minimise water loss through evaporation, a series of layered steps were built around the reservoirs to narrow and deepen the wells.

Taanka:

- Taanka is a traditional rainwater harvesting technique indigenous to the Thar desert region of Rajasthan. A Taanka is a cylindrical paved underground pit into which rainwater from rooftops, courtyards or artificially prepared catchments flows.
- Once completely filled, the water stored in a taanka can last throughout the dry season and is sufficient for a family of 5-6 members. An important element of water security in these arid regions, taankas can save families from the everyday drudgery of fetching water from distant sources.

Ahar Pynes:

- Ahar Pynes are traditional floodwater harvesting systems indigenous to South Bihar.
- Ahars are reservoirs with embankments on three sides that are built at the end of diversion channels like pynes.
- Pynes are artificial rivulets led off from rivers to collect water in the ahars for irrigation in the dry months. Paddy cultivation in this relatively low rainfall area depends mostly on ahar pynes.

Johads:

- Johads, one of the oldest systems used to conserve and recharge ground water, are small earthen check dams that capture and store rainwater. Constructed in an area with naturally high elevation on three sides, a storage pit is made by excavating the area, and excavated soil is used to create a wall on the fourth side.
- Sometimes, several johads are interconnected through deep channels, with a single outlet opening into a river or stream nearby. This prevents structural damage to the water pits that are also called madakas in Karnataka and pemghara in Odisha.

Panam Keni:

- The Kuruma tribe (a native tribe of Wayanad) uses a special type of well, called the panam keni, to store water. Wooden cylinders are made by soaking the stems of toddy palms in water for a long time so that the core rots away until only the hard outer layer remains.
- These cylinders, four feet in diameter as well as depth, are then immersed in groundwater springs located in fields and forests. This is the secret behind how these wells have abundant water even in the hottest summer months.

Khadin:

- Khadins are ingenious constructions designed to harvest surface runoff water for agriculture. The main feature of a khadin, also called dhora, is a long earthen embankment that is built across the hill slopes of gravelly uplands.
- Sluices and spillways allow the excess water to drain off and the water-saturated land is then used for crop production. First designed by the Paliwal Brahmins of Jaisalmer in the 15th century, this system is very similar to the irrigation methods of the people of ancient Ur (present Iraq).

Kund:

- A kund is a saucer-shaped catchment area that gently slope towards the central circular underground well. Its main purpose is to harvest rainwater for drinking.
- Kunds dot the sandier tracts of western Rajasthan and Gujarat. Traditionally, these well-pits were covered in disinfectant lime and ash, though many modern kunds have been constructed simply with cement. Raja Sur Singh is said to have built the earliest known kunds in the village of Vadi Ka Melan in the year 1607 AD.

Baoli:

- Built by the nobility for civic, strategic or philanthropic reasons, baolis were secular structures from which everyone could draw water. These beautiful stepwells typically have beautiful arches, carved motifs and sometimes, rooms on their sides.
- The locations of baolis often suggest the way in which they were used. Baolis within villages were mainly used for utilitarian purposes and social gatherings. Baolis on trade routes were often frequented as resting places. Stepwells used exclusively for agriculture had drainage systems that channelled water into the fields.

Nadi:

- Found near Jodhpur in Rajasthan, nadis are village ponds that store rainwater collected from adjoining natural catchment areas. The location of a nadi has a strong bearing on its storage capacity and hence the site of a nadi is chosen after careful deliberation of its catchment and runoff characteristics.
- Since nadis received their water supply from erratic, torrential rainfall, large amounts of sandy sediments were regularly deposited in them, resulting in quick siltation. A local voluntary organisation, the Mewar Krishak Vikas Samiti (MKVS) has been adding systems like **spillways and silt traps to old nadis** and **promoting afforestation** of their drainage basin to prevent siltation.

Bhandara Phad:

- Phad, a community-managed irrigation system, probably came into existence a few centuries ago. The system starts with a **bhandhara (check dam)** built across a river, from which kalvas (canals) branch out to carry water into the fields in the phad (agricultural block).
- **Sandams (escapes outlets)** ensure that the excess water is removed from the canals by charis (distributaries) and sarangs (field channels). The Phad system is operated on three rivers in the Tapi basin – Panjhra, Mosam and Aram – in the Dhule and Nasik districts of Maharashtra.

Zing:

- Zings, found in Ladakh, are small tanks that collect melting glacier water. A network of guiding channels brings water from the glacier to the tank. A trickle in the morning, the melting waters of the glacier turn into a flowing stream by the afternoon. The water, collected by evening, is used in the fields on the following day.
- A water official called a **Chirpun** is responsible for the equitable distribution of water in this dry region that relies on melting glacial water to meet its farming needs.

Kuhls:

- Kuhls are surface water channels found in the mountainous regions of Himachal Pradesh. The channels carry glacial waters from rivers and streams into the fields. The Kangra Valley system has an estimated 715 major kuhls and 2,500 minor kuhls that irrigate more than 30,000 hectares in the valley.
- An important cultural tradition, the kuhls were built either through public donations or by royal rulers. A kohli would be designated as the master of the kuhl and he would be responsible for the maintenance of the kuhl.

Zabo:

- The Zabo (meaning 'impounding run-off') system combines water conservation with forestry, agriculture and animal care.
- Practised in **Nagaland**, Zabo is also known as the **Ruza system**. Rainwater that falls on forested hilltops is collected by channels that deposit the run-off water in pond-like structures created on the terraced hillsides. The channels also pass through cattle yards, collecting the dung and urine of

animals, before ultimately meandering into paddy fields at the foot of the hill. Ponds created in the paddy field are then used to rear fish and foster the growth of medicinal plants..

Bamboo Drip Irrigation:

- Bamboo Drip irrigation System is an ingenious system of efficient water management that has been practised for over two centuries in northeast India. The tribal farmers of the region have developed a system for irrigation in which water from perennial springs is diverted to the terrace fields using varying sizes and shapes of bamboo pipes. Best suited for crops requiring less water, the system ensures that small drops of water are delivered directly to the roots of the plants. This ancient system is used by the farmers of Khasi and Jaintia hills to drip-irrigate their black pepper cultivation..

Jackwell:

- The Shompen tribe of the Great Nicobar Islands lives in a region of rugged topography that they make full use of to harvest water. In this system, the low-lying region of the island is covered with jackwells (pits encircled by bunds made from logs of hard wood). A full-length bamboo is cut longitudinally and placed on a gentle slope with the lower end leading the water into the jackwell. Often, these split bamboos are placed under trees to collect the runoff water from leaves. Big jackwells are interconnected with more bamboos so that the overflow from one jackwell leads to the other, ultimately leading to the biggest jackwell.

Ramtek model:

- The Ramtek model has been named after the water harvesting structures in the town of Ramtek in Maharashtra. An intricate network of groundwater and surface water bodies, this system was constructed and maintained mostly by the malguzars (landowners) of the region.
- In this system, tanks connected by underground and surface canals form a chain that **extends from the foothills to the plains.** Once tanks located in the hills are filled to capacity, the water flows down to fill successive tanks, generally ending in a small waterhole. This system conserves about 60 to 70 % of the total runoff in the region!

Pat system:

- The Pat system, in which the peculiarities of the terrain are used to divert water from hill streams into irrigation channels, was developed in the Bhitada village in Jhabua district of Madhya Pradesh. Diversion bunds are made across a stream near the village by piling up stones and then lining them with teak leaves and mud to make them leak-proof. The Pat channel then passes through deep ditches and stone aqueducts that are skilfully cut info stone cliffs to create an irrigation system that the villagers use in turn..

Eri:

- The Eri (tank) system of Tamil Nadu is one of the oldest water management systems in India. Still widely used in the state, eris act as flood-control systems, prevent soil erosion and wastage of runoff during periods of heavy rainfall, and also recharge the groundwater.

- Eris can either be a **system eri**, which is fed by channels that divert river water, or a non-system eri, that is fed solely by rain. The tanks are interconnected in order to enable access to the farthest village and to balance the water level in case of excess supply. The eri system enables the complete use of river water for irrigation and without them, paddy cultivation would have been impossible in Tamil Nadu.

- There are several other hyperlocal versions of the traditional method of tank irrigation in India. From **Keres in Central Karnataka** and **Cheruvus in Andhra Pradesh** to **Dongs in Assam**, tanks are among the most common traditional irrigation systems in our country.

PROTECTED AREA

- Protected areas are those in which human occupation or at least the exploitation of resources is limited.
- The definition has been provided by IUCN in its categorization guidelines for protected areas.
- The term "**protected area"** also includes Marine Protected Areas, the boundaries of which will include some area of ocean, and Transboundary Protected Areas that overlap multiple countries which remove the borders inside the area for conservation and economic purposes.

National Parks	• An area, whether within a sanctuary or not, can be **notified by the state government** to be constituted as a National Park, by reason of its ecological, faunal, floral, geomorphological, or zoological association or importance, needed to for the purpose of protecting & propagating or developing wildlife therein or its environment. • The state government can fix and alter boundaries of the National Parks with prior consultation and approval with **National Board of Wildlife.** • There is no need to pass an act for alternation of boundaries of National Parks. • **No human activity is permitted inside the national park** except for the ones permitted by the Chief Wildlife Warden of the state under the conditions given in the Wildlife Protection Act 1972.
Wildlife Sanctuaries	• Any area other than area comprised with any reserve forest or the territorial waters can be notified by the State Government to constitute as a sanctuary if such area is of adequate ecological, faunal, floral, geomorphological, natural or zoological significance, for the purpose of protecting, propagating or developing wildlife or its environment. • There is no need to pass legislation (act) by the state assembly to declare a wildlife sanctuary. Fixation and alternation of boundary can be done by state legislature via resolution. • No need to pass an act for alternation of boundaries. No alternation of boundaries in wildlife sanctuaries can be done without approval of the NBWL (National Board of Wildlife).

	• **Some restricted human activities** are allowed inside the Sanctuary area details of which are given in wildlife protection Act 1972.
Conservation reserves and community reserves	• These are terms denoting protected areas of India which typically act as **buffer zones to or connectors and migration corridors** between established national parks, wildlife sanctuaries and reserved and protected forests of India. • Such areas are designated as conservation areas if they are uninhabited and **completely owned by the Government of India** but used for subsistence by communities and community areas if part of the lands is privately owned. • These categories were added because of reduced protection in and around existing or proposed protected areas due to private ownership of land, and land use.
Marine Protected Areas	• A marine protected area (MPA) is essentially a space in the ocean where human activities are more strictly regulated than the surrounding waters - similar to parks we have on land. • These places are given special protections for natural or historic marine resources by local, state, territorial, native, regional, or national authorities.

Shield IAS

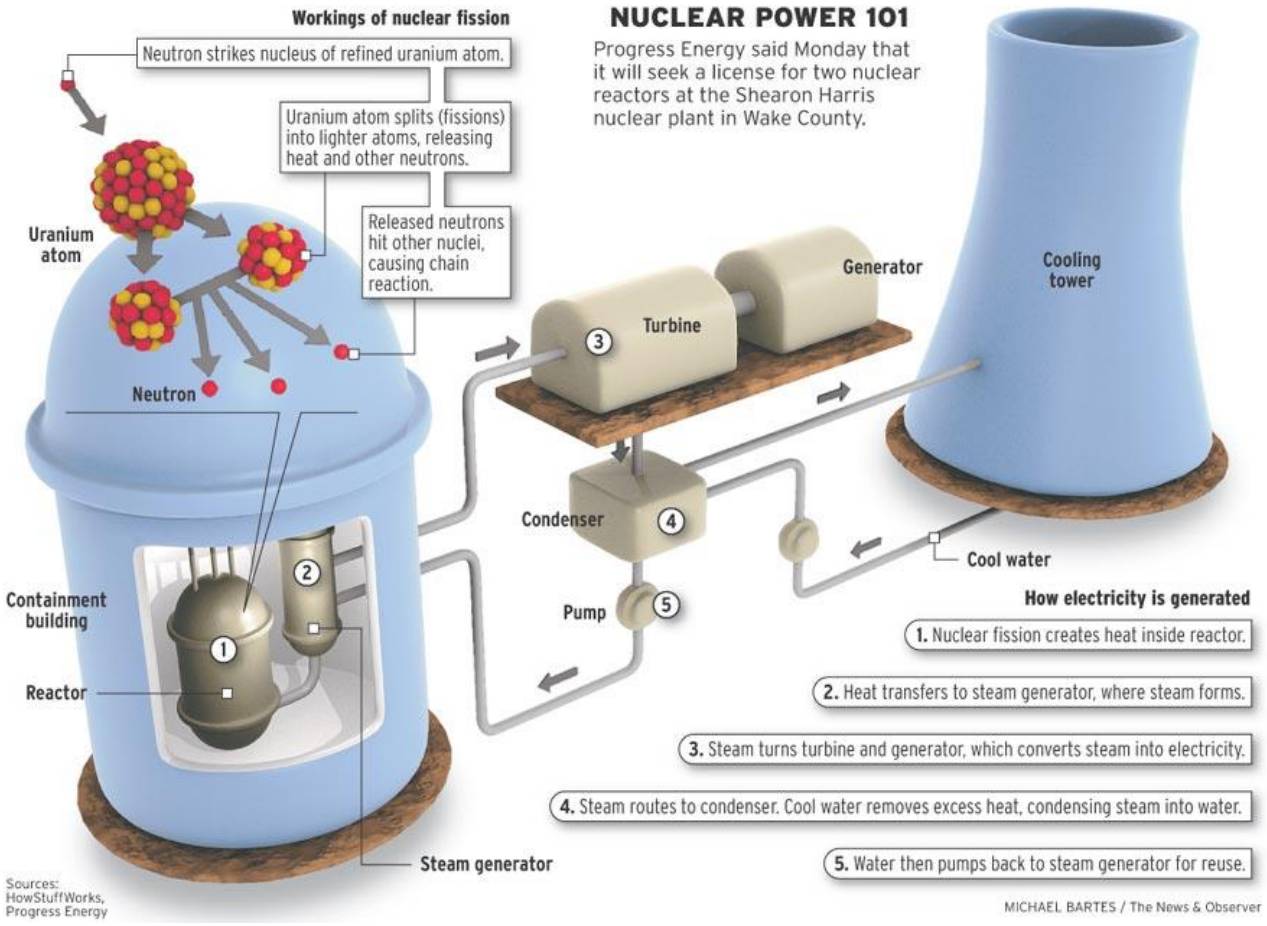
SCIENCE AND TECHNOLOGY

(Inventions, Innovations, Discoveries and Explorations)

NUCLEAR REACTOR

#Concept:

- **reactions occur** that produce energy by fission. The heat thus produced can be used to produce electricity.
- The **main purpose of a reactor is to contain and control the energy released**.



- A nuclear reactor is the most important part of a nuclear power plant. It is where the **nuclear chain**
- **Uranium** is used as the nuclear fuel in the reactors.
- The heat produced by **nuclear reactions is used to convert the water into steam**, which is further converted into **carbon-free electricity** with the help of turbines.

Main Components of a Nuclear Reactor

Core	It contains all the fuel and generates the heat required for energy production.
Coolant	It passes through the core, absorbing the heat and transferring into turbines.
Turbine	Transfers energy into the mechanical form.
Cooling Tower	It eliminates the excess heat that is not converted or transferred.
Neutron Moderator	Moderators are used for reducing the speed of fast neutrons released from the fission reaction and making them capable of sustaining a nuclear chain reaction Usually, water, solid graphite, and heavy water are used as a moderator in nuclear reactors. Commonly-used moderators include regular (light) water (in 74.8% of the world's reactors), solid graphite (20% of reactors), heavy water (5% of reactors).
Containment	The enveloping structure that separates the nuclear reactor from the surrounding environment.
Neutron Poison	A neutron poison (also called a neutron absorber or a nuclear poison) is a substance with a large neutron absorption cross-section.

Types of Nuclear Reactor

Light Water Reactors (LWR)	○ LWR is a type of **Thermal Neutron Reactor**. ○ Uses **Normal Water** instead of Heavy Water as its coolant and Neutron Moderator. ○ BWR & PWR are Light Water Reactors. ○ The BWR drives the steam turbine when the reactor core **heats the water converting it into steam**. ○ The PWR drives the **steam turbine in two stages**. ○ **Pressurized water has a higher boiling point**. The reactor core heats the water without producing any steam in the core. ○ This pressurized hot water then exchanges heat with a **secondary low-pressure water** unit which turns into steam. ○ This steam drives the steam turbine.
Heavy Water Reactors	○ HWR is also a type of **Thermal Neutron Reactor**. ○ Uses **Heavy Water (deuterium oxide D2O)** as its coolant and Neutron Moderator. ○ The HWR follows the working principle of the Pressurized Water Reactor. ○ Even though **Heavy Water is very expensive**, it allows the nuclear reactor to operate without any fuel enrichment due to the enhanced neutron economy. ○ This also allows the Nuclear reactor to use alternate fuel cycles.
Gas-Cooled Reactors	○ In Gas-Cooled reactors, gas is replaced as a **coolant** and that drives the turbine. ○ These reactors are called **High-Temperature Gas-Cooled Reactors**

	(HTGRs). o Gases like **Helium & Carbon-Dioxide** are used as coolants. o HTGRs provide high thermal efficiency (Upto 50%) as they can operate at high temperatures. o HTGRs can have multiple applications other than power production which involve heat processes like hydrogen fuel cells, water desalination, oil refineries, etc. o Gas being, not the most efficient coolant, HTGRs need a highly- efficient back-up coolant.
Fast Reactors	o The reactors discussed above use moderators that slow the high-energy (fast) neutrons down to low-energy (slow). o Fast reactors don't use moderators and use Fast Neutrons. o To sustain the fission reaction by fast neutrons, the fission material needs to be highly enriched. o Uranium enrichment is very expensive thus making the use of Fast reactors uneconomical.

What is Critical Mass?

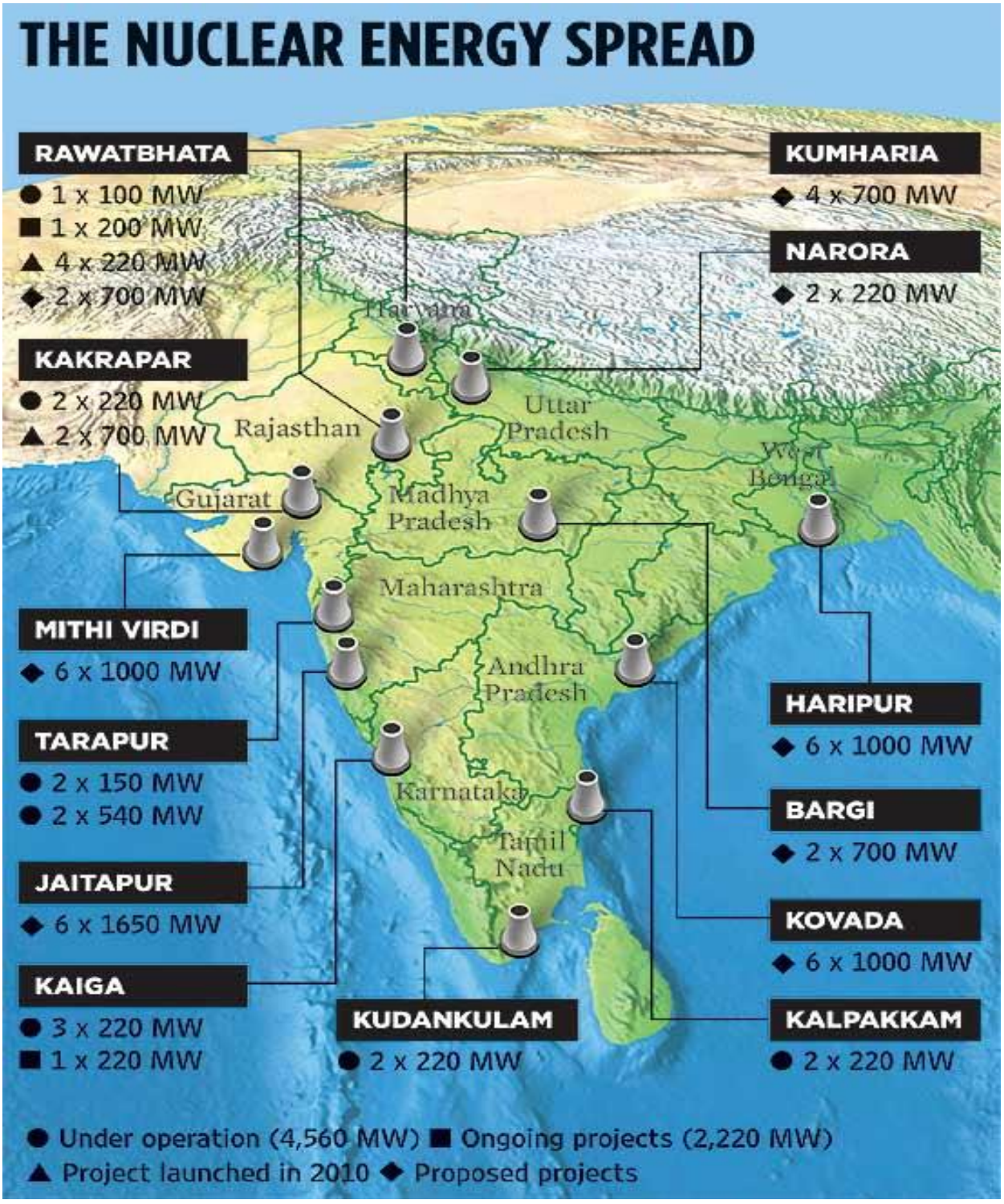
- A critical mass is the **smallest amount of fissile material needed for a sustained nuclear chain** reaction.
- The critical mass of a fissionable material depends upon its nuclear properties, its density, its shape, its enrichment, its purity, its temperature, and its surroundings.
- When a nuclear chain reaction in a mass of fissile material is self-sustaining, the mass is said to be in a critical state in which there is no increase or decrease in power, temperature, or neutron population.

NUCLEAR ENERGY

#Concept:

- India has consciously proceeded to explore the possibility of tapping nuclear energy for the purpose of power generation.
- In this direction a **three-stage nuclear power programme** was formulated by **Homi Bhabha in the 1950s.**
- The **Atomic Energy Act, 1962** was framed and implemented with the set objectives of using two naturally occurring elements Uranium and Thorium as nuclear fuel in Indian Nuclear Power Reactors.
- In December, 2021, the Government of India informed Parliament about building ten indigenous Pressurised Heavy Water Reactors (PHWRs) to be set up in fleet mode and had granted "in principle approval" for 28 additional reactors, including 24 to be imported from France, the U.S. and Russia.
- Recently, the Centre has given in-principle (first step) approval for setting up of six nuclear power reactors at **Jaitapur in Maharashtra**.

- Jaitapur would be the world's most powerful nuclear power plant. There would be six state-of-the-art Evolutionary Power Reactors (EPRs) with an installed capacity of 9.6 GWe that will produce low carbon electricity.

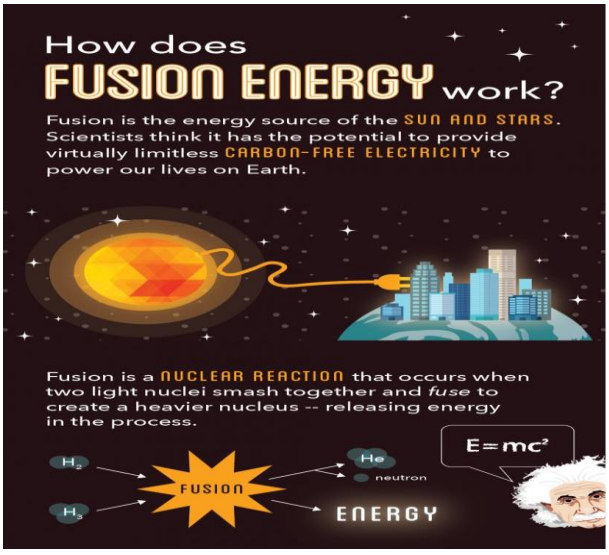


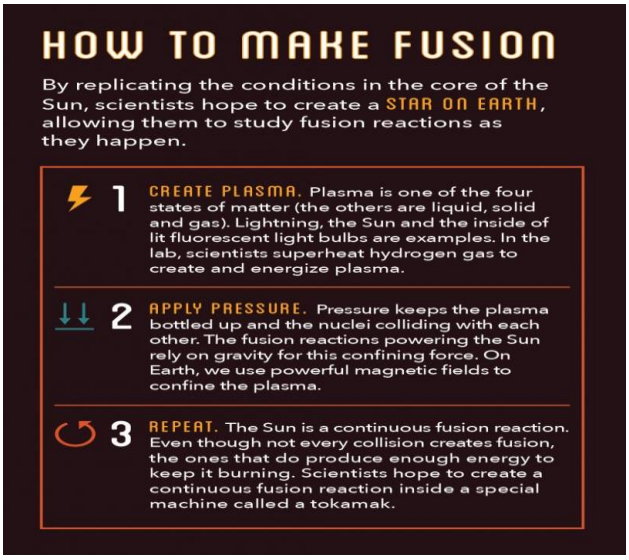
- The six nuclear power reactors, which will have a capacity of 1,650 MW each, will be set up with technical cooperation from France.

Challenges to Adoption of Nuclear Energy

Capital Intensive	Nuclear power plants are capital intensive and recent nuclear builds have suffered major cost overruns.
Insufficient Nuclear Installed Capacity	In 2008, the Atomic Energy Commission projected that India would have 650GW of installed capacity by 2050; the current installed capacity is only 6.78 GW.
Lack of Public Funding	Nuclear power has never received the quantum of generous subsidy the fossil fuel received in the past and renewable is receiving currently. In absence of public funding, nuclear power will find it tough to compete against natural gas and renewables in the future.
Acquisition of Land	Land acquisition and selection of location for Nuclear Power Plant (NPP) is also a major problem in the country. NPP's like Kudankulam in Tamil Nadu and Kovvada in Andhra Pradesh have met with several delays due to the land acquisition related challenges.
Impact of Climate Change	Climate change will increase the risk of nuclear reactor accidents. During the world's increasingly hot summers, several nuclear power plants have already had to be temporarily shut down or taken off the grid. Further, nuclear power plants depend on nearby water sources to cool their reactors, and with many rivers drying up, those sources of water are no longer guaranteed. The frequency of such extreme weather events is likely to increase in the future.
Nuclear Waste	Another side effect of nuclear power is the amount of nuclear waste it produces. Nuclear waste can have drastically bad effects on life, causing cancerous growths, for instance, or causing genetic problems for many generations of animals and plants.

NUCLEAR FUSION



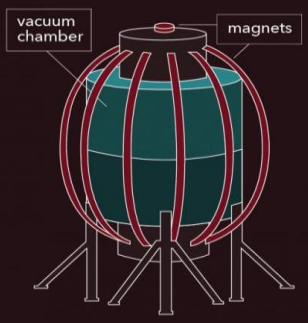


FUSION MACHINES

A TOKAMAK is an experimental machine designed to create and study fusion reactions. These machines generate a doughnut-shaped plasma in a vacuum chamber and heat it up until it's hotter than the center of the sun.

America's newest tokamak lives at the Department of Energy's PRINCETON PLASMA PHYSICS LABORATORY. And it just received a big upgrade.

- **100** MILLION DEGREE PLASMAS
- **2X** THE MAGNETIC FIELD OF ITS PREDECESSOR
- **2X** THE POWER TO HEAT THE PLASMA
- **5X** THE PLASMA LIFETIME
- **8** FAST CAMERAS TAKING UP TO 400,000 FRAMES PER SECOND
- **30** EXPERIMENTS PER DAY
- **60** RESEARCH INSTITUTIONS COLLABORATING



NSTX-U
National Spherical Torus Experiment - Upgrade

A FUSION POWER PLANT?

Creating fusion reactions in the lab takes a lot of energy. For fusion to work as a source of electricity, scientists need to learn how to harness a SELF-SUSTAINING PLASMA that produces more energy than what's needed to create it.

In a fusion power plant, the plasma's thermal energy would heat water, create steam and spin a turbine to generate electricity.



Unlike a traditional power plant, the fuel would practically NEVER RUN OUT.

The hydrogen isotope deuterium used as fuel is derived from ordinary seawater

FUTURE FUSION

Fusion faces several scientific and engineering challenges before it can power our homes and businesses. But if we harness fusion on Earth, this potentially limitless source of carbon-free electricity would be a GAME-CHANGER.

BENEFITS	CHALLENGES
1 Carbon-free	1 Sustaining plasma for months at a time
2 Abundant fuel	2 Developing materials to handle extreme temperatures
3 No chance of meltdown	3 Accelerating the pace to commercial power
4 Very little radioactive waste, which decays quickly	

ATOMIC ENERGY REGULATORY BOARD (AERB)

- The Atomic Energy Regulatory Board (AERB) was constituted on November 15, 1983, by the President of India by exercising the powers conferred by the **Atomic Energy Act, 1962** to carry out certain regulatory and safety functions under the Act.
- The regulatory authority of AERB is derived from the rules and notifications promulgated under the Atomic Energy Act, 1962 and the Environment Protection Act, 1986.
- AERB's headquarters is in Mumbai.
- The Atomic Energy Regulatory Board is the primary institution tasked to look at issues regarding everything related to nuclear safety. It was constituted on **15 November 1983** by the President of India by exercising the powers conferred by **Section 27 of the Atomic Energy Act, 1962**.
- The mission of the Board is to ensure that the use of ionizing radiation and nuclear energy in India does not cause undue risk to health and the environment. Currently, the Board consists of a full-time Chairman, an ex officio Member, three part-time Members, and a Secretary.

Functions of AERB

- Develop safety policies in nuclear, radiation, and industrial safety areas for facilities under its purview.
- Develop Safety Codes, Guides, and Standards for siting, design, construction, commissioning, operation and decommissioning of different types of nuclear and radiation facilities.
- Grant consents for siting, construction, commissioning, operation and decommissioning, after an appropriate safety review and assessment, for the establishment of nuclear and radiation facilities.
- Ensure compliance with the regulatory requirements prescribed by AERB.
- Prescribe the acceptance limits of radiation exposure to occupational workers and members of the public and acceptable limits of environmental releases of radioactive substances.
- Review the emergency preparedness plans for nuclear and radiation facilities.
- Prescribe the syllabi for training and review the training program, qualifications, and licensing policies for personnel of nuclear and radiation facilities.
- Maintain liaison with statutory bodies in the country as well as abroad regarding safety matters.
- Promote research and development efforts in the areas of safety.
- Notifying the public, the 'nuclear incident', occurring in the nuclear installations in India, as mandated by the Civil Liability for Nuclear Damage Act, 2010.

FACIAL RECOGNITION TECHNOLOGY (FRT)

#Concept: *To understand*

- Facial recognition is an algorithm-based technology which **creates a digital map of the face** by identifying and mapping an individual's facial features, which it then matches against the database to which it has access.
- The captured face along with its features is stored into a database, which can be integrated with any kind of software that may be used for security purposes, banking services, etc.

- In the **Automated Facial Recognition System (AFRS),** the large database (containing photos and videos of peoples' faces) is used to match and identify the person.
- Image of an unidentified person, taken from CCTV footage, is compared to the existing database using Artificial Intelligence technology, for pattern-finding and matching.

Uses:

1:1 verification:	○ The facial map is obtained for the purpose of matching it against the person's photograph on a database to authenticate their identity. ○ For example, **1:1 verification** is used to unlock phones.
1: n identification:	○ The facial map is obtained from a photograph or video and then matched against the entire database to identify the person in the photograph or video. ○ Law enforcement agencies such as the Delhi Police usually procure FRT for **1: n identification**.

Why is the Use of Facial Recognition Technology Harmful?

Inaccuracy & Misuse	○ Issues related to **"Misidentification"** due to inaccuracy of the technology. ○ Issues related to **"Mass Surveillance"** due to misuse of the technology.
Race & Gender	○ It has also been reported that its accuracy rates fall starkly based on race and gender. ○ This can result in a **false positive**, where a person is misidentified as someone else, or a false negative where a person is not verified as themselves. ○ Cases of a false positive result can lead to bias against the individual who has been misidentified.
Exclusion	○ Cases of false negative results can also lead to exclusion of the individual from accessing essential schemes which may use FRT as a means of providing access. ○ For example, failure of the biometric based authentication under Aadhaar which has led to many people being excluded from receiving essential government services which in turn has led to starvation deaths.
Violation to Privacy	○ Government although plans to address the question of privacy through the legal framework like data privacy regime, but keeping in mind the objectives it aims to achieve with the use of such technology, it comes into conflict with one another.
Reliability & Authenticity	○ As the data collected may be used in the court of law during the course of a criminal trial, the reliability and the admissibility of the data along with the standards and procedure followed would be taken into consideration.
Absence of Data Protection Law	○ FRT systems in the absence of data protection laws that would mandate necessary safeguards in the collection and storage of user data is also a point

	of concern.

Way Forward

- In this digital age, data is a valuable resource that should not be left unregulated. In this context, the time is right for India to have a robust data protection regime.
- The government would also have to respect the privacy of the citizens while strengthening the right to information.
- Additionally, the technological leaps made in the last two to three years also need to be addressed knowing that they have the capacity to make the law redundant.
- Given the size of India's population and comparatively understaffed administration, the well-planned use of such nascent technology is a probable solution, provided there are sufficient safeguards to address its inherent concerns including the issue of privacy.

NANO UREA FERTILISER

***#News:** Recently, the Ministry of Chemicals and Fertilizers allowed commercial use of Nano urea. The Prime Minister recently inaugurated the country's first liquid nano urea plant at Kalol.*

- Nano urea is a **liquid fertilizer developed by IFFCO.** It is an alternative to conventional urea.
- It is essentially urea in the form of a nanoparticle.
- Urea is a chemical nitrogen fertilizer, white in colour, which artificially provides nitrogen, a major nutrient required by plants.
- **Aim:** It aims to reduce farmers' dependence on packaged urea.
- **Fertiliser Control Order (FCO) 1985:** It is based on existing rules that provisionally allow fertilizers to be used based on data from only two cropping seasons.
- The usual practice for recommending or rejecting a new fertilizer for commercial use required three seasons of independent assessment by the Indian Council of Agricultural Research (ICAR), but in the case of nano urea this was reduced to two.

Potential benefits

Shelf life	○ It has a shelf life of a year and farmers need not be worried about "caking" when it comes in contact with moisture.
Pricing	○ It comes in a half-litre bottle priced at Rs 240, and carries no burden of subsidy currently. ○ By contrast, a farmer pays around Rs 300 for a 50-kg bag of heavily subsidised urea.
Efficiency	○ The conventional urea has an efficiency of about 25 percent; the efficiency of liquid nano urea can be as high as 85-90 per cent.
Absorption	○ Liquid nano urea is sprayed directly on the leaves and gets absorbed by the plant. ○ Fertilisers in nano form provide a targeted supply of nutrients to crops, as they are absorbed by the stomata, pores found on the epidermis of leaves.

Lower subsidy Bill	○ It will reduce the country's subsidy bill and it is aimed at reducing the unbalanced and indiscriminate use of conventional urea.
Other benefits	○ Application of Nano Urea results in better crop productivity. ○ This is regarded as an excellent alternative to chemical fertilisers because it promotes growth and reduces environmental pollution. ○ Nano-fertilisers also reduce the crop cycle period and increase crop yield. ○ The unique properties of nanoparticles, such as high absorption capacity, the increased surface to volume ratio, and controlled-release kinetics to targeted sites, make them a potential plant growth enhancer.

Properties	Nano fertilizers	Conventional fertilizers
Solubility and dispersion of mineral micronutrients	Improve solubility and dispersion of insoluble nutrients in soil, reduce soil absorption and fixation and increase the bioavailability	Less bioavailability to plants due to large particle size and less solubility
Nutrient uptake efficiency	Might increase fertilizer efficiency and uptake ratio of the soil nutrients in crop production and save fertilizer resource	Bulk composite is not available for roots and decrease efficiency
Controlled-release modes	Release rate and release pattern of nutrients for water-soluble fertilizers might be precisely controlled through encapsulation in envelope forms	Excess release of fertilizers may produce toxicity and destroy ecological balance of soil
Effective duration of nutrient release	Nanofertilizers can extend effective duration of nutrient supply of fertilizers into soil	Used by the plants at the time of delivery, the rest is converted into insoluble salts in the soil
Loss rate of fertilizer nutrients	Reduce loss rate of fertilizer nutrients into soil by leaching and/or leaking.	High loss rate by leaching, rain off and drift.

Limitations of Nano-Fertilisers

- Lack of a nano-fertiliser risk management system
- Lack of production and availability of nano fertilisers in required quantities. This limits the wider scale adoption of nano-fertilisers as a source of plant nutrients.
- The high cost of nano fertilisers.
- Lack of standardisation in the formulation process. This brings about different results of the same nanomaterial under various pedoclimatic conditions.

BONE MARROW TRANSPLANT

#Concept: *To understand*

- *A **bone marrow transplant is a medical treatment that replaces your bone marrow with healthy cells.** The replacement cells can either come from your own body or from a donor.*
- *A bone marrow transplant **is also called a stem cell transplant** or, more specifically, a **hematopoietic stem cell transplant**.*
- *Transplantation can be used to treat certain types of cancer, such as leukemia, myeloma, and lymphoma, and other blood and immune system diseases that affect the bone marrow.*

What are stem cells? What is bone marrow?

- Stem cells are **special cells that can make copies of themselves** and change into the many different kinds of cells that your body needs. There are several kinds of stem cells and they are found in different parts of the body at different times.
- Cancer and cancer treatment can damage your hematopoietic stem cells.
- **Hematopoietic stem cells are stem cells that turn into blood cells**.
- **Bone marrow is soft, spongy tissue** in the body that contains hematopoietic stem cells. It is found in the centre of most bones.
- Hematopoietic stem cells **are also found in the blood** that is moving throughout your body.
- When hematopoietic stem cells are damaged, they may not become red blood cells, white blood cells, and platelets. These blood cells are very important and each one has a different job:

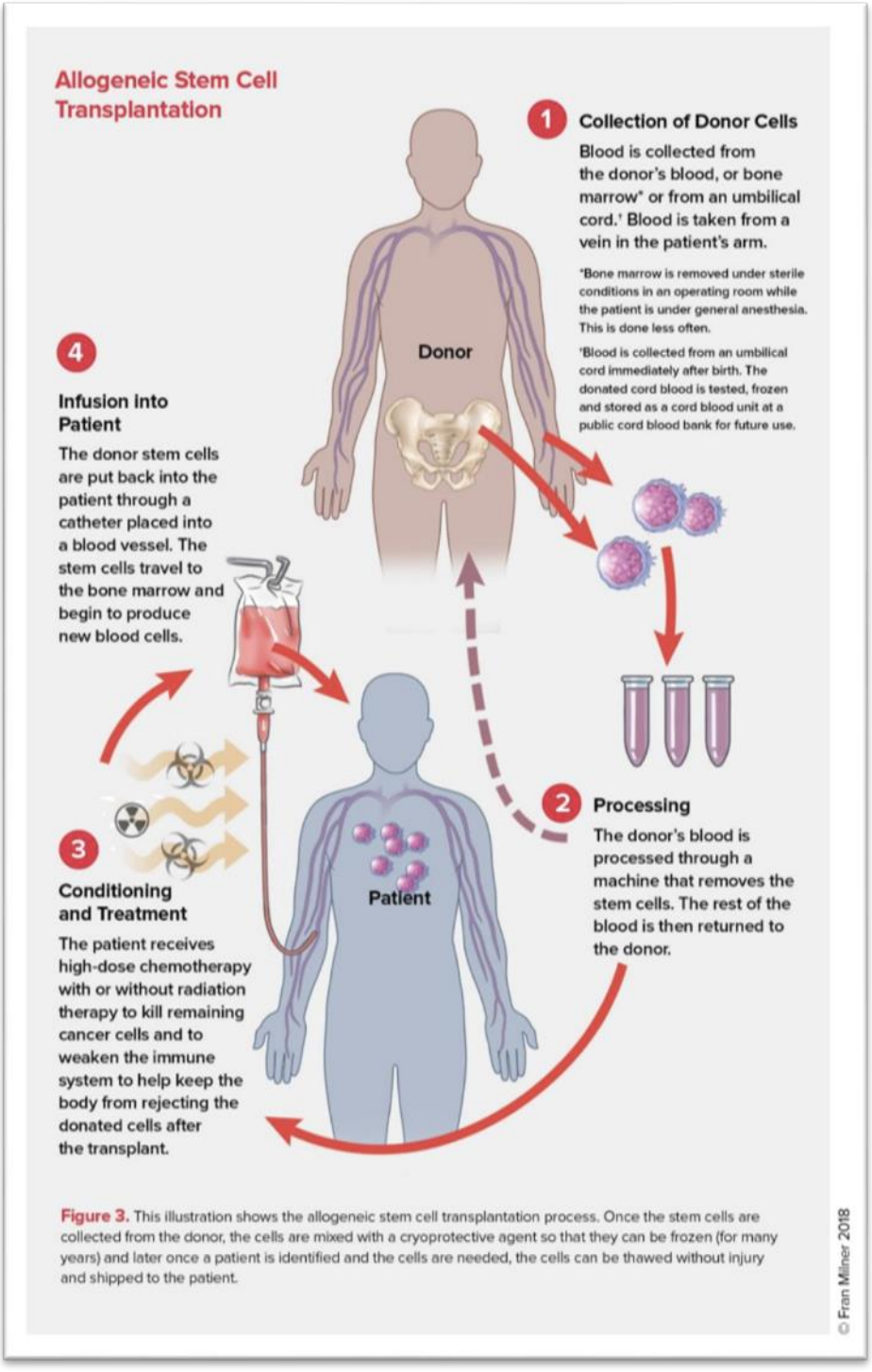


Figure 3. This illustration shows the allogeneic stem cell transplantation process. Once the stem cells are collected from the donor, the cells are mixed with a cryoprotective agent so that they can be frozen (for many years) and later once a patient is identified and the cells are needed, the cells can be thawed without injury and shipped to the patient.

- **Red blood cells carry oxygen** throughout your body. They also take carbon dioxide to your lungs so that it can be exhaled.
- **White blood cells are a part of your immune system**. They fight pathogens, which are the viruses and bacteria that can make you sick.
- **Platelets form clots to stop bleeding**.

- A bone marrow/stem cell transplant is a medical procedure by which healthy stem cells are transplanted into your bone marrow or your blood. This restores your body's ability to create the red blood cells, white blood cells, and platelets it needs.

What are the different types of transplant?

- There are different types of bone marrow/stem cell transplants. The 2 main types are:

- **Autologous transplant**. Stem cells for an autologous transplant **come from your own body.** Sometimes, cancer is treated with a high-dose, intensive chemotherapy or radiation therapy treatment. This type of treatment can damage your stem cells and your immune system. That's why doctors remove, or rescue, your stem cells from your blood or bone marrow before the cancer treatment begins.
- After chemotherapy, the stem cells are returned to your body, restoring your immune system and your body's ability to produce blood cells and fight infection. This process is also called an **AUTO transplant or stem cell rescue**.

- **Allogenic transplant.** Stem cells for an allogenic transplant **come from another person,** called a donor. The donor's stem cells are given to the patient after the patient has chemotherapy and/or radiation therapy. This is also called an **ALLO transplant**.
- Many people have a "graft-versus-cancer cell effect" during an ALLO transplant. This is when the new stem cells recognize and destroy cancer cells that are still in the body. This is the main way ALLO transplants work to treat the cancer.
- Finding a "donor match" is a necessary step for an ALLO transplant. A match is a healthy donor whose blood proteins, called **human leukocyte antigens (HLA),** closely match yours. This process is called HLA typing.

DRS TECHNOLOGY

- The Decision Review System(DRS) is a technology based system in cricket to assist the match officials with their decision making.
- Using UDRS (Umpire's Review) the on-field umpire can take help of Third Umpire and players may request the Third Umpire to consider a decision of the on field umpires using DRS (Player's Review).
- The technologies used in Decision Review System are Television Replays, The Ball Tracking technology used to track the path of the ball, Microphones, Snickometer, Infra-Red imaging to detect temperature changes as the ball hits the pad or the bat. The Technologies Used in Decision Review System are:

1. **TELEVISION REPLAYS**: including Slow Motion which is mainly used to check whether the catch is cleanly taken or not.
2. **HAWK EYE:** Ball Tracking technology that plots the **trajectory of a bowling delivery** that has been interrupted by the batsmen/batswomen often by the pad and predict whether it would have hit the stumps or not. This technology is mainly used for **Leg Before Wicket(LBW) decisions** where the umpire can check whether the impact of the ball is in line to the stumps, whether the ball is hitting the stumps, and whether the ball is pitching outside the leg stump or not. These three conditions are mandatory for LBW decision which is reviewed using Hawk Eye Technology.

3. **SNICKOMETER:** Directional microphones to detect small sounds made as the ball passes the bat or the pad. It is mainly used for caught behind and LBW decisions. If the Snickometer shows spikes while passing the bat then it indicates that the ball has hit the bat which can be used for both caught behind and LBW decisions.
4. **HOTSPOT:** Infra-Red imaging system that shows where the ball has been in contact with the pad or the bat. It mainly shows the point of contact between the ball, bat and pad. It is mandatorily used to check whether the ball has hit the pad or the bat first in case of LBW and checks whether the ball has hit the bat or not in case of caught behind. It can be said as a substitute to Snickometer.

Shield IAS

INDIAN POLITY

(Constitution; Polity and Governance)

RULE OF LAW

***#Concept:** To understand*

- The rule of law embodied in Article 14 is the **" Basic feature"** of the Indian constitution. Hence it cannot be destroyed even by an amendment of the constitution under article 368 of the constitution.

Meaning of rule of Law

- It means that no man is above the law, all are equal in eye of law. The concept of rule of law come from Magnacarta.
- Its means that **law is equal for all in same line**. Because state have no religion all are equal in same line. And uniformity will be applied for all. Every organ of the state under the constitution of India is regulated and controlled by the rule of law.
- **Absence of arbitrary power** has been held to be the first essential of rule of law. The rule of law requires that the discretion conferred upon executive authorities must be contained within clearly define limits. The rule of law permeates the entire fabrics of the constitution of India and it forms one of its basic features.

Article 361 of Indian constitution Law

- The President, or the governor or rajpramukh of a state, shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him In the exercise and performance of those power and duties. Provided that the conduct of the president may be brought under review.

361. Protection of President and Governors and Rajpramukhs.—

1) The President, or the Governor or Rajpramukh of a State, shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him in the exercise and performance of those powers and duties:

Provided that the conduct of the President may be brought under review by any court, tribunal or body appointed or designated by either House of Parliament for the investigation of a charge under article 61: Provided further that nothing in this clause shall be construed as restricting the right of any person to bring appropriate proceedings against the Government of India or the Government of a State.

2) No criminal proceedings whatsoever shall be instituted or continued against the President, or the Governor of a State, in any court during his term of office.

3) No process for the arrest or imprisonment of the President, or the Governor of a State, shall issue from any court during his term of office.

4) No civil proceedings in which relief is claimed against the President, or the Governor of a State, shall be instituted during his term of office in any court in respect of any act done or purporting to be done by him in his personal capacity, whether before or after he entered upon his office as President, or as Governor of such State, until the expiration of two months next after notice in writing has been delivered to the President or the Governor, as the case may be, or left at his office stating the nature of the proceedings, the cause of action therefor, the name, description and place of residence of the party by whom such proceedings are to be instituted and the relief which he claims.

In **Srinivas Theatre v. state of T.N., Reddy, J.,** has noted that equality before law is a dynamic concept having many facets. One of them there is that there shall be no privileged person of class and name shall be above state law. A fact there of is the obligation upon the state to bring about, through the machinery of law, a more equal society envisaged by the preamble and part 4th (directive principles of state policy) of the Indian constitution.

RULE OF LAW vs. RULE BY LAW

\# ***Concept:*** *To understand*

Opinion of CJI

- **Former CJI N V Ramana stated:** The former is what we fought for *(Rule of Law)*, the latter is an instrument of colonial rule *(Rule by Law)*. In the face of a pandemic, it's important to reflect on how the tension between the two defines the quality of justice.
- When talking about Rule of Law, it is necessary to first understand what the law is. **Law, in its most general sense, is a tool of social control that is backed by the sovereign.** However, is this definition complete in itself? I would think not. Such a definition of law makes it a double-edged sword. It can be used not only to render justice, it can also be used to justify oppression.
- What is clear is that both these thoughts highlight certain facets of what is meant by the term "law". I think that any **law backed by a sovereign must be tempered by certain ideals or tenets of justice**. Only a state that is governed by such law, can be said to have the Rule of Law.
- The British colonial power used the law as a tool of political repression, enforcing it unequally on the parties, with a different set of rules for the British and for the Indians. It was an enterprise famous for "Rule by Law", rather than "Rule of Law", as it aimed at controlling the Indian subjects. Our struggle for independence thus marked our journey towards the establishment of a state defined by the Rule of Law... A framework was needed to ensure this. The framework that forms the binding link between law and justice in this country. That is what "**We the people" gave to ourselves in the form of the Constitution.**

Many conceptions of Rule of Law have emerged... It would be relevant to emphasise **four principles.**

- The **first principle is that "laws must be clear and accessible**,"...(that) the people at least ought to know what the laws are. There cannot, therefore, be secretive laws, as laws are for society. Another implication of this principle is that they should be worded in simple, unambiguous language.

- The **second principle relates to the idea of "equality before the law"…** An important aspect of equality before law is having equal access to justice. This guarantee of equal justice will be rendered meaningless if the vulnerable sections are unable to enjoy their rights because of their poverty or illiteracy or any other kind of weakness.

  - Another aspect is the issue of **"gender equality".** The legal empowerment of women not only enables them to advocate for their rights and needs in society, but it also increases their visibility in the legal reform process and allows their participation in it. Bias and prejudice necessarily lead to injustice, particularly when it relates to minorities. Consequently, the **application of the principles of Rule of Law in respect of vulnerable sections has to necessarily be more inclusive of their social conditions** that hinder their progress.

- This leads me to the **third principle,** the "right to participate in the creation and refinement of laws". The very essence of a democracy is that its citizenry has a role to play, directly or indirectly, in the laws that govern them. In India, it is done through elections where the people get to exercise their universal adult franchise to elect the people who form part of Parliament which enacts laws.

  - In spite of large-scale inequalities, illiteracy, backwardness, poverty and alleged ignorance, the people of independent India have proved themselves to be intelligent and up to the task. The masses have performed their duties reasonably well. Now, it is the turn of those who are manning the key organs of the state to ponder if they are living up to the constitutional mandate.
  - **Note:** It has always been well-recognised that the **mere right to change the ruler, once every few years, by itself need not be a guarantee against tyranny**. The idea that people are the ultimate sovereign is also to be found in notions of human dignity and autonomy. A public discourse that is both reasoned and reasonable is to be seen as an inherent aspect of human dignity and hence essential to a properly functioning democracy.

- The **idea of the judiciary, as a "guardian" of the Constitution, brings me to the fourth and final principle**: The presence of a **"strong independent judiciary".**
- The judiciary is the primary organ which is tasked with ensuring that the laws that are enacted are in line with the Constitution. This is one of the main functions of the judiciary, that of **judicial review of laws**. The Supreme Court has held this function to be a part of the basic structure of the Constitution, which means that Parliament cannot curtail the same.
- But the importance of the judiciary shouldn't blind us to the fact that the responsibility of safeguarding constitutionalism lies not just with the courts. **All the three organs of the state, i.e., the executive, legislature and the judiciary, are equal repositories of constitutional trust.** The role of the judiciary and scope of judicial action is limited, as it only pertains to facts placed before it.

  - This limitation calls for other organs to assume responsibilities of upholding constitutional values and ensuring justice in the first place, with the judiciary acting as an important check.
  - For the judiciary to apply checks on governmental power and action, it has to have complete freedom. **The judiciary cannot be controlled, directly or indirectly, by the legislature or the executive, or else the Rule of Law would** become illusory.

LOKPAL

Concept: *To understand*

- **The Lokpal & Lokayukta Act, 2013** provides for the establishment of a body of Lokpal for the Union and Lokayukta for States to inquire into allegations of corruption against certain public functionaries.
- The Act provides for an **Enquiry Wing** and a **Prosecution Wing** headed by their respective Directors. The inquiry wing conducts preliminary inquiry into any offence alleged to have been committed by a public servant punishable under the Prevention of Corruption Act, 1988.
- **The Prosecution Wing** headed by the Director **can file a case** in accordance with the findings of investigation report, before the **Special Court** for prosecution of public servants in relation to any offence punishable under the Prevention of Corruption Act, 1988.
- Jurisdiction of the Lokpal Act includes offices of Prime Minister, Ministers, members of Parliament, officers belonging to Group A, B, C and D and officials of Central Government.

Inquiry on Receipt of Complaint

- The Lokpal on receipt of a complaint, may **order preliminary inquiry** against any **public servant** by its Inquiry Wing or any agency including the Delhi Special Police Establishment.
- A complaint under the Lokpal Act should be in the prescribed form and must pertain to an offence under the Prevention of Corruption Act against a public servant.
- There is no restriction on who can make such a complaint. When a complaint is received, the Lokpal may order a preliminary inquiry by its **Inquiry Wing,** or refer it for investigation by any agency, including the CBI.
- In respect of public servants belonging to **Group A and Group B** - shall submit its report to the **Lokpal.** In case of public servants belonging to **Group C and Group D** - the Commission shall proceed in accordance with the provisions of the **Central Vigilance Commission Act, 2003.**
- The Act also provides for creation of **Special Courts** to hear and decide the cases arising out of the Prevention of Corruption Act, 1988 or under the Lokpal Act involving public servants.
- The Special Courts shall ensure completion of each trial **within a period of one year** from the date of filing of the case in the Court.

Jurisdiction of Lokpal

- Lokpal can make enquiries into allegations of corruption against Prime Minister, Ministers, members of Parliament, Groups A, B, C and D officers, officials of Central Government, chairpersons, members, officers and directors of any board, corporation, society, trust or autonomous body either established by an Act of Parliament or wholly or partly funded by the Centre.
- It also covers any society or trust or body that receives foreign contribution above Rs.10 lakhs.

Charges against the PM

- The Lokpal cannot inquire into any corruption charge against the Prime Minister if the allegations are related to international relations, external and internal security, public order, atomic energy and space, unless a full Bench of the Lokpal, consisting of its chair and all members, considers the initiation of a probe, and at least two-thirds of the members approve it.
- Any such inquiry shall be held in camera and if the Lokpal comes to the conclusion that the complaint deserves to be dismissed, the records of the inquiry shall not be published or made available to anyone.

Expenses of Lokpal to be charged on Consolidated Fund of India

- The administrative expenses of the Lokpal, including all salaries, allowances and pensions payable to or in respect of the Chairperson, Members or Secretary or other officers or staff of the Lokpal, shall be charged upon the Consolidated Fund of India and any fees or other moneys taken by the Lokpal shall form part of that Fund.

PREVENTION OF CORRUPTION ACT, 1988

#Concept: *To understand*

- The Prevention of Corruption Act was enacted in order to fight corruption and other malpractices in government and public sector business in India.
- Under **PCA, 1988** the Central Government has the power to appoint judges to investigate and try those cases where the following offences have been committed.

Offences punishable under the act

The following are the offences specified under the Prevention of Corruption Act as well as their subsequent punishments:

Offences	Punishments
Taking gratification other than legal remuneration	Those found guilty shill face imprisonment of 6 months extendable upto 5 years. A fine shall also be levied
Taking gratification with the purpose of influencing a public servant, through illegal and corrupt means	Imprisonment for not less than three years which is expandable upto seven years. A fine shall also be levied.
Taking gratification with the purpose of wielding personal influence with public servant	Imprisonment not less than 6 months extendable upto 5 years. A fine shall also be levied
Act of criminal misconduct by the public servant	Imprisonment not less than 1year expandable upto 7 years. A fine shall also be levied

Investigation shall be done by a police officer not below the rank of:

- In the case of Delhi, of an Inspector of Police.

- In metropolitan areas, of an Assistant Commissioner of Police.
- Elsewhere, a Deputy Superintendent of Police or an officer of equivalent rank shall investigate any offence punishable under this Act without the order of a Metropolitan Magistrate or a magistrate of first class, or make any arrest therefore without a warrant.

Amendments to the Prevention of Corruption Act, 1988

- Two amendment acts have been passed for the Prevention of Corruption Act, 1988. One in 2013 and the other in 2018.
- The highlights of both the amendment acts are given below:

- Bribery was made a **punishable offence**. A person who was compelled to bribe, should he/she report this incident to the law enforcement within seven days shall not be charged under the Prevention of Corruption Act.
- Two types of offences were covered under the amended criminal misconduct. The offences are illicit enrichment as in amassing wealth disproportionate to one's income sources and fraudulent misappropriation of property.
- The amendments were made taking prior approval of the relevant government authority to conduct any investigation regarding any offences allegedly conducted by public cases. However, if the offender has been arrested on the spot for taking bribes, then this approval is not needed.
- The **Trial Limit for cases under PCA was fixed within two years** if it is handled by a special judge. The total period for the trial should last only four years.

Highlights of the 2018 amendment act are as follows:

- Bribery is a specific and a direct offence
- Anyone taking bribes will **face imprisonment for 3 to 7 years** along with being levied a fine
- Those giving bribes can also be punished with imprisonment for upto 7 years and levied a fine.
- The 2018 amendment creates a provision to protect those who have been forced to pay a bribe in the event the matter is reported to law enforcement agencies within 7 days.
- It redefines criminal misconduct and will now only cover misappropriation of property and possession of disproportionate assets.
- It proposes a 'shield' for government servants, including those retired, from prosecution by making it mandatory for investigating agencies such as the Central Bureau of Investigation to take prior approval from a competent authority before conducting an inquiry against them.
- However, it states that such permissions shall not be necessary for cases involving the arrest of a person on the spot on the charge of accepting or attempting to accept any undue advantage for himself or for any other person.
- In any corruption case against a public servant, the factor of "undue advantage" will have to be established.
- The trial in cases pertaining to the exchange of bribes and corruption should be completed within two years. Further, even after reasoned delays, the trial cannot exceed four years.
- It covers bribe-giving commercial organisations to be liable for punishment or prosecution. However, charitable institutions have been left out of their ambit.

- It provides powers and procedures for the attachment and forfeiture of a corruption-accused public servant's property.

CENTRAL VIGILANCE COMMISSION

#Concept: *To understand*

- It is an agency **constituted to curb corruption in offices of the Indian government**. Complaints from whistleblowers (an employee of the firm/public office informing the public about frauds/wrongdoings in the office) under 'Whistleblower Resolution' are received by CVC after which the commission can take actions on motivated acts.
- CVC is called the **apex vigilance institution**. It is free of control from any executive authority. Its role is to monitor all vigilance activity under the Central Government and advising various authorities in Central Government organizations in planning, executing, reviewing and reforming their vigilance work.

Facts about CVC Members:

- President of India appoints CVC members by warrant under his hand and seal.

The President's appointment comes after the recommendation by a three-member committee:

- Prime Minister
- Minister of Home Affairs (MHA)
- Leader of Opposition in Lok Sabha
- Term of Office: Four years or if they attain 65 years of age (whichever is earlier)
- After they retire, they are not eligible for reappointment in any central or state government agency.

The following are the works of CVC members:

- They inquire or investigate whenever a public servant (Central Government employee) commits an offence under the Prevention of Corruption Act, 1988.
- Members of all-India services **serving in the Union and Group 'A' officers** of the Central government
- They direct Delhi Special Police Establishment in investigative cases related to the Prevention of Corruption Act, 1988
- They review the progress of investigations conducted by the Delhi Special Police Establishment in cases related Prevention of Corruption Act, 1988
- They review the progress of those applications that are pending with competent authorities for sanction under the Prevention of Corruption Act, 1988
- Central Government and its authorities are advised on matters as they refer to CVC members
- They also superintend vigilance departments of government ministries
- They undertake or cause an inquiry into complaints received under Whistleblower Resolution and recommend appropriate action.

- Whenever the central government makes rules and regulations governing the vigilance and disciplinary matters relating to members of Central Services and All-India Services, CVC is consulted.
- CVC members are part of the selection committee which is responsible to recommend the appointment of the Director of Enforcement (ED.)
- CVC is a part of the selection committee that recommends officers for appointments to the posts above the level of Deputy Director of Enforcement.
- The Commission acts as an authority to receive information that is related to suspicious transactions under the Prevention of Money Laundering Act, 2002
- It recommends to Central Government for the appointment of Director of Prosecution in Central Bureau of Investigation
- CVC members are part of a selection committee that is responsible to recommend the appointment of officers to the posts of the level of SP and above in the CBI except for the Director of CBI
- Lokpal refers complaints to CVC who initiate a preliminary inquiry in respect of officers and officials of Groups A, B, C & D

HECKLER'S VETO

The heckler's veto is a process by which socially powerful groups can shut down critical or inconvenient speech by threatening public disorder or disturbance. Thus, heckler's veto is often used by a section of critics to silence free speech because such section does not believe or opposes the content of such free speech which is not illegal in a rule based society.

Who is a Heckler?

- In free speech jurisprudence, there is a concept called a "heckler's veto". It means the ability, but not the right of a private actor (citizen, group, political party, organisation etc.), the heckler, to be loud and obnoxious enough to obscure the free speech of others.
- By pattern, a heckler is someone who is unable to defend his argument by legitimate use of facts, logic and reason. The term "heckler's veto" is shorthand for the proposition that people who don't like an idea get to veto its expression by threatening public safety.
- Heckler's Veto is also used to silence critics or those expressing dissenting, unpopular or minority views. It is generally used to censor books, art forms, movies, songs etc. if such creative work is shown to hurt cultural or religious feeling of a particular group.

CENTRAL CIVIL SERVICES (CONDUCT) RULES

- The Conduct Rules clearly define the **standards that the Government expects** of its employees.
- Rules of conduct apply to a **government employee's personal and professional lives**.
- An official may receive a warning, disciplinary action, or departmental proceedings if he violates the conduct rules.
- The majority of India's bureaucracy's conduct rules make sure that officers **don't reveal sensitive information, criticise the government, or adopt a political stance.**

- The All India Service (Conduct) Rules, 1968 govern employees in the administrative, police, and forest services.
- The Central Civil Service (Conduct) Rules, 1964 govern employees in the Indian Revenue Service, Indian Information Service, Indian Customs & Central Excise Service, Indian Postal Service, Indian Audit & Accounts Service, etc.
- Although they are all essentially similar, some services, like the Indian Railway Service, have their own set of conduct guidelines.
- Some provisions are used more frequently than others due to their ambiguity, even though conduct rules attempt to regulate the behaviour of officers in a variety of contexts (for example, receiving dowry and drinking in public places are prohibited).

Rule 3 of AIS Conduct Rules

- The AIS Conduct Rules' Rule 3 is the broadest and most ambiguous. Every service member "shall at all times maintain absolute integrity and devotion to duty and shall do nothing which is unbecoming of a member of the service," states Rule 3(1).
- Every officer is required to uphold the following, according to a sub-section of the rule:

- high ethical standards,
- integrity and honesty,
- political neutrality,
- the promotion of the meritocratic principles,
- fairness and impartiality in the performance of duties,
- accountability and transparency,
- responsiveness to the public,
- especially to the weaker sections, and
- Courtesy and good behaviour with the public.

Rule 7 of the AIS Conduct Rules

- No member of the service may criticise any policy or action of the central or state governments on a radio broadcast, in communications over any public media, in any document, in communications to the press, or in any public utterance, in accordance with Rule 7 of the AIS Conduct Rules.
- Additionally, they are forbidden from saying anything "that has the effect of being a negative criticism of any recent or current policy or action of the central government or a state government" or "that is capable of embarrassing the relations between the central government and any state government."
- The central government attempted to include social media too in the ban in 2016.
- Anything "unbecoming" of a civil servant is forbidden

Rule 9 of the Central Civil Services (Conduct) Rules

- No government employee is allowed to "make any statement of fact or opinion which has the effect of an adverse criticism of any current or recent policy or action of the Central Government or a State Government," according to Rule 9 of the Central Civil Services (Conduct) Rules.

Role as civil servant

- The duty of a civil servant is to uphold the **rule of law and constitutional principles** in letter and spirit.
- Dilemma of disagreement vs put a resolution into action
- Everyone in a democracy has the freedom to voice their opinions, to disagree, and to dissent.
- A similar statement could be made about an IAS officer, who might have a right to disagree.
- You must put a resolution into action after it has been approved. You are not being true to yourself if you don't put it into practise. That is a razor's edge, and balancing the two interests is also a challenge.
- The Constitution of this nation guarantees the citizens of this nation the fundamental right to free speech, subject to reasonable limitations in the interest of preserving the state's sovereignty, international relations, health, morality, etc.
- However, when you work for the government, you are bound by certain disciplinary laws.
- Because of this, a government employee is prohibited from joining any political organizations or organizations of a similar nature or from speaking out freely about issues relating to national governance.

Criticism

- The rules are subjective and vaguely defined.
- It is a guideline, not a statute. The Constitution doesn't mention it.
- The Constitution guarantees the right to free speech, but these Conduct Rules must be followed for an organisation to function, and they are therefore imposed.
- This law dates back to the British era.
- Without a doubt, the British were extremely strict and did not want their officers to criticise the poor leadership.
- However, in a democracy, the **right to criticise the government is an inalienable right** that cannot be restricted.
- Every institution is subject to democratic norms in a democracy. A public institution is better governed when it receives constructive criticism.

ARTICLE 19(1)(A)- RIGHT TO FREEDOM OF SPEECH AND EXPRESSION.

- Article 19(1)(a) states that all citizens have the **right to freedom of speech and expression**.
- This means that every citizen has the freedom to openly express their thoughts and opinions.

- This includes not just spoken words, but also written words, photographs, videos, banners, and other forms of communication.
- The **right to speak includes the right to remain silent**.
- This right is solely available to Indian citizens, not to foreign nationals.
- The Supreme Court of India has ruled that sports participation is a form of self-expression and thus a type of freedom of speech.
- This right is not absolute, and it allows the government to enact laws that impose reasonable restrictions in the interests of India's sovereignty and integrity, the state's security, friendly relations with foreign states, public order, decency, and morality, as well as contempt of court, defamation, and incitement to an offence.
- The Right to Information (RTI) is a basic right, according to this interpretation.
- The Supreme Court has also declared that freedom of expression is an intrinsic right that goes hand in hand with the right to life (Article 21). These two rights are not mutually exclusive.
- Commercial and artistic speech and expression are included in this freedom.

ARTICLE 33

- The members of the armed forces, paramilitary forces, police forces, intelligence agencies, and analogous forces have their fundamental rights subject to restrictions or abrogation under Article 33 of the Constitution. The purpose of this clause is to guarantee that they carry out their responsibilities properly and that there is discipline among them.
- The purpose of this is to guarantee that they carry out their responsibilities properly and that there is discipline among them.
- Only Parliament has been granted the power to make laws under article 33
- Any such law passed by the parliament cannot be contested in a court on the grounds that it violates a fundamental right.
- As a result, the Army Act from 1950, the Navy Act from 1950, the Air Force Act from 1950, the Police Forces (Restriction of Rights) Act from 1966, the Border Security Force Act, and other laws have been passed by the Parliament.
- These impose limitations on their freedom of speech, right to association, right to membership in political or labour unions, right to press contact, right to attend public gatherings or demonstrations, etc.

ATTORNEY GENERAL OF INDIA

- **Article 76** of the constitution mentions that he/she is the **highest law officer of India**. As a chief legal advisor to the government of India, he advises the union government on all legal matters.
- He also is the primary lawyer representing Union Government in the Supreme Court of India. The Attorney General, like an Advocate General of a State, is not supposed to be a political appointee, in spirit, but this is not the case in practice.
- The Attorney General (AG) of India is a **part of the Union Executive**. He can be part of any court in the Indian Territory.

- He got the right to speak and to take part in the proceedings of both the Houses of Parliament (Read about the difference between Lok Sabha and Rajya Sabha here) or their joint sitting and any committee of the Parliament of which he may be named a member
- He has no right to vote when he participates in the proceedings of the Indian Parliament
- Similar to Member of Parliament, he also enjoys all powers related to immunities and privileges
- He is **not considered as a government servant.**
- He **can practise privately too** as he is not debarred from private legal practice.
- The Attorney General has the right to speak and to take part in the proceedings of both the Houses of Parliament or their joint sitting and any committee of the Parliament of which s/he may be named a member but without a right to vote.

President of India appoints a person who is qualified for the post of Supreme Court Judge. Attorney General is appointed by the President on the advice of the government. There are the following qualifications:

- He should be an Indian Citizen
- He must have either completed 5 years in High Court of any Indian state as a judge or 10 years in High Court as an advocate
- He may be an eminent jurist too, in the eye of the President
- There is no fixed term for the Attorney General of India. The Constitution mentions no specified tenure of Attorney General. Similarly, the Constitution also does not mention the procedure and ground of his removal.

- He can be removed by the President at any time
- He can quit by submitting his resignation only to the President
- Since, he is appointed by the President on the advice of the Council of Ministers, conventionally he is removed when the council is dissolved or replaced

Being the Chief Law Officer of the country, the Attorney General of India has to perform the following duties:

- Whichever legal matters are referred to him by the President, he advises the Union government upon the same.
- President keeps on referring him legal matters that suits his interest and Attorney General has to advise on those too
- Apart from what President refers, he also performs the duties mentioned in the Constitution

The three duties that are assigned to him by the President are:

- In any legal case where the government of India is related to, the Attorney General has to appear in the Supreme Court on its behalf
- He has to represent the Union Government in any reference made by the President to the Supreme Court under Article 143 of the Constitution
- He also appears in the High Court if any case is related to the Government of India

What are the limitations on the Attorney General?

- He should not advise or hold a brief against the Government of India
- He should not advise or hold a brief in cases in which he is called upon to advise or appear for the Government of India
- He should not defend accused persons in criminal prosecutions without the permission of the Government of India
- He should not accept appointment as a director in any company or corporation without the permission of the Government of India

SOLICITOR GENERAL OF INDIA

- Solicitor General is the **second highest law officer** in the country.
- He is **subordinate to the Attorney General of India**, the highest law officer and works under him.
- He also advises the government in legal matters.
- Solicitor general is appointed for period of three years by Appointment Committee of Cabinet chaired by Prime Minister.

Duties

- To give advice to the Government of India upon such legal matters, and to perform such other duties of a legal character, as may from time to time, be referred or assigned to him by the Government of India.
- To appear, whenever required, in the Supreme Court or in any High Court on behalf of the Government of India in cases (including suits, writ petitions, appeal and other proceedings) in which the Government of India is concerned as a party or is otherwise interested.
- To represent the Government of India in any reference made by the President to the Supreme Court under Article 143 of the Constitution.

Shield IAS

ECONOMY

(Global and Indian)

INTERIM AND ANNUAL BUDGETS

\# ***Concept:*** *To understand*

Interim Budget	Union Budget
○ Interim Budget is a budget presented by the Central Government just **before the General elections.**	○ Union Budget is an annual budget presented by the Central Government in the Parliament.
○ **Vote on the account is passed without discussion** in Lok Sabha	○ Union Budget is **passed after complete discussions in Lok Sabha**
○ In the Interim Budget, the income and expenses of the previous year will be mentioned. ○ It also mentions the expenses for a few months till the charge is taken over by the next Government. ○ However, most importantly the **sources of income will not be detailed i**n the Interim Budget.	○ The Union Budget has 2 different parts, one part is related to the expenses and income of the previous year and the other part is the plan of the Government to raise funds through taking various measures and how it would be utilised for the development of the nation.
○ Interim Budget is during the election year, for a duration of approximately 2 to 4 months of the fiscal year	○ Union Budget is for the entire fiscal year.
○ The Interim Budget has only a summary of the expenses and income of the previous year.	○ Union Budget will have income and expenses of the previous year would be provided in detail.
○ The Interim Budget will not have the component of income through the collection of taxes.	○ The Union Budget will have a component on spending funds for various social welfare measures for the development of a country and describe the ways of raising funds through taxes.

CAPITALISM, COMMUNISM, AND SOCIALISM

\# ***Concept:*** *To understand*

	Capitalism	Communism	Socialism
Ideology	Maximisation of profit by any means necessary.	From **each according to his ability,** to each	From each according to his ability, to each

	It also believes in **Laissez-Faire,** a philosophy that emphasizes on leaving circumstances to run their natural course without any external intervention	according to his needs	according to his contribution
Economy Planning	In capitalist societies, the economy is planned as per the functioning of the free-markets	The economy is **planned by the Central Government**	The economy is planned by the central government
Ownership of Economic Resources	Private ownership of economic resources and property is actively encouraged with little to no government intervention	All **economic resources are publicly owned** and controlled by the government. Individuals hold no personal property or assets.	Individuals **can own personal property** but all industrial and production capacity is communally owned and managed by a democratically elected government.
Class distinction	There exists a distinct class whose standing in society is measured by the material wealth in their possession	**Class is abolished**. The chances of one worker earning more than the other are nonexistent	Classes exist but the differences between them are greatly reduced. It is possible for some people to earn more than others.
Religion	As per the ideology, it is indifferent towards religion, but bias thus exist towards religious groups who are well-off or as rich as another religious group	**Religion is effectively abolished**	Freedom of religion is allowed
Welfare	The welfare system is available only to those who have the wealth to pay for their services.	Supports widespread **universal social welfare** with an emphasis on public health and education	The state will be for the welfare of everyone in the society without any discrimination
Origins	The modern form of capitalism can be traced to the early **Renaissance period in the 15th -16th Centuries.** The wealthy merchants of Italian city-states engaged in small industry and wage-labour practices at the time.	Although the concept of egalitarian societies existed since the time of Ancient Greece, the foundations of modern-day communism were established in **1848 by the German Philosopher, Karl**	The economy of the 3rd century BC Mauryan Empire was described by economists as “a socialized monarchy” and “a sort of state socialism”. It became more prominent towards the

		Marx (May 5th, 1818 – 14 March 1883).	end of the 18th century and after 1848

WORLD BANK GROUP

Concept: *To understand*

- The United Nations Monetary and Financial Conference, also known as the **Bretton Woods Conference held in 1944** led to the formation of the **International Monetary Fund** (IMF in 1945) and the **International Bank for Reconstruction and Development** (IBRD in 1944).
- The original focus of the IBRD was the **reconstruction of countries ravaged by the Second World War** through loans.
- Gradually, there was a shift from reconstruction to development with a particular emphasis on infrastructure, power grids, roads and transportation, dams, etc.
- The other institutions such as the **IDA, IFC, etc. were formed over the years** and all five institutions **(IBRD, IDA, IFC, MIGA, and ICSID) came to be called the World Bank Group**.
- Currently, the group engages in multifarious activities through its institutions and funds.
- There is a **special focus** on developing and underdeveloped countries.
- The WBG is one of the world's largest sources of funding and knowledge for developing nations. Its five institutions share a commitment to decreasing poverty, enhancing shared prosperity, and boosting sustainable development.
- The WBG is headquartered in Washington, D.C.
- The World Bank Group is a **specialized agency of the United Nations**.



International Bank for Reconstruction and Development (IBRD)

- The IBRD calls itself a global development cooperative. It has a membership of 189 countries.
- It is the **world's largest development bank**.
- It provides loans, guarantees, advisory services, and risk management products to middle-income and creditworthy low-income countries.
- **Middle-income countries represent more than 60%** of the IBRD's portfolio.
- IBRD finances investments across all sectors and offers technical support and expertise at every stage of a project.
- IBRD deals **only with sovereign governments** and not private players.
- It also assists governments in augmenting the investment climate of countries, removing service delivery bottlenecks, and strengthening institutions and policies.
- IBRD sources most of its funds from the world's financial markets.

IBRD and India

- India is a **founding member of IBRD**.
- It started lending to India in 1949, the first project being undertaken for the Indian Railways.
- Since the 1960s, the IBRD is an important source of long-term funding for India.
- India is the largest IBRD client of the World Bank.
- India is a blend country, which means it is transitioning from a lower-middle-income to a middle-income country.
- India is eligible for loans from both the IBRD and the IDA.

International Development Association (IDA)

- The International Development Association (IDA) is a part of the World Bank Group that helps the world's poorest countries.
- The main objective of the IDA is to **provide grants and concessional loans** to the world's poorest countries.
- It **lends to developing countries with the lowest Gross National Income (GNI),** having troubled creditworthiness, & having very low per capita income.
- The IDA seeks to complement the work done by the International Bank for Reconstruction and Development.
- Collectively **IBRD and IDA are known as the World Bank.**

- IDA was established with the signing of agreements between 15 countries.
- 173 countries are its members.
- Around 52 nations are donor countries.
- IDA lends to 75 countries, out of which 39 countries are located in Africa.
- IDA **replenishes its resources every 3 years.**
- G-7 countries dominate donor contributions. Their contribution comprises 69% of the total funds donated.

- 26% of the total funds are donated by 11 mid-sized traditional donor countries.
- 5% of the total funds are donated by 34 small-donor nations.

International Development Association – Financial Instruments

There are 3 financial instruments under the International Development Association (IDA) which are given below.

Investment Operations	It is used to finance a wide range of physical and social infrastructure necessary to reduce poverty and create sustainable development.
Development Policy Operations	This focuses on financial policies and institutional actions that are consistent with the country's economic policies.
IDA Guarantees	This comes into picture when the default is caused by the Government failure. Here it mobilizes private sector finance.

IDA and India

- India is **one of the founding members** of the International Development Association.
- India got its first investment from IDA for a highway construction project in 1961.
- In the following decade, the IDA accounted for nearly three-fourths of all WB lending to India.
- By **1970, India was the largest recipient of IDA funds,** accounting for more than two-fifths of all its lending.
- India is also a **donor to the IDA classified as a Part II Donor**.
- In 1980, China joined the World Bank which significantly dropped India's share in IDA.
- China's claim to limiting the IDA resources also worsened Africa's economic fortunes.
- Now, **India is classified as a Blend Country** and is creditworthy for funding from both IBRD and IDA.
- **Blend Country or Blend Borrower** can be defined as one in the transition from lower-middle-income to middle-income.

International Finance Corporation (IFC)

- The IFC is a **sister organization of the World Bank (IDA + IBRD).** It is the largest international development institution focused on the private sector in developing countries.
- It functions as the **private sector arm of the WBG**.
- It works for economic development by investing in **for-profit and commercial projects for poverty reduction and augmenting development.**
- It also engages in **mobilizing third-party resources for projects**.
- The IFC works with the private sector to boost entrepreneurship and create sustainable businesses.
- The IFC provides investment, advice, and asset management offerings.
- It lends to businesses and private sector projects.

IFC and India

- India is a **founding member** of the IFC.
- Over the past few years, IFC has augmented its portfolio in India, improving profitability and investing in high impact projects.
- It is expanding its activities in the **LIS (the Low Income States and the NE States)** in India.
- Improving the investment climate for private sector development and inclusive growth.
- Financial inclusion by focusing on microfinance institutions.
- Focus on renewable energy and cleaner production methods.
- Developing PPP transactions with a focus on social services (health and education) and climate change impact projects.

Multilateral Investment Guarantee Agency (MIGA)

- MIGA's chief goal is to enhance **cross-border investment in developing countries** by giving guarantees (political risk insurance and credit enhancement) to lenders and investors.
- The agency's guarantees to protect investments against non-commercial risks.
- It emphasizes on **Fragile and Conflict-affected States.**

Political risk insurance products:

- Coverage against losses due to war, terrorism, and civil disturbance.
- Coverage against expropriation by governments.
- Coverage against breach of contract.
- Protection against losses arising from an inability to legally convert local currency into hard currency.
- Credit enhancement – protection when governments fail to honour financial obligations.
- India became a member of the **MIGA in 1994**.

International Centre for Settlement of Investment Disputes (ICSID)

- ICSID engages in **international investment dispute settlement**.
- It settles disputes between **investors and governments.**
- It also settles state-state disputes under investment treaties and free trade agreements and acts as an administrative registry.
- The Centre provides for settlement of disputes by arbitration, conciliation, or fact-finding.
- It also disseminates information on international law on foreign investment.
- **India is not a member of the ICSID** because it claims that the ICSID's functioning and structure are biased towards the developed countries.
- India set up the BRICS Arbitration Centre (BRICS Centre) to address and reinforce international arbitrations with foreign investors. Although this is limited to the BRICS countries, it will be available for all developing countries in the future.

FINANCIAL STABILITY AND DEVELOPMENT COUNCIL

Concept: *To understand*

- The **Financial Stability and Development Council (FSDC)** was constituted by an **Executive Order** of the Union Government as a **non-statutory apex body** under the Ministry of Finance in 2010.
- The **Raghuram Rajan Committee (2008)** on financial sector reforms first proposed the creation of FSDC.

FSDC – Council Members

- The **Finance Minister is the Chairman** of the FSDC.
- Members of FSDC include Heads of the Financial Sector Regulators listed below:

- Reserve Bank of India (RBI)
- Insurance Regulatory and Development Authority (IRDA)
- Securities and Exchange Board of India (SEBI)
- Pension Fund Regulatory and Development Authority (PFRDA)
- Other members are Finance Secretary, Chief Economics Advisor and Secretary of the Department of Financial Services.

FSDC Member Reforms

The government reconstituted the FSDC to include the following Members in the Council:

- Minister of State responsible for the Department of Economic Affairs (DEA)
- Secretary of the Department of Electronics and Information Technology
- Revenue Secretary
- Chairman of the Insolvency and Bankruptcy Board of India (IBBI)
- The reconstitution would make FSDC more broad-based to incorporate changes in the economic regulatory framework of the country.

Functions of FSDC

- The Financial Stability and Development Council was established as an autonomous body dealing with **macroprudential and financial regularities** in the entire financial sector of India.
- The body envisages to strengthen and institutionalize the mechanism of maintaining financial stability, financial sector development, inter-regulatory coordination along with monitoring macro-prudential regulation of the economy.
- It must be noted that no funds are separately allocated to the council for undertaking its activities.

Responsibilities of FSDC

- Bringing about stability in the financial sector
- Development of the Financial Sector
- Coordination of Inter-Regulatory bodies

- Promoting financial literacy
- Ensuring financial inclusion
- Macroprudential supervision of the economy including the functioning of large financial conglomerates.
- Coordinating India's international interface with financial sector bodies like the Financial Action Task Force (FATF), Financial Stability Board (FSB) and any such body as may be decided by the Finance Minister from time to time.

NON-BANKING FINANCIAL COMPANY (NBFC)

- A Non-Banking Financial Company (NBFC) is a company registered under the **Companies Act, 1956** engaged in the business of loans and advances, acquisition of shares/stocks/bonds/debentures/securities issued by Government or local authority or other marketable securities of a like nature, leasing, hire-purchase, insurance business, chit business but does not include any institution whose principal business is that of agriculture activity, industrial activity, purchase or sale of any goods (other than securities) or providing any services and sale/purchase/construction of immovable property.
- A non-banking institution which is a company and has principal business of receiving deposits under any scheme or arrangement in one lump sum or in installments by way of contributions or in any other manner, is also a non-banking financial company (Residuary non-banking company).
- NBFCs lend and make investments and hence their activities are akin to that of banks; however, there are a few differences as given below:

1. NBFC **cannot accept demand deposits**;
2. NBFCs **do not form part of the payment and settlement system** and cannot issue cheques drawn on itself;
3. Deposit insurance facility of Deposit Insurance and Credit Guarantee Corporation is not available to depositors of NBFCs, unlike in case of banks.

- NBFCs whose asset size is of ₹ 500 cr. or more as per last audited balance sheet are considered as systemically important NBFCs. The rationale for such classification is that the activities of such NBFCs will have a bearing on the financial stability of the overall economy.
- NBFCs are categorized **a) in terms of the type of liabilities into Deposit and Non-Deposit accepting NBFCs**, **b) non deposit taking NBFCs by their size into systemically important and other non-deposit holding companies (NBFC-NDSI and NBFC-ND)** and **c) by the kind of activity they conduct.** Within this broad categorization the different types of NBFCs are as follows:

1. **Asset Finance Company (AFC)** : An AFC is a company which is a financial institution carrying on as its principal business the financing of physical assets supporting productive/economic activity, such as automobiles, tractors, lathe machines, generator sets, earth moving and material handling equipments, moving on own power and general purpose industrial machines. Principal business for this purpose is defined as **aggregate of financing real/physical assets supporting economic activity and income** arising therefrom is not less than 60% of its total assets and total income respectively.

2. **Investment Company (IC)** : IC means any company which is a financial institution carrying on as its principal business the acquisition of securities.
3. **Loan Company (LC):** LC means any company which is a financial institution carrying on as its principal business the providing of finance whether by making loans or advances or otherwise for any activity other than its own but does not include an Asset Finance Company.
4. **Infrastructure Finance Company (IFC):** IFC is a non-banking finance company a) which deploys at least 75 per cent of its total assets in infrastructure loans, b) has a minimum Net Owned Funds of ₹ 300 crore, c) has a minimum credit rating of 'A 'or equivalent d) and a CRAR of 15%.
5. **Systemically Important Core Investment Company (CIC-ND-SI):** It is an NBFC carrying on the business of acquisition of shares and securities.
6. **Infrastructure Debt Fund**: Non- Banking Financial Company (IDF-NBFC) : IDF-NBFC is a company registered as NBFC to facilitate the flow of long term debt into infrastructure projects. IDF-NBFC raise resources through issue of Rupee or Dollar denominated bonds of minimum 5-year maturity. Only Infrastructure Finance Companies (IFC) can sponsor IDF-NBFCs.
7. **Non-Banking Financial Company** - Micro Finance Institution (NBFC-MFI): NBFC-MFI is a non-deposit taking NBFC having not less than 85% of its assets in the nature of qualifying assets which satisfy the following criteria:

a) loan disbursed by an NBFC-MFI to a borrower with a rural household annual income not exceeding ₹ 1,00,000 or urban and semi-urban household income not exceeding ₹ 1,60,000;
b) loan amount does not exceed ₹ 50,000 in the first cycle and ₹ 1,00,000 in subsequent cycles;
c) total indebtedness of the borrower does not exceed ₹ 1,00,000;
d) tenure of the loan not to be less than 24 months for loan amount in excess of ₹ 15,000 with prepayment without penalty;
e) loan to be extended without collateral;
f) aggregate amount of loans, given for income generation, is not less than 50 per cent of the total loans given by the MFIs;
g) loan is repayable on weekly, fortnightly or monthly instalments at the choice of the borrower

8. **Non-Banking Financial Company – Factors (NBFC-Factors):** NBFC-Factor is a non-deposit taking NBFC engaged in the principal business of factoring. The financial assets in the factoring business should constitute at least 50 percent of its total assets and its income derived from factoring business should not be less than 50 percent of its gross income.
9. **Mortgage Guarantee Companies (MGC)** - MGC are financial institutions for which at least 90% of the business turnover is mortgage guarantee business or at least 90% of the gross income is from mortgage guarantee business and net owned fund is ₹ 100 crore.
10. **NBFC- Non-Operative Financial Holding Company (NOFHC)** is financial institution through which promoter / promoter groups will be permitted to set up a new bank. It's a wholly-owned Non-Operative Financial Holding Company (NOFHC) which will hold the bank as well as all other financial services companies regulated by RBI or other financial sector regulators, to the extent permissible under the applicable regulatory prescriptions.

SMALL FINANCE BANKS

- Small Finance Banks are the financial institutions which provide financial services to the unserved and unbanked region of the country.
- They are **registered as a public limited company under the Companies Act, 2013**.

Objective

- **Access to financial services**: The main purpose behind having small finance banks is to expand access to financial services in rural and semi-urban areas. These banks can do almost everything that a normal commercial bank can do but at a much smaller scale.
- **Basic banking services**: It offer basic banking services, accept deposits and lend to underserved sections of customers, including small business units, small and marginal farmers, micro and small industries, and even entities in the unorganised sector.
- **Alternative institution**: Small finance banks have the potential to provide an alternative to some of the existing institutions with their mandated focus on small and medium businesses, the informal sector, small and marginal farmers and thus on increasing financial inclusion and serving a variety of unserved clients in the hinterland and tier three and four cities and towns.

Activities

- The small finance bank shall **primarily undertake basic banking activities of acceptance of deposits and lending to unserved and underserved sections** including small business units, small and marginal farmers, micro and small industries and unorganised sector entities.
- It can also undertake other non-risk sharing simple financial services activities, not requiring any commitment of own funds, such as the **distribution of mutual fund units, insurance products, pension products, etc.**
- The small finance bank **can also become an Authorised Dealer in foreign exchange business** for its clients' requirements.
- **Open banking outlets**: Small finance banks will have general permission to open banking outlets from the date of commencement of business subject to the condition that the **requirement of opening at least 25 percent of its banking outlets in unbanked rural centres**.
- **Restriction in the area of operations**: There will not be any restriction in the area of operations of small finance banks; however, preference will be given to those applicants who, in the initial phase, set up the bank in a cluster of under-banked States/districts, such as in the North-East, East and Central regions of the country.
- These applicants will not have any hindrance to expand to other regions in due course.
- It is expected that the small finance bank should primarily be responsive to local needs. After the initial stabilization period of five years, and after a review, RBI may liberalize the scope of activities of the small finance banks.
- The other financial and non-financial services activities of the promoters, if any, should be kept distinctly ring-fenced and not commingled with the banking business.

Capital Requirement

- The **minimum paid-up voting equity capital for small finance banks shall be Rs.200 crore**, except for such small finance banks which are converted from UCBs.
- In view of the inherent risk of a small finance bank, it shall be required to maintain a minimum capital adequacy ratio of 15 percent of its risk-weighted assets (RWA) on a continuous basis, subject to any higher percentage as may be prescribed by RBI from time to time.

Foreign Shareholding

- The foreign shareholding in SFBs would be as per the Foreign Direct Investment (FDI) policy for private sector banks as amended from time to time.
- Currently, the aggregate FDI in a private sector bank from all sources will be allowed up to a maximum of **74% of the paid-up capital of the bank.**
- In the case of Foreign Institutional Investors (FIIs)/Foreign Portfolio Investors (FPIs), individual FII/FPI holding is restricted to below 10% of the total paid-up capital.
- The aggregate limit for all FIIs/FPIs/Qualified Foreign Investors (QFIs) cannot exceed 24% of the total paid-up capital. This can be raised to 49% of the total paid-up capital by the bank concerned through a resolution by its Board of Directors followed by a special resolution to that effect by its General Body.

Other Key Points

- SFBs need to **maintain a Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR).**
- They are required to extend **75% of its Adjusted Net Bank Credit (ANBC) to the sectors eligible for classification as priority sector lending** by the Reserve Bank of India. At least 50% of its loan portfolio should constitute loans and advances of up to Rs. 25 lakh.
- SFBs can also **transit to a universal bank**, subject to fulfilling minimum paid-up capital/net worth requirements as applicable to universal banks.
- They cannot be a Business Correspondent (BC) for another bank. However, they can have their own BC network.

CURRENCY SWAP

- A currency swap contract (also known as a cross-currency swap contract) is a **derivative contract between two parties that involves the exchange of interest payments, as well as the exchange of principal amounts in certain cases, that are denominated in different currencies.**
- Although currency swap contracts generally imply the exchange of principal amounts, some swaps may require only the transfer of the interest payments.
- A currency swap consists of **two streams (legs) of fixed or floating interest payments** denominated in two currencies. The transfer of interest payments **occurs on predetermined dates**. In addition, if the swap counterparties previously agreed to exchange principal amounts, those amounts must also be exchanged on the maturity date at the same exchange rate.

- Currency swaps are p**rimarily used to hedge potential risks associated with fluctuations in currency exchange rates or to obtain lower interest rates on loans in a foreign currency**. The swaps are commonly used by companies that operate in different countries. For example, if a company is conducting business abroad, it would often use currency swaps to retrieve more favorable loan rates in their local currency, as opposed to borrowing money from a foreign bank.
- For example, a company may take a loan in the domestic currency and enter a swap contract with a foreign company to obtain a more favorable interest rate on the foreign currency that is otherwise is unavailable.

Types of Currency Swap Contracts

Similar to interest rate swaps, currency swaps can be classified based on the types of legs involved in the contract. The most commonly encountered types of currency swaps include the following:

- **Fixed vs. Float**: One leg of the currency swap represents a stream of fixed interest rate payments while another leg is a stream of floating interest rate payments.
- **Float vs. Float (Basis Swap):** The float vs. float swap is commonly referred to as basis swap. In a basis swap, both swaps' legs both represent floating interest rate payments.
- **Fixed vs. Fixed**: Both streams of currency swap contracts involve fixed interest rate payments.

MONETARY POLICY BASICS

- Monetary policy refers to the policy of the central bank with regard to the use of monetary instruments under its control to achieve the goals specified in the Act.
- The Reserve Bank of India (RBI) is vested with the responsibility of conducting monetary policy. This responsibility is explicitly mandated under the **Reserve Bank of India Act, 1934.**

The goal(s) of monetary policy

- The **primary objective** of monetary policy is to maintain price stability while keeping in mind the objective of growth. Price stability is a necessary precondition to sustainable growth.
- In May 2016, the Reserve Bank of India (RBI) Act, 1934 was amended to provide a statutory basis for the implementation of the **flexible inflation targeting framework**.
- The amended RBI Act also provides for the inflation target to be set by the Government of India, in consultation with the Reserve Bank, once in every five years.
- The Central Government notified the following as factors that constitute failure to achieve the inflation target:(a) the average inflation is more than the upper tolerance level of the inflation target for any three consecutive quarters; or (b) the average inflation is less than the lower tolerance level for any three consecutive quarters.
- Prior to the amendment in the RBI Act in May 2016, the flexible inflation targeting framework was governed by an Agreement on Monetary Policy Framework between the Government and the Reserve Bank of India of February 20, 2015.

The Monetary Policy Framework

- The amended RBI Act explicitly provides the legislative mandate to the Reserve Bank to operate the monetary policy framework of the country.
- The framework **aims at setting the policy (repo) rate** based on an assessment of the current and evolving macroeconomic situation; and modulation of liquidity conditions to anchor money market rates at or around the repo rate. Repo rate changes transmit through the money market to the entire financial system, which, in turn, influences aggregate demand – a key determinant of inflation and growth.
- Once the repo rate is announced, the operating framework designed by the Reserve Bank envisages liquidity management on a day-to-day basis through appropriate actions, which aim at anchoring the operating target – the **weighted average call rate (WACR)** – around the repo rate.
- The operating framework is fine-tuned and revised depending on the evolving financial market and monetary conditions, while ensuring consistency with the monetary policy stance. The liquidity management framework was last revised significantly in April 2016.

Instruments of Monetary Policy

There are several direct and indirect instruments that are used for implementing monetary policy.

Repo Rate	The (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).
Reverse Repo Rate	The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF.
Liquidity Adjustment Facility (LAF)	The LAF consists of overnight as well as term repo auctions. Progressively, the Reserve Bank has increased the proportion of liquidity injected under fine-tuning variable rate repo auctions of range of tenors. The aim of term repo is to help develop the inter-bank term money market, which in turn can set market based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy. The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.
Marginal Standing Facility (MSF)	A facility under which scheduled commercial banks can borrow additional amount of overnight money from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest. This provides a safety valve against unanticipated liquidity shocks to the banking system.
Corridor	The MSF rate and reverse repo rate determine the corridor for the daily movement in the weighted average call money rate.
Bank Rate	It is the rate at which the Reserve Bank is ready to buy or rediscount bills of exchange or other commercial papers. The Bank Rate is published under Section

	49 of the Reserve Bank of India Act, 1934. This rate has been aligned to the MSF rate and, therefore, changes automatically as and when the MSF rate changes alongside policy repo rate changes.
Cash Reserve Ratio (CRR)	The average daily balance that a bank is required to maintain with the Reserve Bank as a share of such per cent of its Net demand and time liabilities (NDTL) that the Reserve Bank may notify from time to time in the Gazette of India.
Statutory Liquidity Ratio (SLR)	The share of NDTL that a bank is required to maintain in safe and liquid assets, such as, unencumbered government securities, cash and gold. Changes in SLR often influence the availability of resources in the banking system for lending to the private sector.
Open Market Operations (OMOs)	These include both, outright purchase and sale of government securities, for injection and absorption of durable liquidity, respectively.
Market Stabilisation Scheme (MSS)	This instrument for monetary management was introduced in 2004. Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills. The cash so mobilised is held in a separate government account with the Reserve Bank.

PURCHASING MANAGERS INDEX (PMI)

- The purchasing managers' index (PMI) is an **economic indicator based on surveys of businesses in a given sector.** The most common PMI surveys are the **manufacturing PMI** and the **services PMI.**
- Understanding the PMI can provide insight into recent market conditions and identify potential economic slowdowns.

Purchasing Managers' Index

The purchasing managers' index consists of several different surveys of purchasing managers at businesses in manufacturing or services. These surveys are compiled into a single numerical result depending on one of several possible answers to each question.

The most common elements include:

- New orders
- Factory output
- Employment
- Suppliers' delivery times
- Stocks of purchases

Investors use PMI surveys as leading indicators of economic health, given their insight into sales, employment, inventory, and pricing. Manufacturing sector purchases tend to react to consumer demand and are often among the first visible signs of a slowdown.

How Does the PMI Work?

- The PMI is a **diffusion index**, meaning that it **measures change across multiple indicators**. A diffusion index is particularly useful for identifying **economic turning points**, such as unemployment reporting from the Bureau of Labor Statistics.
- The purchasing managers' index is a diffusion index that indicates whether economic conditions are better or worse at the companies surveyed.
- The formula used to calculate the PMI assigns weights to each common element and then multiplies them by **1 for improvement, 0.5 for no change, and 0 for deterioration**.
- Here is how the formula appears:

PMI = (P1*1) + (P2*0.5) + (P3*0)
P1 = Percentage of answers reporting improvement
P2 = Percentage of answers reporting no change
P3 = Percentage of answers reporting deterioration

- A **figure above 50 denotes an expansion** while **anything below 50 denotes a contraction** in activity. The higher the difference from this mid-point of 50, greater the expansion or contraction.
- Also, the rate of expansion can be judged by **comparing the PMI with that of the previous month reading**. If the latest figure is higher than previous month's, then manufacturing or services is expanding at a faster rate. If it is lower than previous month, then it is growing at lower rate.

Importance

- The PMI is becoming one of the most tracked indicators of business activity across the world. It provides a reliable expectation of how an economy is doing as a whole — and manufacturing in particular.
- It is a **good gauge of boom and bust cycles** in the economy and closely watched by investors, business, traders and financial professionals besides economists. Also, the PMI, which is usually released at the start of the month, serves as a leading indicator of economic activity. It comes before the official data on industrial output, core sector manufacturing and GDP growth.
- Even central banks use the PMI to take decisions on interest rates. Besides influencing equity market movements, PMI releases also impact bond and currency markets.
- Since manufacturing sector is often where recessions begin and end, PMI manufacturing is always closely watched. A good reading of PMI enhances the attractiveness of an economy vis-a-vis other competing economies. Suppliers can decide on prices depending on PMI movements.

SOVEREIGN CREDIT RATING

A sovereign credit rating is an assessment of a country's creditworthiness. It shows the level of risk associated with lending to a particular country since it is applied to all bonds issued by the government.

- When evaluating the creditworthiness of a country, credit rating agencies consider various factors such as the **political environment, economic status, and its creditworthiness** to assign an appropriate credit rating.

- Obtaining a good credit rating is important for a country that wants to access funding for development projects in the international bond market. Also, countries with a good credit rating can attract foreign direct investments.
- The three influential rating agencies include **Moody's Services, Fitch Ratings, and Standard & Poor's**.
- Sovereign credit ratings are important for countries that want to access funds in the international bond market. Usually, a credit rating agency will evaluate a country's economic and political environment at the request of the government and assign a rating stretching from AAA grade to grade D.
- By allowing external credit rating agencies to review its economy, a country shows that it is willing to make its financial information public to investors. A country with high credit ratings can access funds easily from the international bond market and also secure foreign direct investment.
- A low sovereign credit rating means that a country faces a high risk of default and may have experienced difficulties in paying back debts. The level of sovereign credit risk depends on various factors, including a country's debt service ratio, import ratio, growth of domestic money supply, etc.
- Since sovereign credit ratings were introduced in the early 1900s, several countries have defaulted on their international bonds. For example, during the great depression, 21 nations defaulted on their debt obligations in the international bond market. Over the years, more than 70 nations have defaulted on either their domestic or foreign debts.

Determinants of Sovereign Credit Ratings

- Credit rating agencies use both qualitative and quantitative techniques to determine the sovereign credit rating of a country. A 1996 paper published by Richard Cantor and Frank Packer titled "Determinants and Impacts of Sovereign Credit Ratings" outlined various factors that explain the difference in credit ratings assigned by the various rating agencies. The factors include:

Per capita income	○ Per capita income estimates the income earned per person in a specific area. ○ It is calculated by taking the total income earned by individuals in a given area divided by the number of people residing in that area. ○ A high per capita income increases the potential tax base of the government, which subsequently increases the government's ability to repay its debts.
GDP growth	○ The GDP growth rate of a country refers to the percentage growth in the GDP of a country from one quarter to another as the economy navigates a business cycle. ○ Strong GDP growth means that a country will be able to meet its debt obligations since the growth in GDP results in higher tax revenues for the government. ○ However, if the growth rate is negative, it means that the economy is experiencing a contraction, and the country may fail to honour its debt obligation if the situation continues.

Rate of inflation	○ Sovereign debts are susceptible to changes in the rate of inflation, and an increase in inflation will affect a country's ability to finance its debt. ○ A high inflation **rate points to structural problems** in a country's finances, and it is likely to cause political instability as the public becomes dissatisfied with the increasing inflation.
External debt	○ Some countries rely heavily on external debts to finance their development and infrastructure projects. Increasing debt levels translate to a higher risk of default, which may affect its ability to access funding from international lenders. ○ This burden increases if the foreign currency debts exceed the foreign currency income earned by a country in the form of exports.
Economic development	○ Credit rating agencies consider the level of development when determining the sovereign credit rating of a country. ○ Usually, once a country has reached a certain level of development or per capita income, it is considered less likely to default on its debt obligations. For example, economically developed nations are considered less likely to default compared to developing countries.
History of defaults	○ A country that defaulted on its debt obligations in the past is considered to have a high sovereign credit risk by rating agencies. ○ It means that countries with a record of defaults receive low ratings, making them less attractive to investors looking for low-risk investments.

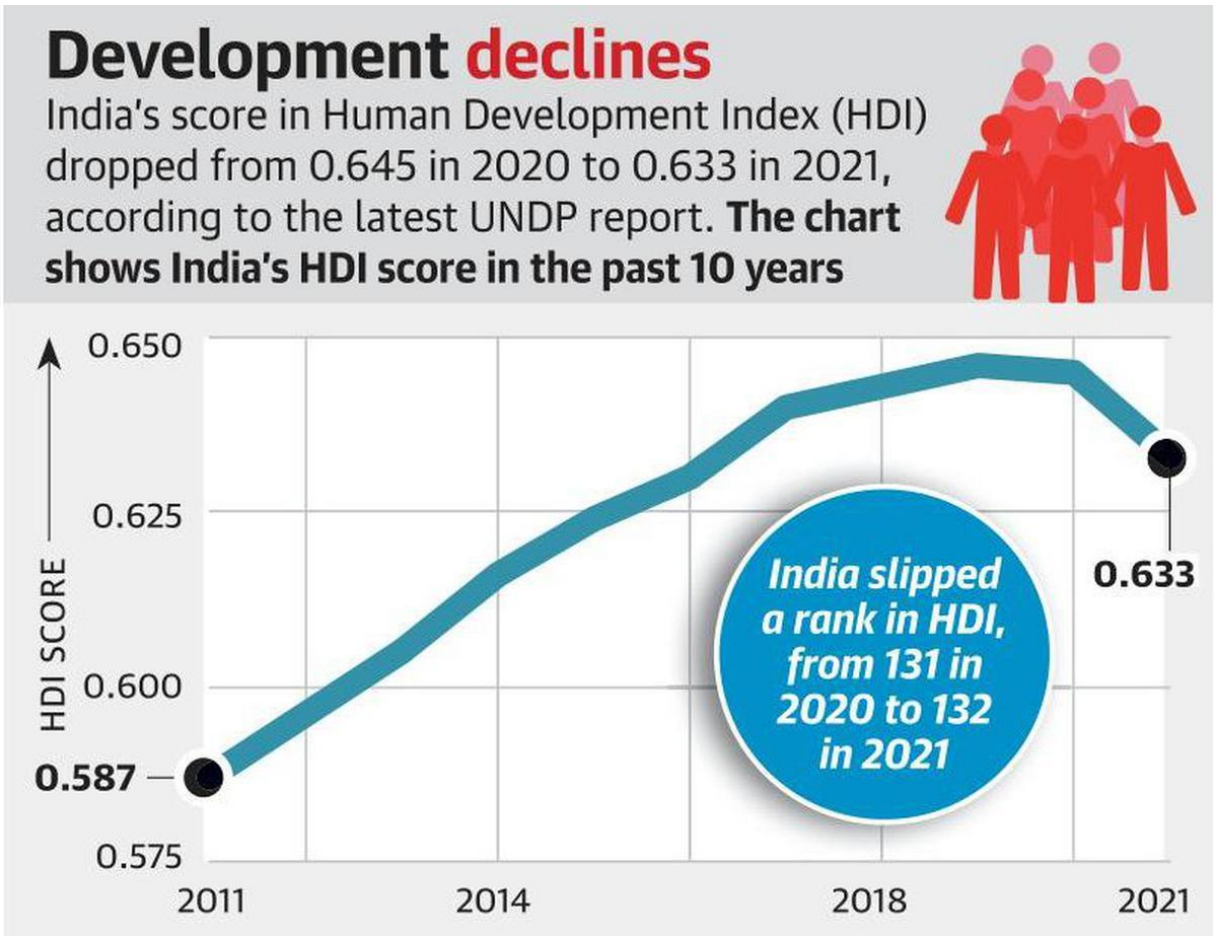
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SOCIETY

(Social Issues and Social Justice)

INDIA RANKS 132 IN HDI

#News: *India ranks 132 out of 191 countries in the Human Development Index (HDI) 2021, after registering a decline in its score over two consecutive years for the first time in three decades.*



- The Human Development Index (HDI) measures the **level and changes in quality of life** by combining indicators of **life expectancy**, **education or access to knowledge**, and **income or standard of living.**
- **Mahbub ul Haq and Amartya Sen**, two renowned economists from Pakistan and India, created the Human Development Index.
- It was created as a complement to the gross domestic product because it emphasises the importance of human development in the growth process.

Dimensions of human development

Long and Healthy Life	○ Life expectancy at birth is used to calculate the dimension of a long and healthy life. ○ The life expectancy at birth is a statistical measure of how long an average person is expected to live based on demographic factors such as birth year and current age.
Education	○ The HDI's second dimension is education. The expected years of schooling and the mean years of schooling are the education indicators. ○ According to the United Nations, the average maximum number of years of schooling is 18 years, while the mean maximum number of years of schooling is 15 years.
Standard of Living	○ Gross national income (GNI) per capita is commonly used to assess the standard of living. The GNP measures the total domestic and foreign output generated by a country's residents.

What is the reason behind the global fall?

Nine out of ten nations have seen a decline in their human development performance globally as a result of several crises like:

- COVID-19,
- the Ukraine conflict, and
- environmental issues,
- Recent is showing that human progress has stagnated for the first time in 32 years.
- The rankings of countries throughout different years are not comparable.
- The recent reduction in the HDI has been mostly attributed to a global decline in life expectancy, which fell from 72.8 years in 2019 to 71.4 years in 2021.
- Additionally, the COVID-19 pandemic has made gender disparity worse, which rose 6.7% globally.
- The report points out that support for polarisation has grown worldwide as a result of the uncertainty brought on by numerous global crises, which is bad for human rights and democratic freedom.

What is the reason behind India's fall?

- Like global trends, in India's case, the drop in HDI from 0.645 in 2018 to 0.633 in 2021 can be attributed to:
- Falling life expectancy at birth — 70.7 years to 67.2 years.
- The mean number of years spent in education in India is 6.7 years, while the expected number is 11.9 years. The GNI per person stands at $6,590.

Gender inequality

- However, after gender inequality worsened between 2019 and 2020, India's Gender Inequality Index value in the most recent report showed a little improvement compared to the 2020 index (0.490 vs 0.493). (0.486 vs 0.493).
- The index evaluates three areas of accomplishment disparity between men and women: the labour market, empowerment, and reproductive health.

India lagged behind the global norms in 2021 for each of these four metrics (global average):

- Life expectancy (71.4 years),
- Expected years of schooling (12.8 years),
- Mean years of schooling (8.6 years), and
- Gross national income per capita (2017 PPP$) of $16,752.

Measures

- Promoting universal health coverage to its Citizens.
- Access to affordable and timely health care.
- Implementation of the National Nutrition Mission in letter and Spirit.
- Adherence to the principles of good governance.
- Placing more emphasis on research and development in order to establish creative policies and programs to address new developmental difficulties.
- Adapting public programs to women's needs can encourage more women to enter and stay in the workforce.
- If India is to achieve its goal of becoming a superpower, it must invest to alleviate the weight of social and economic disadvantage on the poor.

PM-SHRI

News: *On the occasion of Teacher's Day (5th September, 2022) Prime Minister Shri Narendra Modi announced a new initiative called PM – SHRI.*

Features

- PM SHRI (Pradhan Mantri Schools for Rising India) Scheme is a **Centrally Sponsored Scheme** for the upgradation and development of around 14,500 schools across the country.
- The schools will be **selected from among the schools run by the Central Government/State Govt./UT/Local Bodies.**
- The selected schools will be **equipped with advanced infrastructure** like smart classrooms, labs, libraries and sports facilities/equipment.
- Around **14,500 schools** will be transformed into model schools which will showcase all the components of the National Education Policy, 2020 (NEP, 2020).
- The selected schools will **act as model schools and will offer mentorship to other schools** in their vicinity.

- The **aim of this scheme** is to provide qualitative teaching, learning and cognitive development. Also, to create holistic and all-rounder individuals equipped with 21st-century skills.
- The methods of **teaching (pedagogy) adopted will be more** integrated, holistic, experimental, play way method, especially in the foundational years, discovery-oriented and inquiry-driven.
- Assessments will be based on conceptual understanding and application of knowledge to real-life situations.
- **Waste recycling, water conservation, energy efficiency** and **adopting a**n organic lifestyle will be a part of the curriculum in these schools.

PM SHRI Selection Procedure

- The schools need to **apply for the scheme through an online portal** which will be open four times a year, once every quarter for the first two years of the scheme.
- The elementary and secondary/senior secondary schools run by the centre/state/UT/local bodies having UDISE+ code would be eligible for selection under PM-SHRI.
- **Unified District Information System for Education (UDISE),** initiated in 2012-13, integrating DISE for elementary and secondary education is one of the largest Management Information Systems on School Education.
- UDISE+ is an updated version of UDISE. The entire system is now online and has been collecting data in real-time since 2018-19.
- Geo-tagging of schools for the selection and monitoring of PM-SHRI schools will be done by BISAG-N.

BISAG-N

- Bhaskaracharya National Institute for Space Applications & Geo Informatics provides specialised services and solutions in implementing map-based Geographic Information Systems.
- The institute works in close coordination with GoI ministries and state government departments/agencies and has thus emerged as a national-level agency to use satellite communication and space and geospatial technology for the planning and development activities in various sectors of the government.

NCRB DATA

Concept: *To understand*

National Crime Record Bureau (NCRB)

- It was set up in 1986 to function as a repository of information on crime and criminals.
- It was established on the recommendations of the **Tandon Committee to the National Police Commission (1977-1981)** and the **MHA's Taskforce (1985).**
- NCRB was entrusted with the responsibility for monitoring, coordinating and implementing the **Crime and Criminal Tracking Network & Systems (CCTNS) project in the year 2009.**
- This project connects 15000+ police stations and 6000 higher offices of police in the country.

- In August 2017, NCRB launched the **National Digital Police Portal**, which allows search for a criminal/suspect on the CCTNS database.
- The Bureau has also been entrusted to maintain the **National Database of Sexual Offenders (NDSO)** and share it with the States/UTs on a regular basis.
- NCRB has also been designated as the Central Nodal Agency to manage technical and operational functions of the Online Cyber-Crime Reporting Portal.

Suicides	○ **Suicide:** 120 deaths per mn population (the highest level ever recorded) ○ At the national level, the number of suicides increased by 7.17 per cent from the years 2020 to 2021. ○ **Daily wage earners remained the largest profession-wise group** among suicide victims in 2021 ○ The overall share of "Persons engaged in the farming sector" among the total recorded suicides stood at 6.6 per cent during 2021 ○ Maximum suicide in **Maharashtra** ○ **Reasons:** Mainly being Pandemic-induced mental health issues, Family Problems (other than marriage-related problems), Marriage Related Problems, and Illness.
Road Accidents	○ Deaths in road accidents up by 17% ○ In 2021, 1.55 lakh people died in accidents on Indian roads, up from 1.33 lakh in 2020 ○ Total road accidents reported was 4.03 lakh in 2021 ○ A maximum number of cases were reported in Tamil Nadu. ○ Reasons: Speeding caused 87,000 deaths, accounting for over half of all deaths, while dangerous and careless driving caused over 42000 deaths.
Crime against Women	○ The NCRB report also shows that the rate of crime against women (the number of incidents per 1 lakh population) increased from 56.5 per cent in 2020 to 64.5 per cent in 2021. ○ **Categories of crime:** (31.8 per cent) fall in the category of "Cruelty by husband or his relatives", followed by "Assault on women with intent to outrage her modesty" (20.8 per cent), kidnapping and abduction (17.6 per cent), and rape (7.4 per cent). ○ The report places **Uttar Pradesh on top (56,083)** in terms of the actual number of cases registered in 2021, ○ Nagaland stood out with the lowest number of crimes against women registered in the past three years ○ Only 507 cases were registered in the country under the Domestic Violence Act in 2021 — 0.1 per cent of the total cases of crime against women: Showing an under-reporting of cases.

Crime against Children	**Protection of Children from Sexual Offences Act (POCSO) Act:** ○ 1,49,404 cases of crime against children were registered in 2021 of which 53,874 — 36.05 percent — were under the Protection of Children from Sexual Offences Act (POCSO). **State-wise:** ○ Sikkim has the highest rate of sexual offences against children with 48.6 followed by Kerala (28.1), Meghalaya (27.8), Haryana (24.7) and Mizoram (24.6). ○ The largest number of cases registered under POCSO in 2021 was in UP (7,129) followed by Maharashtra (6,200), Madhya Pradesh (6,070), Tamil Nadu (4,465) and Karnataka (2,813). ○ Among union territories, Delhi had the highest rate of crimes against children in 2021. **Child labour Act:** ○ There were 982 cases registered under the Child Labour Act last year with the highest number of cases registered in Telangana (305) followed by Assam. **Prohibition of Child Marriage Act:** ○ The report states that 1,062 cases were registered under the Prohibition of Child Marriage Act last year with the top three states including Karnataka, Tamil Nadu and Assam. **Overall:** ○ In percentage terms, the top categories under crime against children during 2021 were kidnapping and abduction (45 percent) followed by POCSO cases. ○ In all, there was a 16.2 percent rise in cases of crime against children in 2021 from the previous year.
Narcotics Drugs and Psychotropic Substances (NDPS) Act	○ Punjab yet again topped the list of crime rate (per lakh population) in cases lodged last year under the Narcotics Drugs and Psychotropic Substances (NDPS) Act. ○ Himachal Pradesh ended second on the list in the same category. ○ Lowest: ○ The lowest crime rate under NDPS Act in 2021 was reported from UT Dadar and Nagar Haveli and Daman and Diu (0.5 percent), followed by the states of Gujarat (0.7 percent) and Bihar (1.2 percent), as per the NCRB report.

COGNIZABLE AND NON-COGNIZABLE

The Criminal Procedure Code lays the rules for the conduct of proceedings against any person who has committed an offence under any Criminal law.

Cognizable Offences	○ A cognizable offence is an offence in which the police officer as per the first schedule or under any other law for the time being in force, can arrest the convict without a warrant and can start an investigation without the permission of the court. ○ Cognizable offences are generally heinous or serious in nature such as murder, rape, kidnapping, theft, dowry death etc. ○ The first information report (FIR) is registered only in cognizable crimes.
Non-Cognizable Offences	○ A non-cognizable offence is the offence listed under the **first schedule of the Indian Penal Code and is bailable in nature.** ○ In case of a non-cognizable offence, the police **cannot arrest the accused without a warrant as well as cannot start an investigation**. ○ A criminal complaint is lodged with the magistrate who is supposed to order the concerned police station to initiate an investigation. ○ The crimes of **forgery, cheating, defamation, public nuisance**, etc., fall in the category of non-cognizable crimes.
Cases consisting of both Cognizable and Non-Cognizable Offences	○ According to Section 155(4) of the Criminal Procedure Code, when two or more offences are there in a case, of which at least one is of cognizable nature, and other of non-cognizable nature. ○ Then the entire case has to be dealt as a cognizable case, and the investigating officer will have all the powers and authority as he has in investigating a cognizable case.

NATIONAL PHARMACEUTICAL PRICING AUTHORITY (NPPA)

***#News:** Recently, the National Pharmaceutical Pricing Authority (NPPA) celebrated its 25th anniversary.*

*At the inaugural session of the event, the **Integrated Pharmaceutical Database Management System 2.0 (IPDMS 2.0)** and **Pharma Sahi Daam 2.0 app** were launched.*

NPPA

○ It is a government regulatory agency that controls the prices of pharmaceutical drugs in India.

- It was constituted by **Government of India Resolution in 1997** as an attached office of the **Department of Pharmaceuticals (DoP), Ministry of Chemicals and Fertilisers.**
- It acts as an independent Regulator for pricing of drugs and to ensure availability and accessibility of medicines at affordable prices.

Integrated Pharmaceutical Database Management System 2.0 (IPDMS 2.0)	○ It is an integrated responsive cloud-based application developed by NPPA with technical support from Centre for Advanced Computing (C-DAC). ○ It is envisaged to **optimise synergies in operations in order to promote Government's thrust on 'Ease of Doing Business'** as it would provide a single window for submissions of various forms as mandated under Drug Price Control Order (DPCO),2013. ○ It would also enable paperless functioning of NPPA and facilitate the stakeholders to connect with National Pharma Pricing Regulator from across the country
Pharma Sahi Daam 2.0 app	○ It has features like speech recognition; search medicines brand/formulation wise; share feature along with consumer complaint handling system.

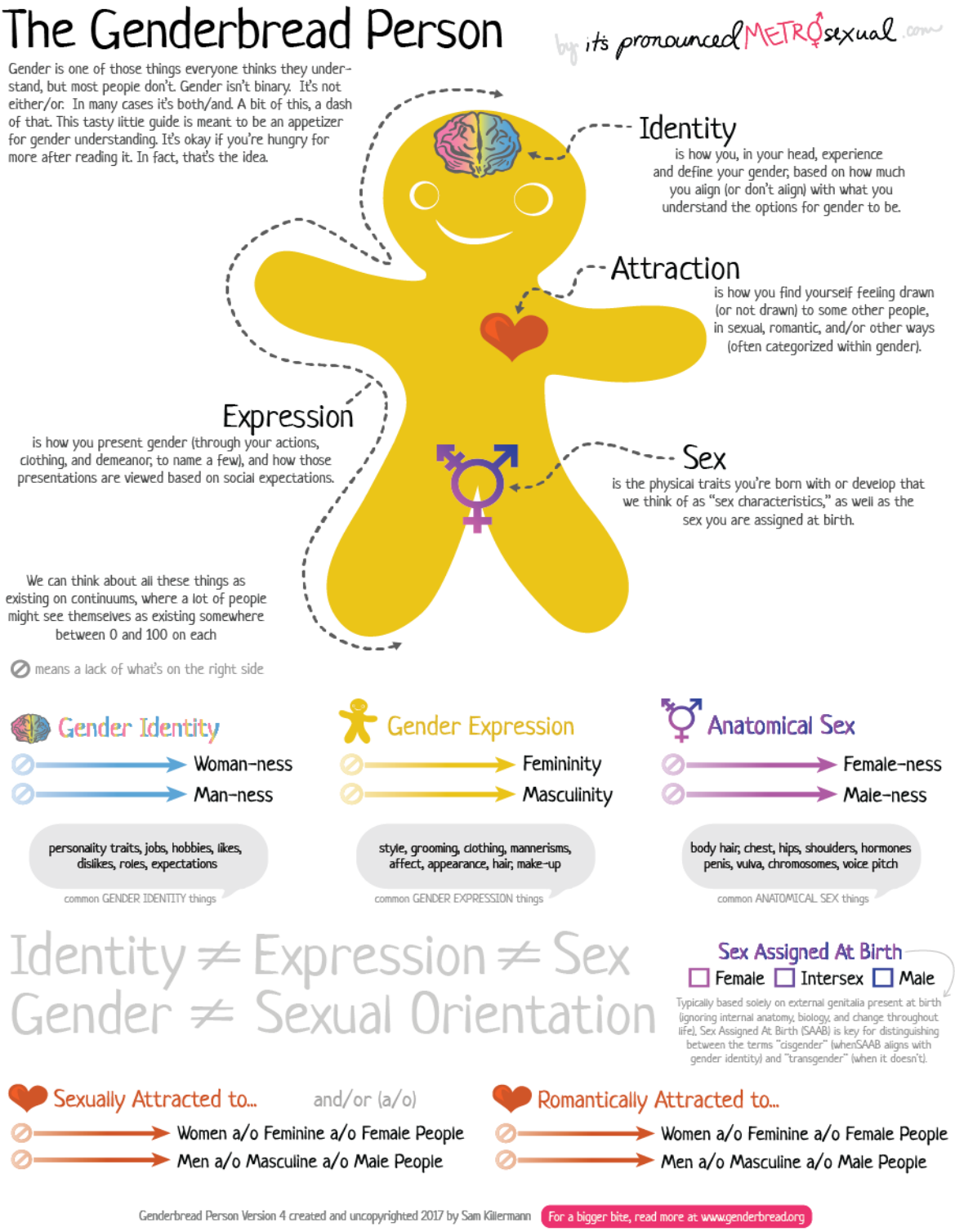
LGBTQIA+

To know

- **LGBTQIA+** is an inclusive term that includes people of all genders and sexualities, such as lesbian, gay, bisexual, transgender, questioning, queer, intersex, asexual, pansexual, and allies. While each letter in LGBTQIA+ stands for a specific group of people, the term encompasses the entire spectrum of gender fluidity and sexual identities.

Lesbian	term for women sexually and romantically oriented toward other women
Gay	any person attracted to the same gender
Bisexual	those who are sexually and romantically attracted both to men and women
Transsexual	can mean someone transitioning from one sex to another using surgery or medical treatments; not in common usage
Transgender	term for someone who identifies as a different gender than what was assigned on their birth certificate
Questioning	when a person is exploring their sexuality, gender identity and gender expression
Queer	an inclusive term or as a unique celebration of not moulding to social norms
intersex	used for individuals who don't fit into specific gender norms of woman or man; can also be used for those with reproductive anatomy that isn't biologically typical
asexual	uses for those who don't feel sexual attraction to either sex or that don't feel romantic attraction in the typical way
+	The plus sign at the end of LGBTQIA+ can include members of other communities,

	including allies — people who support and rally the LGBTQIA+ cause even though they don't identify within the community itself.



Other identities included in the LGBTQIA+ are:

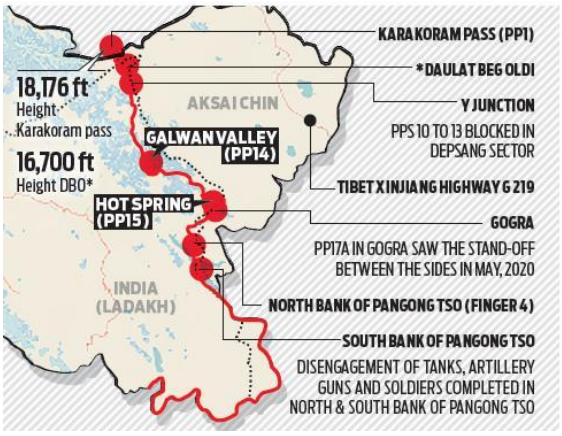
Agender	refers to those who do not identify as any gender at all
Demisexual	describes someone who requires an emotional bond to form a sexual attraction
Genderfluid	describes one's gender identity as self-expression and not static
Gray sexual	refers to the "gray area" between asexuality and sexuality
Non-binary	a term used for those who do not conform to binary gender identities
Pan sexual/Omni sexual	a term for individuals with desire for all genders and sexes
Polyamorous	a term for those open to multiple consensual romantic or sexual relationships at one time
Intersex	used for individuals who don't fit into specific gender norms of woman or man; can also be used for those with reproductive anatomy that isn't biologically typical
Sapiosexual	describes a person who is attracted to intelligence, regardless of a person's gender identity.

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SECURITY

(Internal and External)

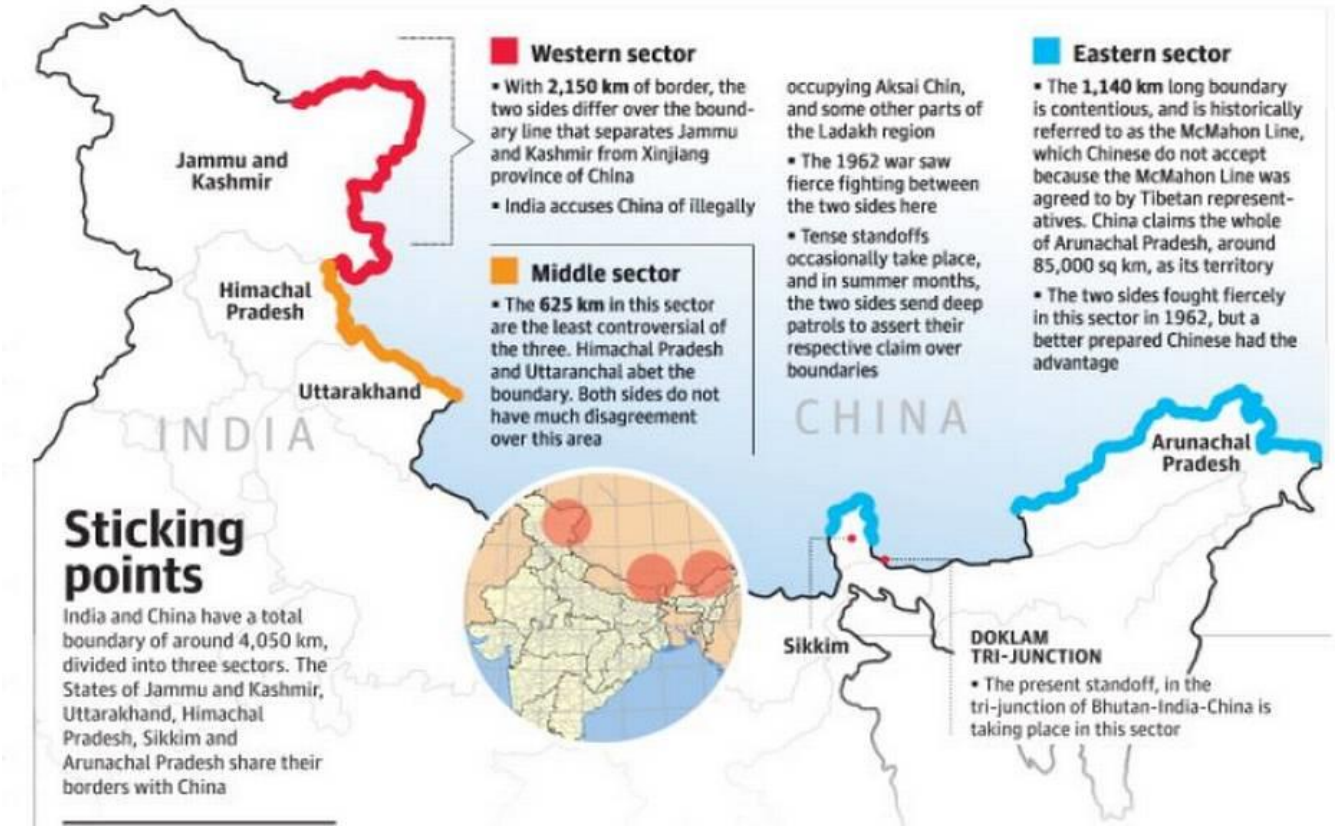
LINE OF ACTUAL CONTROL



News: *India and China will take up remaining issues along the Line of Actual Control (LAC) once the ongoing disengagement at Patrolling Point (PP) 15 in Gogra-Hot Springs is completed.*

Beijing welcomed the disengagement at PP15 as "a positive development", but reiterated its stand that it would not accept India's demand to restore the status quo prior to China's transgressions.

Line of Actual Control



Demarcation Line:

- The Line of Actual Control (LAC) is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.
- LAC is different from the Line of Control (LoC) with Pakistan:

  - The LoC emerged from the 1948 ceasefire line negotiated by the United Nations (UN) after the Kashmir War.
  - It was designated as the LoC in 1972, following the Shimla Agreement between the two countries. It is delineated on a map signed by the Director General of Military Operations (DGMO) of both armies and has the international sanctity of a legal agreement.

- The LAC, in contrast, is **only a concept** – it is not agreed upon by the two countries, neither delineated on a map or demarcated on the ground.
- Length of the LAC: India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.

Sectors Across the LAC

- It is divided into **three sectors**: the eastern sector which spans Arunachal Pradesh and Sikkim (1346 km), the middle sector in Uttarakhand and Himachal Pradesh (545 km), and the western sector in Ladakh (1597 km).
- The alignment of the LAC in the eastern sector is along the **1914 McMahon Line.**
- The McMohan line marked out previously unclaimed/undefined borders between Britain and Tibet.
- The middle sector is the least disputed sector, while the western sector witnesses the highest transgressions between the two sides.

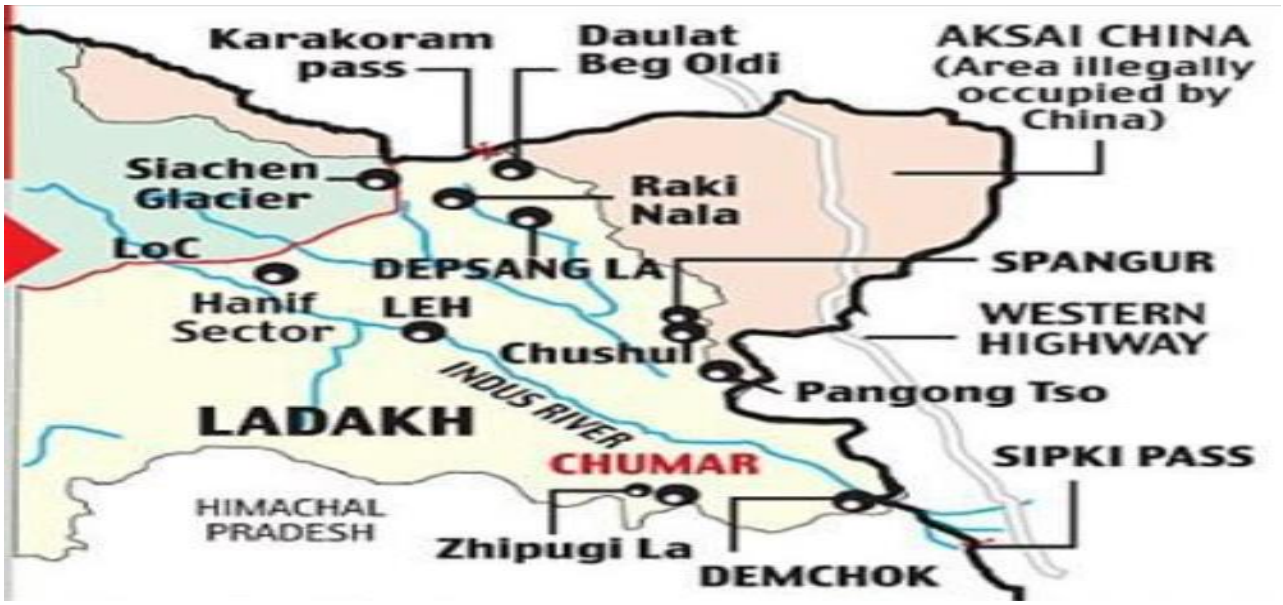
Disagreements

- India's claim line is different from that of the LAC. It is the line seen in the official boundary marked on the maps as released by the Survey of India, including Aksai Chin (occupied by China).
- In China's case, LAC corresponds mostly to its claim line, but in the eastern sector, it claims the entire Arunachal Pradesh as South Tibet.
- The claim lines come into question when a discussion on the final international boundaries takes place, and not when the conversation is about a working border i.e. LAC.

Border Negotiations

- Indian Prime Minister's visit to China in 2003 led to the agreement on appointing Special Representatives (SRs) and, in April 2005, there was agreement on the political parameters and principles that would underpin negotiations.
- The aim was a comprehensive solution encompassing all three sectors. The agreed boundary would follow well-defined geographical features and respect the interests of the settled populations.
- During Indian Prime Minister's visit to China in May 2015, the proposal to clarify the LAC was rejected by the Chinese.
- However, in the Wuhan (2018) and Mahabalipuram (2019) summits, both China and India had reaffirmed that they will make efforts to "ensure peace and tranquillity in the border areas".

DEPSANG AND DEMCHOK (Location)



UZBEKISTAN AND KAZAKHSTAN

- Defence Minister Rajnath Singh visited Tashkent to attend meeting of Defence Ministers of Shanghai Cooperation Organisation grouping
- He held bilateral meetings with his Uzbek counterpart Lieutenant General Bakhodir Kurbanov and Kazakhstan counterpart Col. Gen. Ruslan Faithovich Zhakslykov.



MONGOLIA

- Defence Minister Rajnath Singh held bilateral talks to further consolidate defence cooperation between the two countries.
- The visit is the first ever visit by an Indian Defence Minister to Mongolia and will further consolidate the defence cooperation and strategic partnership between the two



countries.

- India and Mongolia share a strategic partnership with defence being a key pillar.
- The bilateral defence engagements with Mongolia have been expanding over a period of time to include wide ranging contacts between the two countries, including Joint Working Group meeting, military to military exchanges, high level visits, capacity building and training programmes and training bilateral exercises.

M777 ULTRA-LIGHT HOWITZERS

#News: *The Army has deployed the M777 Ultra Light Howitzers (ULH) in the Rest of Arunachal Pradesh (RALP) area, beyond the Tawang sector, close to the Line of Actual Control (LAC) which significantly augments firepower and also gives rapid mobility at short notice.*



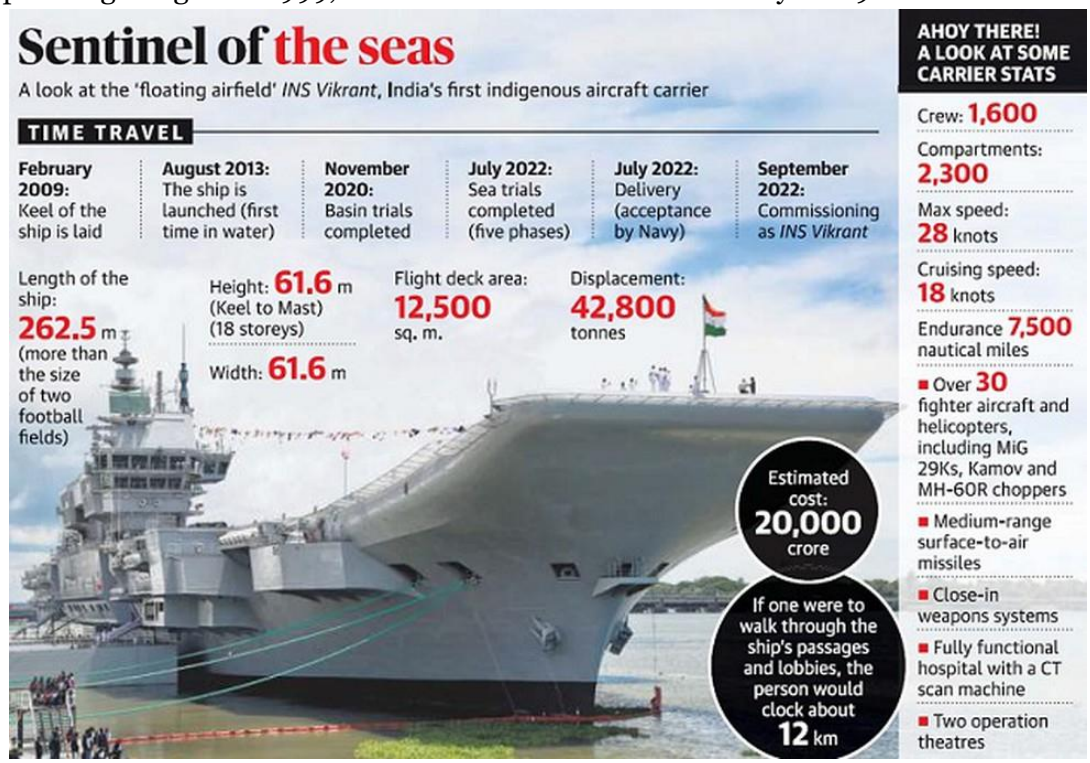
M777

- The 155mm, 39 Calibre **Ultra light Howitzers** have been procured from USA under Government to Government Foreign Military Sales in 2016 and will be assembled by U.S.A.'s BAE Systems in partnership with Mahindra Defence.
- It is one of the lightest guns that was actively used in Iraq and Afghanistan, the M777 will be deployed on the high altitude borders with China and Pakistan and is especially useful with the Chinook helicopters that can transport them quickly.
- It is smaller and lighter, as it is made of titanium and aluminium alloys and weighs just 4 tonnes. It has effective firing range of 24 km.
- It has been procured through the Foreign Military Sales (FMS) route under the `Buy Global' programme of the Defence Procurement Procedure (DPP).

INS VIKRANT AIRCRAFT CARRIER

- INS Vikrant, also known as Indigenous Aircraft Carrier 1 (IAC-1), is an aircraft carrier constructed by Cochin Shipyard in Kochi, Kerala for the Indian Navy. It is the first aircraft carrier to be built in India.
- INS Vikrant belongs to the Aircraft carrier variant. An aircraft carrier is a warship that serves as a seagoing airbase, equipped with a full-length flight deck and facilities for carrying, arming, deploying, and recovering aircraft.
- Typically, it is the capital ship of a fleet, as it allows a naval force to project air power worldwide without depending on local bases for staging aircraft operations.
- Carriers have evolved since their inception in the early twentieth century from wooden vessels used to deploy balloons to nuclear-powered warships that carry numerous fighters, strike aircraft, helicopters, and other types of aircraft.

- Work on the ship's design began in 1999, and the keel was laid in February 2009. The carrier was floated out of its dry dock on 29 December 2011 and was launched on 12 August 2013.
- It is 262 metres (860 ft) long and 62 metres (203 ft) wide, and displaces about 40,000 metric tons (39,000 long tons). It features a STOBAR configuration with a ski-jump.



- Vikrant is powered by four **General Electric LM2500+ gas turbines** on two shafts, generating over 80 megawatts (110,000 hp) of power. The gearboxes for the carriers were designed and supplied by Elecon Engineering.

VL-SRSAM

#News: *Recently, Vertical Launch Short Range Surface to Air Missile (VL-SRSAM) was successfully flight-tested by Defence Research & Development Organisation (DRDO) and the Indian Navy from an Indian Naval Ship at Integrated Test Range (ITR), Chandipur off the coast of Odisha.*

- VL-SRSAM has been **designed and developed jointly by three facilities** of the Defence Research and Development Organisation for deployment of Indian Naval warships.
- The missile has the capability of neutralizing various aerial threats at close ranges including sea-skimming targets.
- **Sea skimming** is a technique many anti-ship missiles and some fighter or strike aircraft use to avoid radar and infrared detection.

Design:

- The missile has been designed to **strike high-speed airborne targets at the range of 40 to 50 km** and at an altitude of around 15 km.
- Its design is based on **Astra missile** which is a Beyond Visual Range Air to Air missile.

- Astra ("weapon") is India's first air-to-air all weather beyond-visual-range active radar homing air-to-air missile, developed by the Defence Research and Development Organization.
- A **Beyond-Visual-Range missile (BVR) is an air-to-air missile** that is capable of engaging at ranges of 20 nautical miles or beyond.

Features:

1. **Cruciform wings:** They are four small wings arranged like a cross on four sides and give the projective a stable aerodynamic posture.
2. **Thrust Vectoring:** It is the ability to change the direction of the thrust from its engine, control the angular velocity and the attitude of the missile. Thrust is the force which moves an aircraft through the air.
3. **Canisterised system:** The inside environment is controlled, thus making its transport and storage easier and improving the shelf life of weapons.

VOSTOK 2022

#News: *Recently, India joined a multilateral strategic and command Exercise Vostok - 2022 in Russia along with China among other countries.*

What is Exercise Vostok?

- It will involve troops from several ex-Soviet nations, China, India, Laos, Mongolia, Nicaragua and Syria.
- The Indian Army was represented by the contingent of troops from **7/8 Gorkha Rifles**.
- It is aimed at interaction and coordination amongst other participating military contingents and observers.
- The Vostok 2022 exercise was held at seven firing ranges in Russia's Far East and the Sea of Japan and involve more than 50,000 troops and over 5,000 weapons units, including 140 aircraft and 60 warships.
- The Indian Army contingent will look forward to sharing practical aspects and putting into practice the validated drills, procedures and practice amalgamation of new technology through discussions and tactical exercises.

PARAMILITARY, MILITARY AND CENTRAL ARMED POLICE FORCE

#Concept: *To understand*

Paramilitary	Military	Central Armed Police Force
Protection of resources from internal threats like Left-Wing Extremism, Insurgents	Protecting the external borders of the country from terrorism and aggression	These forces provide security to key economic installations from any existential threat they also function

etc.	from other countries	on the borders to check illegal border crossings, encroachments, smuggling
Varied. Dependent upon the forces in question. For example, Assam Rifles reports to the Ministry of Home Affairs while the Coast Guard reports to the Ministry of Defence	Ministry of Defence	Ministry of Home Affairs
○ Assam Rifles ○ Indian Coast Guard ○ Special Frontier Force	○ Indian Army ○ Indian Air Force ○ Indian Navy	○ Central Reserve Police Force ○ Central Industrial Security Force ○ Indo-Tibetan Border Police Force
3 Star Officer of Equivalent Rank of Director General of Police	4 Star Officer of Equivalent Rank of General of Army	As it comes under the Home Ministry, it is headed by an IPS (Indian Police Service) Officer. A CAPF cadre can officially reach the post of Assistant Director-General of Police but the Director-General post is reserved for IPS
Some of the paramilitary wings such as the Assam Rifles originated in 1835 while the Coast Guard originated as late as 1978	The Indian Military in its current form began from the native armies of the East India Company, which later became the British Indian Army and later was merged into the national army upon independence	The Central Industrial Security Force (CISF) is the largest industrial security force with over 165,000 personnel

Shield IAS

HISTORY AND CULTURE

(Ancient; Medieval and Modern)

MYTHOLOGY AND HISTORY

Mythology	History
○ Mythology may either refer to the study of myths in general or a body of myths	○ History is a study of past events that narrate an important event or about real people who lived during a specified time period.
○ The main character of Myths are usually gods, demigods or supernatural human beings	○ History is about real individuals who have lived in the past
○ Mythology will find its uses in a variety of academic fields such as psychology, anthropology and folklore studies	○ History uses academic disciplines to study, analyze and question a sequence of past events
○ Mythology is not supported by any evidence, physical or otherwise, to support the narratives studied	○ History is backed by many pieces of evidence. Along with written accounts, oral accounts and material objects such as pottery are used to back up its narratives
Areas of Study include: ○ Symbolism ○ Theology ○ Creation Mythology ○ Religious Mythology ○ Nature Mythology ○ Hero Mythology	**Areas of Study include:** ○ Military History ○ Social History ○ Cultural History ○ Technological History ○ Diplomatic History ○ Economic History

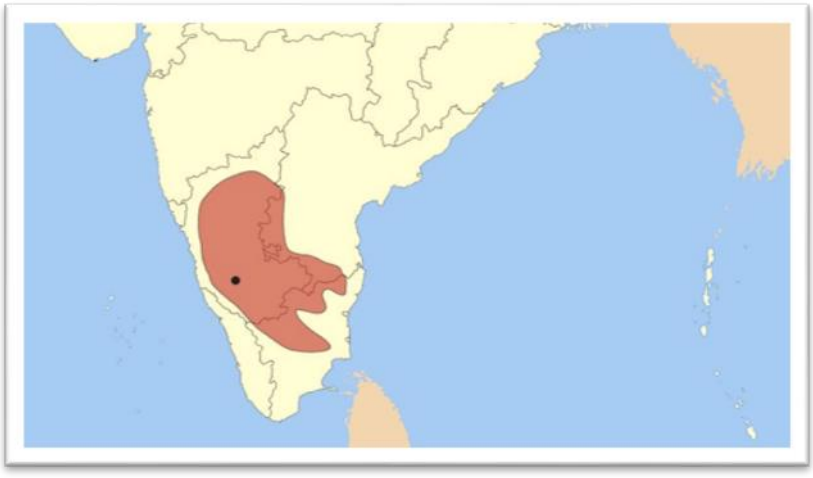
HISTORY AND PREHISTORY

History	PreHistory
○ The study of time period succeeding prehistory is called history	○ The study of the time period preceding history is called prehistory.
○ History is the study of the past starting from the time period when the writing system was introduced and written records were maintained.	○ Prehistory is the study of the past, even before writing was invented and written records were maintained. ○ It is the study of the time period between the usage of stone tools and the invention of the writing system.

○ Written records of the past events are the source of information.	○ Artefacts, Carvings on rocks etc. are the sources of information while studying prehistory.
○ Research on History is carried out by historians. Rare manuscripts written on leaves, dried animals skins, and papers are some of the sources used to study history.	○ Research on prehistory is carried out by archaeologists and anthropologists who use excavation, geology, molecular genetics, palaeontology etc. Hence a wide variety of social and natural sciences are used to study prehistory.
○ Study of History can be classified into different domains like Ancient History, Contemporary History, Modern History, Political History, Military History, Cultural History, Economic History, Environmental History, History based on different Geographical locations, People's history, Intellectual history etc.	○ Prehistory studies 3 different time periods – stone age, bronze age and iron age.

HOYSALA DYNASTY

- Hoysala dynasty, family that ruled in India from about **1006 to about 1346 CE in the southern Deccan and for a time in the Kaveri (Cauvery) River valley.** The first kings came from the hills northwest of Dorasamudra (present-day Halebid), which became their capital about 1060.
- With their hardy hill-dwelling, Kannada-speaking followers, they gradually absorbed Gangavadi (Mysore state) and the rich lands beyond the Tungabhadra toward Dharwar and Raichur. The imperialistic programs of the Chalukyas of Kalyani helped them, for under the **Hoysala rulers Vinayaditya (reigned c. 1047–98) and his grandson Vishnuvardhana (reigned c. 1110–41)** they gained wide experience as feudatory generals.
- Vishnuvardhana won much territory from the tough Kadambas of Hangal, but his weak son Narasimha I lost much of it. Yet Vishnuvardhana's expulsion of the Cholas from the plateau succeeded.

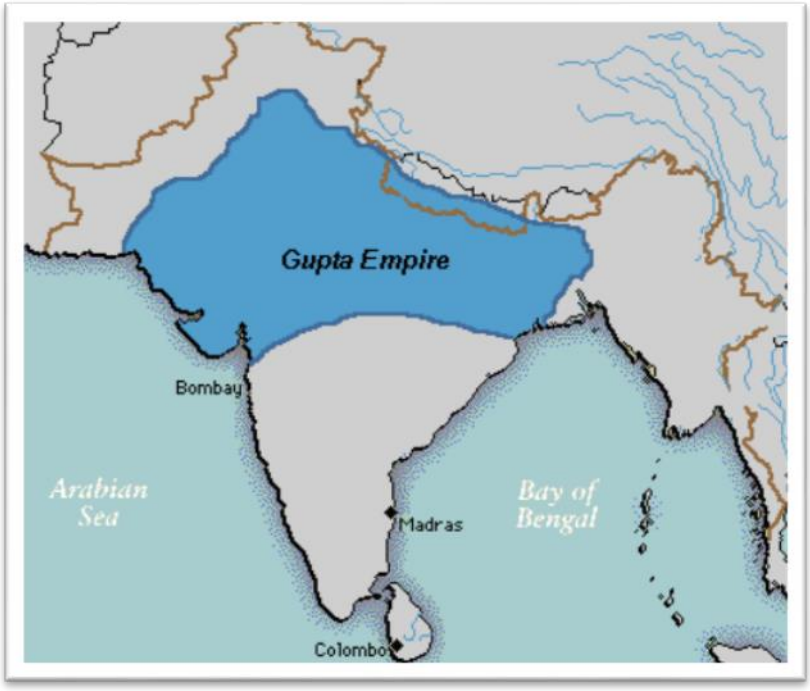


- His grandson **Ballala II** (reigned 1173–1220) was invited into the plains to help the Cholas. He agreed because his northern gains in 1189–1211 from the Chalukya dynasty beyond the Malprabha and Krishna rivers proper had diminished under pressure from the Yadava dynasty of Devagiri. He extended his dominions to the north of Mysore and defeated the Yadavas, making the Hoysala dynasty the dominant power in southern India.

- Ballala II's grandson **Someshvara** (reigned c. 1235–54) resided in the principality on the Kaveri given by the Cholas, and his son Ramanatha (reigned 1254–95) was allowed to remain there by the Pandya emperor. On his eviction, however, his attempt to take the plateau kingdom from his brother Narasimha III weakened Hoysala resources.
- **Ballala III (reigned c. 1292–1342),** who helped the sultan of Delhi against the Pandyas, brought about the dynasty's downfall by his futile ambitions. The Vijayanagar dynasty succeeded the Hoysalas.
- Hoysala architecture and sculpture, especially ornate and intricate, are best seen at **Halebid, Belur**, and **Somnathpur**. The family liberally patronized Kannada and Sanskrit literary artists.

GUPTA DYNASTY

- The decline of the Mauryan empire resulted in the rise of two major political powers – **the Kushanas** and the **Satavahanas** in the north and south respectively. Both these empires brought political unity and economic growth in their respective areas.
- The Kushan reign in north India came to an end around c.230 CE and then a good part of central India came under the domain of the Murundas (possible kinsmen of the Kushanas). The Murundas ruled for only 25 – 30 years.
- Around the last decade of the 3rd century CE (about 275 CE), the dynasty of the Guptas came to power. The Gupta empire established its control over a good part of the former dominions of both the Kushanas and the Satavahanas. The Guptas kept northern India politically united for more than a century (335 CE- 455 CE).
- The Guptas are believed to have been feudatories of the Kushanas.
- The original kingdom of the Guptas comprised Uttar Pradesh and Bihar with their centre of power at **Prayag (U.P).**
- The Guptas set up their rule over the fertile plains of the Madhyadesha, also known as Anuganga (the middle Gangetic basin), Saketa (U.P Ayodhya), Prayag (U.P) and Magadha (mostly Bihar).
- The Guptas made good use of the **iron ore reserves** in central India and south Bihar and also took advantage of their proximity to the areas in north India which carried on silk trade with the Byzantine empire (eastern Roman empire).
- The Gupta period in ancient India is referred to as the "Golden Age" because of the numerous



achievements in the field of arts, literature, science and technology. It also brought about the political unification of the subcontinent.

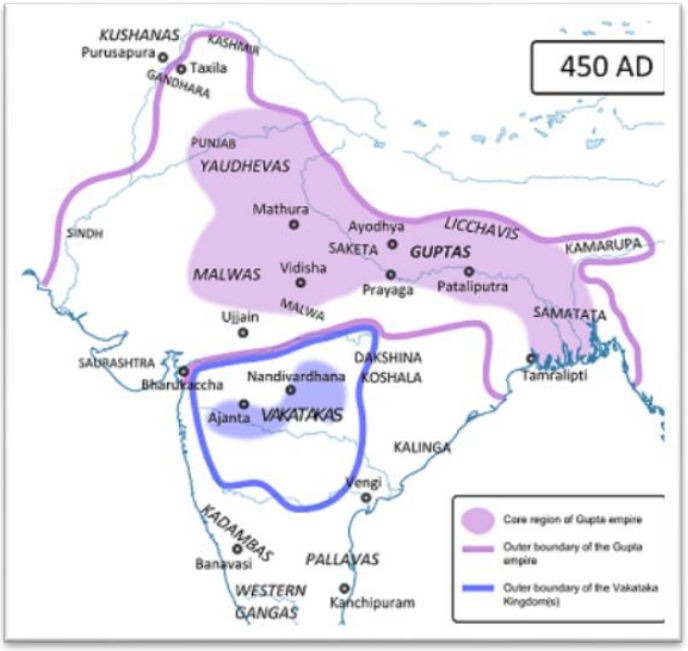
Gupta Empire – Kings

Gupta Dynasty Kings	Facts about Gupta Kings
Sri Gupta	○ Founder of Gupta Dynasty ○ Reign from 240 CE to 280 CE ○ Used the title of 'Maharaja'
Ghatotkacha	○ Son of Sri Gupta ○ Took the title of 'Maharaja'
Chandragupta I	○ Reigned from 319 CE to 335/336 CE ○ Started the Gupta Era ○ He assumed the title of 'Maharajadhiraja' ○ Married Lichchavi princess Kumaradevi
Samudragupta	○ Reigned from 335/336 CE to 375 CE ○ Called **'Napolean of India' by V.A. Smith** (Irish Indologist and Art Historian) ○ His campaigns are mentioned in the **Eran inscription** (Madhya Pradesh)
Chandragupta II	○ Reigned from 376-413/415 CE ○ Navratnas (9 Gems in his Court) ○ Took the title '**Vikramaditya**'
Kumaragupta I	○ Reigned from 415 CE to 455 CE ○ Founded Nalanda University ○ He was also called **Shakraditya**
Skandagupta	○ Reigned from 455 AD – 467 AD ○ Was a '**Vaishnavite**' ○ Repulsed an attack by the Hunas but this strained his empire's coffers
Vishnugupta	○ Last known ruler of the Gupta Dynasty (540 AD – 550 AD)

VAKATAKA DYNASTY

- The Satavahanas in peninsular India were succeeded by the Vakatakas (local power) who ruled the Deccan for more than two and a half centuries.
- The Vakatakas were the **contemporaries of the Guptas** in northern India.
- In the Puranas, the Vakatakas are referred to as the Vindhyakas.
- The Vakatakas belonged to the Vishnuvriddha gotra of the Brahmanas and performed numerous Vedic sacrifices.

- A large number of **copperplate land grant charters issued by the Vakatakas to the Brahmans** have helped in reconstructing their history.
- They were Brahmins and promoted Brahmanism, however, they also patronised Buddhism.
- Culturally, the **Vakataka kingdom became a channel for transmitting Brahmanical ideas and social institutions to the south**. The Vakatakas entered into matrimonial alliances with the Guptas, the Nagas of Padmavati, the Kadambas of Karnataka and the Vishnukundins of Andhra.
- The Vakatakas patronised art, culture and literature. Their legacy in terms of public works and monuments have made significant contributions to Indian culture.
- **Vindhyashakti** was the founder.



- Under the patronage of the **Vakataka king, Harisena**, the rock-cut Buddhist Viharas and Chaityas of the **Ajanta caves** (World Heritage Site) were built.
- Ajanta cave numbers XVI, XVII, XIX are the best examples of Vakataka excellence in the field of painting, in particular the painting titled Mahabhinishkramana.
- Vakataka kings, Pravarasena II (author of the Setubandhakavya) and Sarvasena (author of Harivijaya) were exemplary poets in Prakrit.
- During their rule, Vaidharbhariti was a style developed in Sanskrit which was praised by poets of the likes of Kalidasa, Dandin and Banabhatta.

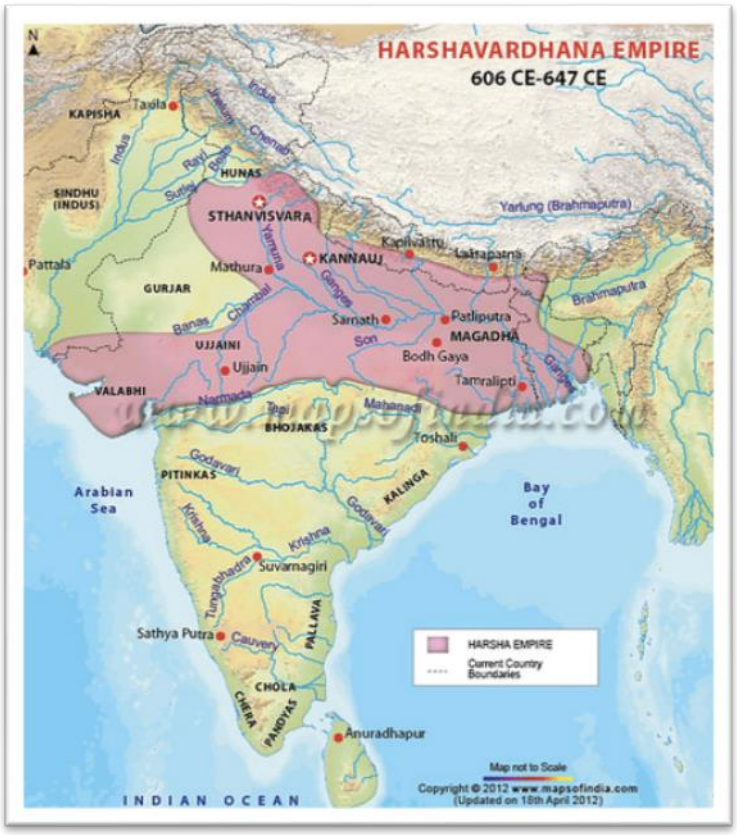
HARSHAVARDHANA

- Harshavardhana was born in 590 AD to King Prabhakaravardhana of Sthaneshvara (Thanesar, Haryana).
- He belonged to the **Pushyabhuti also called the Vardhana dynasty**.
- He was a Hindu who later **embraced Mahayana Buddhism**.
- He was married to Durgavati.
- He had a daughter and two sons. His daughter married a king of Vallabhi whereas his sons were killed by his own minister.
- King Harshavardhana deeds were praised by Chinese Buddhist traveller Xuanzang in his writings.

Harsha Ascension

- After Prabhakara Vardhana died, his elder son Rajyavardhana ascended to the throne of Thanesar.

- Harsha had a sister, Rajyashri who was married to king Grahavarman of Kannauj. Sasanka, the Gauda king killed Grahavarman and kept Rajyashri prisoner. This prompted Rajyavardhana to fight against Sasanka. But Sasanka killed Rajyavardhana.
- This led the 16-year old Harshavardhana to ascend the throne of Thanesar in 606 AD.
- He vowed to avenge his brother's murder and also rescue his sister.
- For this, he forged an alliance with Bhaskaravarman, the Kamarupa king. Harsha and Bhaskaravarman marched against Sasanka. Ultimately, Sasanka left for Bengal and Harsha became the king of Kannauj also.



Empire of Harsha – King Harshvardhana's Empire

- On acquiring Kannauj, Harsha united the two kingdoms of **Thanesar and Kannauj**.
- He moved his capital to Kannauj.
- After the fall of the Guptas, North India was divided into many small kingdoms.
- Harsha was able to unite many of them under his command. He had under his control of Punjab and central India. After Sasanka's death, he annexed Bengal, Bihar and Odisha.
- He also defeated the Vallabhi king in Gujarat. (The Vallabhi king and Harsha came to a truce by a marriage between Harsha's daughter and the Vallabhi king Dhruvabhata.)
- However, Harsha's plans to conquer lands to the south were hampered when the Chalukya king, Pulakesin II defeated Harsha in 618-619 A.D. This sealed Harsha's **southern territorial limit as the Narmada River.**
- There were two types of territories under Harsha. One was directly under him and the other type was those that were feudatories.

- **Direct territories:** Central Provinces, Bengal, Kalinga, Rajputana, Gujarat
- **Feudatories:** Jalandhar, Kashmir, Kamarupa, Sind, Nepal
- Even the feudatories were under the tight command of Harsha. Harsha's reign **marked the beginning of feudalism in India.**

- **Hiuen Tsang visited India during Harsha's reign**. He has given a very favourable account of king Harsha and his empire. He praises his generosity and justice.
- Harsha was a great patron of the arts. He himself was an accomplished writer. He is credited with the Sanskrit works **Ratnavali, Priyadarshika and Nagananda**.

- **Banabhatta** was his court poet and he composed the Harshacharita which gives an account of Harsha's life and deeds.
- Harsha generously supported the Nalanda University.
- He had a good tax structure. 1/4th of all the taxes collected were used for charity and for cultural purposes.
- Harsha was a competent military conqueror and an able administrator.
- Harsha was the last king to rule over a vast empire in India before the invasions by the Muslims.

Harsha's death

- Harsha died in 647 AD after ruling for 41 years.
- Since he died without any heirs, his empire disintegrated very soon after his death.

CHALUKYA DYNASTY

There were three distinct but related Chalukya dynasties.

- **Badami Chalukyas**: The earliest Chalukyas with their capital at **Badami (Vatapi)** in Karnataka. They ruled from mid-6th century A.D. They declined after the death of their greatest king, **Pulakesin II in 642 AD.**
- **Eastern Chalukyas**: Emerged after the death of Pulakesin II in Eastern Deccan with capital at **Vengi.** They ruled till the 11th century.
- **Western Chalukyas:** Descendants of the Badami Chalukyas, they emerged in the late 10th century and ruled from **Kalyani** (modern-day Basavakanlyan).



Extent of the Chalukya dynasty

- The Chalukya dynasty reached its peak during the reign of **Pulakesin II.**
- His grandfather Pulakesin I had created an empire around Vatapi.
- Pulakesin II subjugated the Kadambas, the Gangas of Mysore, the Mauravas of North Konkan, the Latas of Gujarat, the Malavas and the Gurjars.
- He also succeeded in getting a submission from the Chola, Chera and Pandya kings.
- He had also defeated King Harsha of Kannauj and the Pallava king Mahendravarman.

Administration and Society

- The Chalukyas had great **maritime power**.
- They also had a well-organised army.
- Though the Chalukya kings were Hindus, they were tolerant of Buddhism and Jainism.
- Saw great developments in **Kannada and Telugu literature.**

- Sanskrit along with the local languages thrived. An inscription dated 7th century mentions Sanskrit as the language of the elite whereas Kannada was the language of the masses.

Art and Architecture

- They built cave temples depicting both religious and secular themes.
- The temples had beautiful mural paintings also.
- The temples under the Chalukyas are a good example of the **Vesara style of architecture**. This is also called the **Deccan style or Karnataka Dravida or Chalukyan style**. It is a **combination of Dravida and Nagara styles**.
- **Aihole temples**: Ladh Khan temple (Surya Temple), Durga temple, Huchimalligudi temple, Jain temple at Meguti. There are 70 temples in Aihole.
- **Badami temples**
- **Pattadakkal**: is a UNESCO World Heritage site. There are ten temples here – 4 in Nagar style and 6 in Dravida style. Virupaksha temple and Sangameshwara Temple are in Dravida style. Papanatha temple is in Nagara style.

PULAKESIN II

- The greatest of the Chalukya kings.
- Extended the Chalukya rule to most parts of the Deccan.
- His birth name was **Eraya**. Information about him is obtained from the **Aihole inscription dated 634**. This poetic inscription was written by his court poet **Ravikirti in Sanskrit language** using the Kannada script.
- Xuanzang visited his kingdom. He has praised Pulakesin II as a good and authoritative king.
- Though a Hindu, he was tolerant of Buddhism and Jainism.
- He conquered almost entire south-central India.
- He is famous for stopping Northern king Harsha in his tracks while he was trying to conquer southern parts of the country.
- He had defeated the **Pallava king Mahendravarman I** but was **defeated and killed by Mahendravarman's son and successor Narasimhavarman I** in a series of battles he had with the Pallavas.
- For the next 13 years, Badami remained under Pallava control.
- Pulakesin II received a Persian mission as depicted in an Ajanta cave painting. He maintained **diplomatic relations with the King of Persia Khusru II.**
- His death saw a lapse in Chalukya power.

GURJARA-PRATIHARA

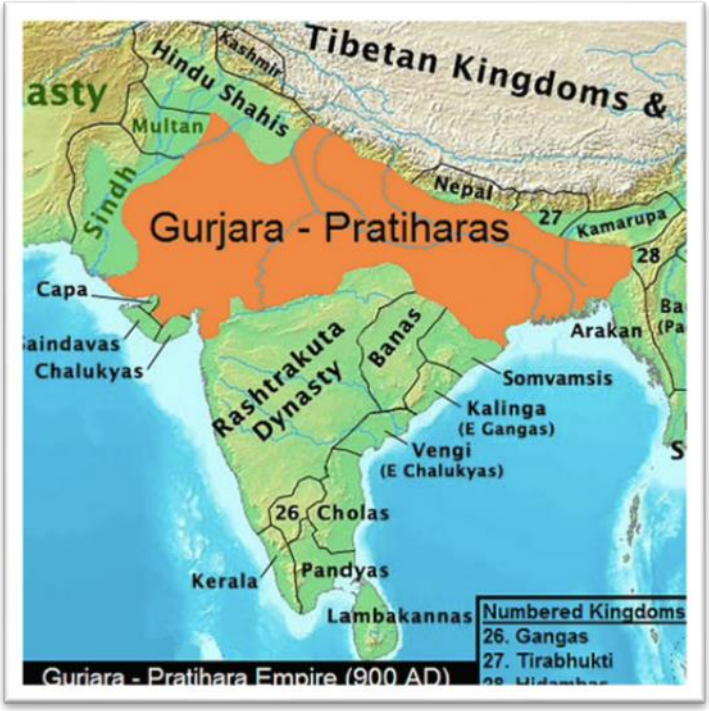
- The Gurjara-Pratiharas, or simply, the Pratiharas (8th century CE - 11th century CE) held their sway over **western and northern India.**
- This dynasty saw its fortunes rising under **Nagabhata I** (730–760 CE) who successfully defeated Arab invaders.

- **Bhoja or Mihira Bhoja** (c. 836-885 CE) was the most well-known king of this dynasty.
- The Pratiharas were known chiefly for their patronage of art, sculpture and temple-building, and for their continuous warfare with contemporary powers like the Palas (8th century CE - 12th century CE) of eastern India and the Rashtrakuta Dynasty (8th century CE - 10th century CE) of southern India.

THE PRATIHARAS ROSE TO FAME IN THE LATE 8TH CENTURY CE AFTER SUCCESSFULLY RESISTING ARAB INVADERS.

Rise of the Gurjara-Pratiharas

- In **647 CE**, the **fall of the Pushyabhuti Dynasty** based at Kanyakubja (modern-day Kannauj city, Uttar Pradesh state) under Harshavardhana (606-647 CE) led to chaos and political instability. Many kingdoms rose and fell, and those which came to dominate were those of the Pratiharas, the Palas of eastern India and the Rashtrakutas of southern India. **Kanyakubja was ruled at the time by the Ayudha dynasty** (c. 9th century CE).
- The Gurjaras are variously seen as a foreign people gradually assimilated into Indian society, or as the local people who belonged to the land called Gurjara (Gurjaradesha or Gurjaratra), or as being a tribal group. The Pratiharas, who derived their name from the word pratihara (Sanskrit: "doorkeeper") are seen as a tribal group or a clan of the Gurjaras. In the epic Ramayana, Prince Lakshmana acted once as a doorkeeper to his elder brother King Rama.



- Since Lakshmana was regarded as their ancestor, the Pratiharas adopted this title. Various other Gurjara families started out as local officials and eventually set up small principalities to the south and east of the area of Jodhpur in modern-day Rajasthan state.
- The Pratiharas rose to fame in the late **8th century CE after successfully resisting Arab invaders**. Besides inscriptions, the sculpture created and monuments built during their reign provide valuable evidence of their times and rule.
- Primary literary sources include the **accounts of Arab merchants who visited India in this period like Suleiman** (c. 9th century CE) who visited India in the 9th century CE and left behind an account of his travels, and **al-Masudi** (c. 10th century CE), who visited Gujarat in 915-16 CE.
- All these writers refer to the Paratihara Kingdom as **al-Juzr** (derived from the Sanskrit Gurjara) and attest "to the great power and prestige of the Pratihara rulers and the vastness of their empire".

PRATIHARA KINGS

Nagabhata I:

- He was the first significant king of the dynasty and because of his achievements that included the defeat of the Arabs, his line came to overshadow other Gurjara-Pratihara families.
- He fought against the Rashtrakutas, though unsuccessfully.

Vatsaraja:

- Able to defeat the Bhandi or Bhatti clan, Vatsaraja (775-800 CE) gained sway over most of central Rajasthan.
- He then dabbled in Kanyakubja politics, defeated the Palas and secured the throne for his Ayudha nominee.
- Dhruva Rashtrakuta dealt him a serious blow, capturing the insignia of royalty that Vatsaraja had captured from the Palas, and drove him to seek shelter in the deserts of Rajasthan.

Nagabhata II:

- Vatsaraja's son Nagabhata II (800-833 CE) tried to restore the lost fortunes of the dynasty.
- He subdued the kingdoms of Sindh (now in present-day Pakistan) and those in eastern India and later defeated the Palas.
- His further conquests were over the kings ruling different portions of Gurjaradesha in western India, including the Arabs.
- Nagabhata engaged in conflict with the Rashtrakutas over the control of Gujarat and was eventually defeated by the Rashtrakuta Govinda III (793-814 CE), losing thereby south Gujarat and Malwa.
- After a time, able to regain his strength, he managed to recover some of his lost territories.
- He also captured Kanyakubja, ending the Ayudha rule. This city now became the Pratihara capital.

Bhoja or Mihira Bhoja

- Grandson of Nagabhata II, he ruled for nearly 50 years.
- Though initially defeated by the Palas, Rashtrakutas, and the Kalachuris, he managed to gather his forces and launch a counterstrike.
- He defeated the Palas, and possibly even the Rashtrakutas with the help of his Chedi and Guhila feudatories. He managed to annex many parts of the Pala Empire in eastern India and recovered territories in Gujarat, Rajasthan and Madhya Pradesh, thus extending his empire to a considerable extent.

Mahendrapala I

- Mahendrapala I (885-910 CE) maintained the empire established by his father Bhoja and made fresh conquests in the east.
- He lost to the king of Kashmir and ceded to him some territories in Punjab. His death was followed by a civil war between his son Mahipala and his half-brother Bhoja II.

Mahipala I

- Mahipala I (c. 912-944 CE) managed to secure the throne but was defeated by the Rashtrakutas, which enabled the Palas to take advantage of the situation and retake some of their former territories from the Pratiharas.
- Mahipala tried to recover from these losses and did regain some lost lands but his plans of conquest were checked in the later years once more by the Rashtrakutas.

Mahendrapala II (c. 944-948 CE) and his successors did not contribute anything significant in their reigns. These kings ruled more like petty kings not much involved in the affairs of the day.

Administration

- In terms of administration, much of the Gupta Empire's (3rd century CE - 6th century CE) and Harshavardhana's ideas and practices were retained.
- The king was supreme and was aided by a variety of ministers and officials.
- Many minor kings and dynasties ruled as vassals of the king and were expected to be loyal, pay a fixed tribute to the king, conclude matrimonial alliances with the royal family and supply troops when needed. Some areas were administered directly by the centre and were divided into **provinces (bhukti)** and d**istricts (mandala or vishaya).**
- They were, respectively, governed by a **governor (uparika)** and a **district head (vishayapati),** who were tasked with collecting land revenue and maintaining law and order with the help of the army units stationed in their areas.
- The village, as in earlier times, remained the basic unit of administration which was carried out by the headman and other officials, all paid through land grants.
- However, many vassals always looked forward to becoming independent and often fought against the king like the Paramaras and the Chandellas of modern-day Bundelkhand region (lying in the states of Uttar Pradesh and Madhya Pradesh).

Culture

- The poet **Rajashekhara** was associated with Mahendrapala and Mahipala and left behind many works of note.
- Many Hindu temples and buildings were built, many of which survive even today. “Under the two centuries of Gurjara-Pratihara rule till 1019 AD, the city of Kanauj became one of the greatest centres of art, culture and commerce in the Indian subcontinent”.

Legacy

- Nagabhata I's efforts were crucial in checking the Arab invasion of India. The Pratiharas remained as strong bulwarks against the Arabs.
- They also made valuable contributions in the field of art, culture and commerce. The sculptural styles developed during the period were unique and remained an influence on later styles. The nagara style of Hindu temple architecture received a big boost under their rule.

- According to this style, the temple was built on a stone platform with steps leading up to it, with many regional variations. The highlight was a shikhara (a mountain-like spire on top, curving in shape). This style became very popular in northern India in the following centuries.

RASHTRAKUTA DYNASTY

- The name 'Rashtrakuta' in Sanskrit means **'Country' (Rashtra)** and **'Chieftain' (Kuta).**
- This explains their lineage from the time of the Mauryan Emperor Ashoka the Great (3rd century BCE) when they were primarily small clan heads in different parts of India. In some of the edicts of Ashoka (in Mansera, Girnar, Dhavali) the word Rathika appears, who may have been the ancestors of the Rashtrakutas.
- However, though many historians claim that the Rashtrakutas were the earlier Rathikas mentioned in those inscriptions, this theory is not backed up by enough archaeological evidence. Medieval Sanskrit literature reveals fragments of their lineage, which is thought to be from the Mauryan times as small clan heads.
- However, their rise began when **Dantidurga (also knows as Dantivarman**, r. until 756 CE), who was a feudatory of the Badami Chalukyas.

Rulers of Rashtrakutas

- **Dantivarman or Dantidurga** was the founder of the Rashtrakuts dynasty. He made his capital at **Manyakhet or Malkhed** near modern Sholapur.
- Dantivarman was succeeded by his uncle Krishna I about A.D. 758.
- **Krishna-I** extended his kingdom from **Maharashtra to Karnataka.**
- Dhruva became king in about A.D. 779. It was the opening of a new era in the history of Rashtrakutas.

Dhruva was the first Rashtrakuta ruler from Deccan who had intervene in the tripartite struggle of supremacy in north India. He had defeated two powers of the North India i.e the Pratihara king Vatsaraja and the Pala king Dharmapala of Bengal.

Dhruva added the emblem of Ganga and Yamuna to his imperial emblem after his successful campaigns in north India.

Dhruva was succeeded by Govinda-III (A.D. 793-813).

- **Govinda-III** also made invasions into north India and fought successfully against the Pala king Dharmapala and Chakrayudha the ruler of Kanauj.

Govinda-III shattered the union of the Ganga, Chera, Pandya, and Pallava rulers in south India.

- Govind-III was succeeded by his son Amoghavarsha-I (A.D. 814-878).

Amoghavarsha-I ruled for 60 years. He is better known for his leanings towards religion and literature.

Amoghavarsha supported **Jainism.** He was a patron of literature and patronized as the men of letter.

Amoghavarsha wrote **Kavirajamarga.** It was earliest Kannada work on poetics.

Amoghavarsha was a great builder. He built the capital city Manyakhet.

- The successor of Amoghavarsha were Indra-III (A.D. 915-927) and Krishna-III (939- 965). Both were the great Rashtrakuta rulers.
- Indra-III had defeated the Pratihara king Mahipala-I and ransacked his capital Kanauj.
- Krishna-III was the last famous king of Rashtrakuta. He struggled against the Paramaras of Malwa and eastern Chalukya of Vengi.
- Krishna-III also struggled against the Chola ruler of Tanjore. He reached up to Rameshwaram and built a pillar of victory and a temple there.
- The dominance of the Rashtrakutas in the Deccan is the remarkable period in the history of India.
- Rashtrakuta ruled more than three hundred years. They patronized **Saivism and Vaishnavism**. In addition, they also protected **Jainism, Buddhism, and Islam**.
- The **Rashtrakuta rulers permitted the Muslim merchants to settle in their kingdom, build mosques, and preach their religion.**
- Rashtrakuta rulers equally support **Sanskrit, Prakrit, and Kannada along with Apabhramsa** languages.
- Rock-cut cave temples excavated at Ellora are the symbols of Rashtrakuta's religious toleration. They are one of the splendors of Indian arts.
- The Kailash temple was built by the Rashtrakuta king Krishna-I. It is a supreme piece of art.

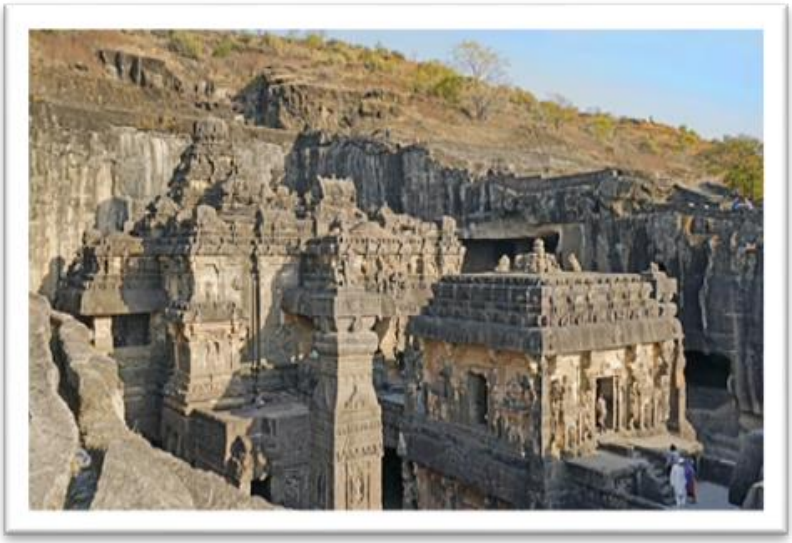
Administration and Society

- The Rashtrakutas divided their kingdom into various provinces, and the provinces were further divided into districts.
- The kings or emperors of the Rashtrakutas were followed in hierarchy by a Chief Minister who had a cabinet of ministers and different army personnel under him. All the ministers had to undergo military training and be ready for war at any moment.
- The empire had a mighty army who were always kept ready, especially in their capital city for any incursion or invasion. It was divided into three units; infantry, cavalry, and elephants.
- It was always diligently trained and kept in proper shape all the time. Feudatory kingdoms would pay tributes, and in case of a special warlike situation or a natural calamity, the administration would also exact some special taxes to meet the expenses, but not at the cost of the happiness and well-being of its subjects. However, the precarious balance that the Rashtrakutas had to maintain between war and well-being, between defence and invasion, between expansion and their administration, ultimately led to their decline.
- The society was divided into **various castes based on profession**.
- The prevailing castes had their own sets of rules, regulations, and customs, which they followed quite diligently. They also followed ancient orthodoxy. However, due to the Rashtrakuta rulers being tolerant towards all religions, society was generally accommodative of adherents of various faiths.

- Kannada is one of the most important languages in current-day India, and it was the Rashtrakutas who made it popular and a tool of day-to-day communication, though the language had already been in use for a long time.
- They also patronised Sanskrit which was actually a language of the elite. Amoghavarsha I was instrumental in composing groundbreaking works in both languages, and his Kavirajamarga was an important milestone in Kannada poetry.

Art & Architecture

- The Rashtrakutas were instrumental in establishing an aesthetic architectural form now known as the **Karnata Dravida style**.
- The stunning **Kailasa Temple of Ellora** (a rock-cut structure) is the epitome of Rashtrakuta architectural achievement, but many of the caves of **Ellora and Elephanta** (in present-day Maharashtra state) have also been created and renovated under the supervision of the Rashtrakutas.



- Another UNESCO World Heritage Site, the temples at **Pattadakal** also came under the sway of the Rashtrakutas after the defeat of the Chalukyas and were subsequently renovated and expanded by the Rashtrakutas. The **Jain Narayana Temple** is said to be solely created by the Rashtrakuta Dynasty.

PALA DYNASTY

- Pala dynasty was the ruling dynasty in Bihar and Bengal, India, from the 8th to the 12th century.

About Palas

- **Gopala** was the elected king by the people in a revolution to end the Matsyanyaya.
- The history of Gopala's early life is not known.
- Gopala introduced peace in the kingdom and laid the foundation for the Pala dynasty.
- **Dharmapala became ruler after Gopala in about A.D. 780**. He undertook the expansion of his empire.
- Dharmapala defeated Indrayudha, the king of Kanauj and installed his nominee Chakrayudha to the throne of Kanauj.
- Dharmapala held a grand darbar at Kanauj, which was attended by several kings. However, he could not consolidate his position.
- Rashtrakuta king, Dhruva defeated Dharmapala near Monghyr (Bihar) in a battle.
- Meanwhile Nagabhatta II, Pratihara king became more powerful.

- After Dharmapala, his son **Devapala** became the ruler. He was the mightiest Pala king. He conquered –**Pragjotishpur (Assam) and Utkala (Orissa).**
- The kings Palas dynasty ruled over Bihar, Bengal, and parts of Orissa and Assam with many ups and downs for over four centuries.
- Arab merchant Sulaiman testifies their power. He calls the Pala kingdom Ruhma (or Dharma), short for Dharmapala,
- Sulaiman mentioned that the Pala rulers were at war with their neighbors – the Pratiharas and the Rashtrakutas, but his troops were more in number than his adversaries.
- Sulaiman also mentioned that 'it was usual for the Pala king to be accompanied by a force of 50,000 elephants.'
- The Tibetan chronicles also provide detailed information about the Palas dynasties.
- According to Tibetan historians, **Pala rulers were great patrons of Buddhist learning and religion**.
- **Dharmapala founded the famous Buddhist monastery at Vikramashila**. It became eminent as Nalanda.
- During Pala reign, **Nalanda University** became famous all over the world.
- During this period, Nalanda had more than 10,000 students and teachers coming not only from different parts of India, but also from central Asia, China, South East Asia, and Sri Lanka.
- Nalanda University was considered as one of the biggest educational institutions of its time.
- It imparted education in various branches of knowledge.



- Dharmapala donated the royal income from two hundred surrounding villages to meet the expenses of Nalanda University.
- Devapala also donated income from five villages.
- The king of Suvarnadvipa (modern Malaya Peninsula, Java and Sumatra), Maharaja Balaputradeva erected a monastery in Nalanda and requested Devapala to donate five villages for the maintenance of that monastery.
- The Pala kings patronized Hinduism as well.
- Vinayakapala built one thousand temples in honor of the Lord Saiva. They also gave donations to Brahmans to settle in their country and run gurukuls.
- The powerful Sailendra dynasty of South East Asia sent many embassies to the Pala kings. They ruled over Malaya, Java, Sumatra, and neighboring islands.
- The Palas had close trade contacts and cultural links with South East Asia and China.
- The trade with South East Asia and China was very profitable and added greatly to the prosperity of the Pala Empire.

TRIPARTITE STRUGGLE



- There were three great powers in India in the early phase of 8th century A.D., namely –**The Gurjara Pratihara in the north, The Palas in the east, and The Rasthrakutas in the Deccan.**
- The tripartite struggle for the supremacy between the Palas, the Gurjara Pratiharas, and the Rashtrakutas was the important event of these centuries.
- The main cause of this struggle was the **desire to possess the city of Kanauj,** which was then a symbol of sovereignty. And, some other cause of this struggle was to have control over the intermediate fertile regions.
- The shifting of the power among these three was determined both by the internal strength of the respective region and the inability of the rulers to extend their control beyond their respective regions for a longer duration.
- All of the three dynasties were having more or less same military equipment, administrative machinery, and the strategic concepts.
- The Arab travelers also affirmed that these three powers were equal in strength.
- Because of the balance of power, there was a great political stability within the regions, which nurtured the development of culture and education.

- The first encounter took place among the **Pratihara king Vatsaraja, the Pala king Dharmapala, and Rashtrakuta king Dhruva.**
- Rashtrakutas achieved a complete victory in the first phase. But the unfortunate death of Dhruva was a great set back to Rashtrakutas.
- **Pala king Devapala (A.D. 821-860)** was the **most prominent in the second phase** because his contemporary Pratihara and Rashtrakuta kings were weak rulers.
- **Pratihara kings Bhoja (A.D. 836-885) and Mahendrapala (A.D. 885-910) proved to be more powerful in the third phase (during the 9th century).**
- Each of the three kingdoms Pratiharas, Pala, and Rashtrakutas declined almost simultaneously around the end of the 10th century A.D.
- The end of these three dynasties marked the end of the glorious era of more than 300 years.

EDITORIALS OF THE MONTH

Note: In the UPSC Main Examination General Studies papers, the questions are asked on issues related to Polity and Governance, Economy, Social Issues, Science and Technology, Environment, Security and International Relations etc.

In this regard, important editorials on the above issues are given in this section to assist the students in getting access to important current issues and content for General Studies answer writing.

MANAGING SPORTS

SOURCE: THE HINDU **#SPORTS**

When sports administrators make news, it is often not for the right reasons. These past few months, India's sports administrators have been in the news far too frequently. Rarely does a day end before one of them is pulled up by the court, another is forced to resign or yet another stakes claim to a post. In the latest instance, the sports official to hit the headlines has been Anil Khanna, who resigned on Wednesday as the acting-president of the Indian Olympic Association (IOA). He had assumed charge after Narinder Batra was forced to quit in July. The International Olympic Committee (IOC) has made it clear that it would not recognise any acting/interim president of the IOA. The IOC is not pleased that the long-pending elections to the IOA have not been held and has even threatened India with serious consequences. The IOC could ban India if the elections are not held by December. Then, Indian athletes would not be able to represent the country in events, including the Olympic Games, and India would not be able to receive funds from the IOC. Only a month ago, the Gokulam Kerala football team found out what happens when such a ban is enforced. The players had to return from Uzbekistan, where they had gone to take part in the AFC Women's Club Championship. That was because the world football governing body FIFA had banned the All India Football Federation (AIFF).

The ban has since been lifted and the AIFF has conducted its elections. But there are other sports, such as hockey and table tennis, that continue to be run by the court-appointed committees of administrators. The main reason behind the messy state of affairs in India's sports administration at the moment is the reluctance of the officials, across sports bodies, to accept the National Sports Development Code of India, introduced by the central government in 2011. Its intention was noble. By putting a limit to the tenure and age of an administrator, it had the potential to stop sports federations from remaining as the personal fiefdoms of a few, many of them politicians. At a time when Indian sport is showing more promise than it ever did before — the Tokyo Olympics, the Birmingham Commonwealth Games, the Thomas Cup and the Chess Olympiad have shown that the country has more to offer than just cricket — the administration needs to get its act together. The incumbents should gracefully make way for new administrators with fresh ideas and also allow more former international sportspersons in key administrative posts.

FOR INTERNAL DEMOCRACY

SOURCE: THE HINDU **#POLITY AND GOVERNANCE**

The Election Commission of India (ECI) has rejected the idea of a 'permanent president' for a party, while taking issue with the Yuvajana Shramika Rythu Congress Party (YSRCP), which rules Andhra Pradesh. The party reportedly elected Chief Minister Y.S. Jagan Mohan Reddy as its president for life in July 2022. The ECI says such a step is inherently anti-democratic. The YSRCP's response to the ECI's letters sent earlier, that it will conduct an "internal enquiry", borders on the absurd. There is merit in the ECI's view and its insistence on internal democracy, as no individual should be elected leader for life. Any party that participates in a democratic process, and wants to govern and legislate, should include formal and periodic election of office-bearers as part of the way it functions as an association. Indian political parties are of myriad kinds — some, such as the Bharatiya Janata Party or the Communist parties, are structured, cadre-based organisations that function towards an ideological goal or a principle; others, such as the Congress, are more loosely structured collections of individuals with even different strands of opinion but functioning within an association that has core ideals; some others still reflect social or regional cleavages and so on.

Increasingly, the fragmentation of India's polity into a federalised, multi-party system has also given way to domination by "charismatic" individuals or their families, mainly because of the nature of support that these parties enjoy or due to their financing structures which necessitates centralised control by a single coterie or a family. This is why several political parties today do not insist on thoroughgoing internal elections to secure their leadership; and even if they do conduct polls, they lack sufficient contestation and are done to reaffirm the dominance of the high command. In some cases, with electoral politics being a zero-sum game, political parties are loath to allow internal contest, fearing that this could foster disunity, as opposed to nomination and consensus-building on leadership. The ECI has periodically used guidelines issued for registration of parties under Section 29A of the Representation of the People Act, 1951 to remind parties to conduct elections and to ensure that their leadership is renewed, changed or re-elected every five years. But the commission does not have any statutory power to enforce internal democracy in parties or to mandate elections. The lack of such substantive power only leads to parties carrying out the ECI's edicts in a mechanical manner. However, with dynasticism and a lack of internal democracy becoming a matter of public debate, perhaps public pressure would finally bear upon parties to do the right thing.

CRISIS IN CAUCASUS

SOURCE: THE HINDU **#INTERNATIONAL AFFAIRS**

The violent border clashes between Armenia and Azerbaijan have raised fears of another war in the Caucasus. The countries had fought a disastrous weeks-long war in 2020 over the disputed Nagorno-Karabakh region in which Azerbaijan made gains before Russia forced a

ceasefire. Tensions remained with the occasional flare-ups, but Tuesday's clashes were the deadliest since 2020. Armenia and Azerbaijan have accused each other of provocation, but the fighting, as per initial reports, took place on the Armenian side and Armenia took heavier casualties. It may not be a coincidence that the crisis broke out at a time when Russia, Armenia's security ally, has been struggling to hold its gains in Ukraine. Armenia is a member of the Russia-led Collective Security Treaty Organisation, whose NATO-like charter stipulates that an attack against one member could be treated as an attack against all. Armenia had turned to Russia for help, but Moscow's response was rather cautious — it called for de-escalation and claimed that it had brokered another ceasefire.

The dispute over Nagorno-Karabakh goes back to the pre-Soviet era. When the Soviet Union was formed, the Armenian majority enclave became part of the Azerbaijan Soviet Republic. When the Soviet Union collapsed and Armenia and Azerbaijan became independent republics, the clashes resurfaced. Armenian rebels in Nagorno-Karabakh fought off the Azeri forces and joined Armenia. But Azerbaijan never gave up its claims; nor did the two countries reach any peace agreement over the enclave. Unlike in the 1990s, Azerbaijan now looks economically and politically stronger. In the 2020 conflict, it got military and diplomatic assistance from Turkey while Russia was reluctant to get dragged into the conflict on behalf of Armenia. Now, Russia's ability to project power in its neighbourhood appears to be further limited on account of Ukraine. On the other side, gas-rich Azerbaijan, which still has the backing of Turkey, is being courted by the EU for increased gas supplies. These regional developments seem to have emboldened Azerbaijan. But its ambition could be costly for everyone. Russia will find it difficult to retain its influence in Central Asia and Caucasus if it continues to ignore Armenia. At the same time, getting dragged into another battlefront would be challenging. A conflict in the Caucasus would further destabilise the global energy markets, hurting all economies, particularly energy-starved Europe. For Turkey, which is trying to balance between Russia and the West over Ukraine, another war in its neighbourhood would further complicate its foreign policy choices. The last thing the world needs now is another war. So, all sides should enforce a lasting ceasefire between Armenia and Azerbaijan and ensure calm in the troubled mountains of Nagorno-Karabakh.

ARBITRARY AND EXCLUSIONARY: ON EWS QUOTA

SOURCE: THE HINDU **#SOCIAL JUSTICE**

A Constitution Bench led by Chief Justice of India U.U. Lalit is now examining the validity of the 103rd Constitutional Amendment, which provides for 10% reservation to the economically weaker sections (EWS), excluding Other Backward Classes, Scheduled Castes and Scheduled Tribes who already have reservation in higher education institutions and government jobs. The Bench has finalised three issues for hearing — whether the amendment has breached the Constitution's basic structure by permitting the state to make special provisions; whether it does so in relation to admissions to private unaided institutions and, lastly, if the exclusion of OBC/SC/ST communities from the scope of the quota

tramples on the basic structure. These are valid questions and it could be argued that the legislation of the reservation in 2019 was done hastily without due diligence of the criteria adopted. For example, the setting of an annual family income of ₹8 lakh as a ceiling to determine if someone belongs to the EWS is clearly problematic. If available consumer expenditure surveys such as the NSSO report, 'Key Indicators of Household Consumer Expenditure, 2011-12', are relied on, a large chunk of the population will be eligible for reservations in the "below Rs. 8 lakh" EWS category and not just the truly deserving sections of the poor. A government-appointed committee submitted that this ceiling was reasonable, but it could not adequately explain how the income criterion was "more stringent" than the one for the OBC creamy layer. Also, the ₹8 lakh figure did not correspond to any data on the estimated number of EWS persons in the population with incomes related to it.

Petitioners have also argued that the net effect of the exclusion of Backward Classes and SC/ST aspirants from the EWS has been that they are now denied an opportunity to compete in the general category to the extent of 10%, in effect, limiting the quota to the "forward classes". This is a valid argument. Even if the Court agrees to maintain that reservations can be provided on economic basis — something that has been explicitly denied so far with only social and educational backwardness being mentioned in the Constitution and reiterated in several judgments — excluding people of certain communities from this benefit despite their belonging to the EWS renders the legislation discriminatory. In recent recruitment and entrance examinations such as the UPSC and JEE, marks cut-offs for admissions were lower for the EWS quota than that of the OBCs. In essence, if an income criterion for identifying the economically weaker sections has to be the basis, it must arrive at a clearly determined figure for the limit unlike the ₹8 lakh figure, and all sections of society, irrespective of caste, should be eligible to avail of reservation under this category.

ENGAGE WITH CAUTION

SOURCE: THE HINDU **# INDIA AND CHINA**

India and China on September 13 confirmed the disengagement of their troops from a fifth friction point in Eastern Ladakh along the LAC. With the latest withdrawal of troops from Patrolling Point (PP) 15 in the Gogra-Hot Springs area, buffer zones have now been established by the two sides in five locations, including in Galwan Valley, north and south of Pangong Lake, and at PP17A in Gogra. The arrangements in the four earlier established buffer zones have so far helped keep the peace over the past two years. No patrolling is to be undertaken by either side in the buffer zones, which have been established on territory claimed by both India and China. The latest disengagement came just three days before Prime Minister Narendra Modi and Chinese President Xi Jinping are to attend the Shanghai Cooperation Organisation (SCO) Summit in Uzbekistan.

Reflecting the current state of relations, the two leaders have not directly spoken in more than two-and-a-half-years, an extraordinary situation for the world's two most populous countries. Whether they meet at the SCO Summit — as of September 14, neither side had

confirmed or ruled out a meeting — or at the G20 in Indonesia later this year, India will need to proceed with caution as it inevitably resumes high-level engagement with China. While the buffer zones may serve as a temporary measure to prevent a recurrence of clashes, the reality is that this is an arrangement that has been forced on India. The Indian military, by holding the line and showing its capacity to match China's deployments, has been able to reverse China's multiple territorial ingresses of April 2020 in the five areas. That has, however, come at the cost of India's ability to access patrolling points that it was reaching previously, which, in the view of some military observers, might have been China's game-plan all along, given the favourable logistics and terrain on the Chinese side that enable faster deployments. Moreover, China has neither agreed to resolve stand-offs in Demchok and Depsang, suggesting they predated the current tensions, nor shown any intent to de-escalate, instead continuing to build forward infrastructure aimed at permanently housing a large number of troops closer to the LAC. Indeed, signs are that both sides are in for a prolonged period of uncertainty on the borders thanks to China's decision to mobilise tens of thousands of troops in April 2020, in contravention of past border agreements. Unless Beijing reverses its recent, and still unexplained, moves to militarise the LAC and in the process undo the carefully constructed arrangements that helped keep the peace for 40 years, India will have little incentive to consider a return to relations as they were prior to 2020. The latest disengagement, while certainly a welcome step, by no means implies an end to the crisis on the border.

THE SPIRIT OF 1971: ON INDIA-BANGLADESH RELATIONS

SOURCE: THE HINDU **#INDIA AND BANGLADESH**

Bangladesh Prime Minister Sheikh Hasina's ongoing state visit to India and meeting with Prime Minister Narendra Modi have resulted in positive outcomes and seven agreements, which include the conclusion of the first water sharing agreement in 26 years, the launch of free trade agreement talks, and infrastructure projects particularly in the railways sector. The water sharing agreement on the Kushiyara, which was preceded by the first Joint River Commission meeting in 12 years, is a particularly hopeful sign on resolving water management, and a very contentious issue, of 54 trans-boundary rivers. While there has been a smaller agreement on the withdrawal of 1.82 cusecs from the Feni in the interim period, the Kushiyara agreement is the first time the Centre has been able to bring on board Assam and other north-eastern States, for the agreement since the 1996 Ganga water treaty. However, the Teesta agreement, of 2011, held up by West Bengal, remains elusive, a point Ms. Hasina made several times. Clearly, the Teesta river agreement will require more efforts by the Modi government, and flexibility from the Mamata Banerjee-led State government, if the deal is to be sealed soon. The timeline grows more important for Ms. Hasina, who is due to hold elections at the end of next year, after three terms in office. Much of her focus was also on attracting investment by Indian industry, which now constitutes a small fraction of Bangladesh's FDI inflows. Ms. Hasina made particular mention of two dedicated Special Economic Zones for Indian companies, coming up at Mongla and Mirsarai.

Ms. Hasina's visit, which follows her previous state visit in 2017, and Mr. Modi's visit to Bangladesh in 2021, have set India-Bangladesh ties on a firmer footing, and on course for closer engagement in trade, connectivity and people-to-people ties. However, the positive trend in ties goes further back, to Ms. Hasina's advent to power in 2009, her unilateral moves to shut down terror training camps, and to hand over more than 20 wanted criminals and terror suspects to India. It is incumbent on New Delhi, which has benefited from such outcomes and the turnaround in relations with what used to be an inimical neighbour, to be equally sensitive to Dhaka's concerns, particularly when it comes to comments made by ruling party leaders on deporting Rohingya refugees, comparing undocumented migrants to "termites", the Citizenship (Amendment) Act, and more recent references to annexing Bangladesh for "Akhand Bharat". While cross-border sensitivities in South Asia often run high over such political rhetoric, it is necessary that New Delhi and Dhaka remain focused on their future cooperation, built on their past partnership, and what is referred to as the "Spirit of 1971".

UNCERTAIN FUTURE: ON CHILEANS REJECTING NEW CONSTITUTION

SOURCE: THE HINDU **#INTERNATIONAL AFFAIRS**

Chilean voters' decision to reject a new Constitution that would have replaced the 1980 charter written under the brutal military dictatorship of General Augusto Pinochet could deepen the country's political divisions and throw its future into uncertainty. The new document, supported by Chile's 36-year-old leftist President Gabriel Boric, would have transformed South America's most free market-friendly country into a state-driven, rights-rich welfare society. But the voters seem to have concluded that the draft went too far. With almost all votes counted, 62% of voters said 'No'. The Constitution drafting process itself was the result of months-long social and political struggles. Chile witnessed street protests in 2019 — triggered by a modest rise in subway fares — which prompted then President Sebastián Piñera to promise to rewrite the Constitution. Despite amendments, the Pinochet-era Constitution remains a pro-business, pro-market document, restricting state intervention in the economy. While Chile has seen fast development ever since its market reforms, it has also grown into one of the most unequal countries in the region, leading to disquiet. Mr. Boric rose from this chaos. In his election campaign in 2021, he had promised a new beginning. The referendum was his best opportunity to rewrite Chile's future. But Mr. Boric and his comrades seem to have lost the momentum.

The 170-page, 388-Article document promised to legalise abortion, provide universal health care, mandate gender parity in government, empower labour unions, and tighten regulations on mining. It also sought to define Chile as a "plurinational" state that would recognise its 11 Indigenous groups, who make up some 13% of the population — they could have their own governing structures and legal systems. This proposal became the rallying cry of the rejection camp which argued that the enhanced rights of the indigenous communities (including veto powers on big-ticket projects) and the limits the new Constitution would place on security

agencies would promote anarchy. Rising inflation and a militant uprising by the Mapuche community made it difficult for Mr. Boric to sell the proposals to voters. Chile is now back to square one. The old Constitution would remain in force until Chile's political class finds a way ahead. Mr. Boric has promised to repeat the Constitution process — elections to the constituent assembly and then preparation of another draft that is put to a referendum — which would take time. The conservatives and centrists, who ruled Chile since the fall of the dictatorship, would try to maximise their interests in the coming elections. But political struggles could only make the political crisis worse. As Chileans have demanded the old Constitution be repealed and replaced, it is for the politicians to provide them a document that they would support. For that, they should start with building consensus on the future of the country.

SOPS FOR VOTES: ON ELECTION PROMISES

SOURCE: THE HINDU #POLITY

After considering the formation of an expert body to examine the issues relating to political parties promising free goods to voters in their election manifestoes, the Supreme Court has stayed its hand and referred the issue to a three-judge Bench. Also referred for deeper consideration is the correctness of an earlier judgment in S. Subramaniam Balaji vs Tamil Nadu (2013), which ruled that making promises in a manifesto would not amount to a corrupt practice. The proceedings before a Bench, headed by the now retired Chief Justice of India N.V. Ramana, last week, offered crucial perspectives on the political economy of welfarism, socialism and pre-election promises of 'freebies'. Over the few hearings, the Bench moved from vague references to 'freebies' to making rational distinctions between welfare schemes and socio-economic concessions on the one hand, and poll-time announcements of material goods and items as incentives to vote. This clarity itself was lacking in the initial stages, as omnibus references to 'freebies' and raillery against political parties for their approach to welfare dominated the discourse. Those who have approached the Court against irrational promises found support from the Union government. Following Prime Minister Narendra Modi making public comments disapproving of the 'freebie' culture, the Government's stand is no surprise.

However, the Government was reluctant to examine the issue through discussions among political parties and favoured a judicially appointed panel. But, such a panel may not achieve much. Most parties oppose any fetters on their right to appeal to voters through means of their choice and, if elected, use their mandate to distribute finances and resources as they deem fit, subject to law and legislative approval. Therefore, it is no surprise that the Bench has included in its reference, questions on the scope of judicial intervention in the matter and whether any enforceable order can be passed. The two-judge Bench judgment in 2013 had examined the issue in the backdrop of the DMK coming to power in 2006 on a promise to distribute television sets to the poor and implementing it. It ruled that the Directive Principles of State Policy allow such schemes and that spending of public funds on them could not be questioned if it was based on appropriations passed by the legislature. It also concluded that poll promises by a party could not be termed a 'corrupt practice'. That Bench had also rejected the argument that giving

benefits to everyone, that is, the poor and the well-off, would violate the equality norm in Article 14. When it came to state largesse, it said, the rule against treating unequals as equals would not be applicable. Does this amount to implying that the Directive Principles can override fundamental rights, as the petitioners have argued? This too awaits examination.

MURDER IN THE SEWER

SOURCE: THE HINDU **#SOCIAL JUSTICE**

All human lives are precious, but, in practice, some are seen as less precious than others. Despite the efforts of courts and governments, law and enforcement have been unable to keep a certain category of workers out of harm's way: those who are engaged in sewage cleaning. While the job itself is dangerous, as several other human pursuits are, sewage cleaning involves working with human excreta, and cannot be seen without invoking the concept of dignity of labour. To allot the task of removing excreta and cleaning sewers to humans when machines are able to do the work is a gross violation of rights. It is in this context that Tamil Nadu's recent move to notify the rules of the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013, though belated, must be seen. While manual 'scavenging' is completely prohibited, the rules allow manual cleaning, in specific conditions where mechanical equipment cannot be deployed to fix the problem, or when it is absolutely necessary to have human intervention, after stating the valid reasons for allowing such a process to take place. But, more importantly, it specifies a long list of protective devices and gear that any person engaged to clean a sewer or a septic tank must be provided, including air line breathing apparatus, air line respirator, air purifier gas mask, a device for artificial respiration, mask and breathing apparatus. Besides this, chlorine masks, emergency medical oxygen resuscitator kit, gas monitor for gases, hydraulic devices, and first aid will have to be provided by the employer. The list is not limited to those devices mentioned. Regular maintenance of the equipment and devices has also been mandated by the rules. Naturally, all workers must be fitted out in the safety gear before they enter the sewer line.

The practice of manual cleaning of septic tanks and sewers has been, and will always be, as long as it exists, a serious concern in any country sworn to humane treatment of all citizens. While quibbling has dominated discussions about the actual number of deaths due to manual scavenging, government-acknowledged deaths from manual cleaning of sewers and septic tanks are shocking enough. A total of 971 people lost their lives while cleaning sewers or septic tanks since 1993, the year the law prohibiting employment of manual scavengers was enacted, according to the Social Justice and Empowerment Ministry. Tamil Nadu is among the top States in the list. Since the causes of deaths while cleaning sewers and septic tanks are predictable — noxious gases — not taking measures to prevent those deaths would be criminal. Proper implementation of the rules, and adequate monitoring are absolutely essential. Simultaneously, all efforts must be taken, within existing schemes, to provide compensation to the family members of those who have died, and to provide them a way out of the profession, if they so wish.

RAINBOW OF HOPE

SOURCE: THE HINDU #POLITY

Struggling with gender identity, and fighting against stigma, prejudice and discrimination, the LGBTQIA+ community, in Tamil Nadu at least, will not be derided by slurs or mocking half-names anymore. The T.N. government, on the orders of the Madras High Court, has come out with a glossary of terms to address people who are lesbian, gay, bisexual, transgender, queer, intersex, asexual or of any other orientation. The Department of Social Welfare and Women Empowerment notified the terms — paal pudhumaiyar for queer; maruviya paalinam for a transgender; idaippaal for intersex; paalina adaiyaalangaludan oththupogaathavar for a gender non-conforming person and so forth. Not everyone is happy; some groups feel the word for transgender should be the one in use, thirunar; others hope the nomenclature will not rid those who fall outside the generalisation of the benefits. For this diverse community, the road from isolation to belonging has been fraught with bias and violence, it was a wrong Justice N. Anand Venkatesh of the Madras High Court sought to amend in his June 7, 2021 verdict. While hearing, in April, the ordeal of a same-sex couple who sought police protection from combative parents, Justice Venkatesh admitted that he had to shed his own misconceptions before ruling on the case. The High Court came out with a slew of guidelines for the police, and social welfare ministries, both State and Centre, to ensure the safety of the community.

In February, the High Court pulled up the Union Ministry of Social Justice and Empowerment for dragging its feet on listing names of NGOs working for the community. In a June 2021 order, the High Court had acknowledged that social sanction is of paramount importance to lead a life of choice. In 2018, a Bench of the Supreme Court had overturned a 2013 ruling and decriminalised homosexuality. But the landmark judgment was only a first step. An individual wanting to live with dignity, no matter how she wants to be identified, still has many mountains to climb before enjoying liberty, autonomy and privacy guaranteed by Article 21. The state and society often mobilise traditional values to combat all sorts of phobias, and the movement for equal rights in T.N. should ensure children are not forced to go in for conversion therapy or thrown out of their homes for being different. Rights activists hope the glossary is fluid because the conversation around gender and sexuality is evolving. By creating inclusiveness in language for a marginalised community, the State has worked on the principle of suyamariyadhai or self-respect, the cornerstone of the Dravidian movement. Tamil Nadu has shown the way, but there is a long way to go before people forced to be in the shadows see a rainbow of hope in all spheres of life.

MULTIPLE CHOICE QUESTIONS
(50 MCQs)

Q1. Treaty of Sugauli established the land border between British India and

(a) Bhutan (b) Nepal
(c) Tibet d) Thailand

Q2. Which of the following is not a landlocked country?

(a) Laos (b) Cambodia
(c) Bhutan d) Mongolia

Q3. Consider the following statements:

1. Chindwin River is the tributary of Yangtse River.
2. Irrawaddy River empties into Gulf of Thailand.

Which of the above statement/s is/are correct?

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q4. Which of following statements is/are correct?

1. Union Territory of Ladakh is predominantly a tribal region in the country.
2. Apatani and Aka are the major tribes in Ladakh.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q5. Which of the following tiger reserves is not in Arunachal Pradesh?

(a) Namdhapa (b) Kamlang
(c) Pakke (d) Nameri

Q6. Match the following:

Country	Capital
A. Tajikistan	1. Bishkek
B. Turkmenistan	2. Dushanbe
C. Kyrgyzstan	3. Ashgabat
D. Kazakhstan	4. Astana

Codes:

(a) A-4, B-1, C-3, D-2
(b) A-3, B-1, C-4, D-2
(c) A-1, B-2, C-3, D-4
(d) A-2, B-3, C-1, D-4

Q7. Which of following statements is/are correct?

1. The Brahmani is a major seasonal river in the Odisha.
2. The Brahmani delta is the site of the Bhitarkanika wildlife sanctuary, famous for its estuarine crocodiles.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q8. Consider the following statements:

1. The Tumen River serves as part of the boundary between China, Mongolia and Russia.
2. The Yalu River is a river on the border between North Korea and China.

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Which of the above statement/s is/are correct?

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q9. Which of following statements is/are correct?

1. Chin Shwe Haw is a border trade town between Thailand and Myanmar.
2. Kyaukphyu port lies in the Rakhine state in Myanmar.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q10. Which of the following coast has got certain distinguishing features in the form of 'Kayals' (backwaters), which are used for fishing, inland navigation and are special attraction for tourists?

(a) Kathiawar coast (b) Konkan coast
(c) Goan coast (d) Malabar Coast

Q11. Which of the following national parks/wild life sanctuary is not in Odisha?

(a) Tikarpada (b) Debrigarh
(c) Betla (d) Chilika

Q12. Raimona and Dihing Patkai are the national parks in which of the following states?

(a) Assam (b) Arunachal Pradesh
(c) Meghalaya (d) Himachal Pradesh

Q13. Consider the following statements:

1. Palakkad Gap or Palghat Gap is a low mountain pass in the Western Ghats between Coimbatore in Tamil Nadu and Palakkad in Kerala.
2. Kumbharli Ghat Pass connects the coastal Ratnagiri District in Konkan region of Maharashtra with the Satara District in Desh region.

Select the correct answer using the code given below:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q14. Consider the following statements:

1. Granite is a common, coarse-grained, soft sedimentary rock.
2. Granite has been used as a building material since ancient times.

Select the correct answer using the code given below:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q15. Which of following statements is/are correct?

1. Conjugated linoleic acid (CLA) is a Transfat.
2. CLA is artificially produced.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q16. Which of following statements is/are correct?

1. Consuming trans fats increases High Density Cholesterol (HDL).
2. Trans fats come in both natural and artificial forms.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q17. Which of following statements is/are correct?

1. A genome is an organism's complete set of genetic instructions.
2. The genome includes both the genes (the coding regions) and the noncoding DNA, as well as mitochondrial DNA and chloroplast DNA.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q18. Which of following statements is/are correct?

1. Nano-optics is a part of nanotechnology that investigates the behavior of light on nanometer scales.
2. The term "nano-optics" usually refers to situations involving ultraviolet, visible, and near-infrared light.

Choose the correct code:

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q19. River Kaladan flows from

(a) Manipur to Myanmar
(b) Mizoram to Myanmar
(c) Nagaland to Myanmar
(d) Bangladesh to Myanmar

Q20. Which of following statements is/are correct?

1. The Kaladan River is called the Chhimtuipui River in India.
2. The Kaladan River forms the international border between India and Myanmar.

Choose the correct code:

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q21. Consider the following statements with respect to inflation:

1. Inflation is good for those who lend money than for those who borrow money.
2. Inflation is good for those who make the products than for those who buy it.

Which of the statements given above is/are correct?

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q22. Which of the following statements is/are correct?

1. Stagflation is characterised by slow economic growth and high unemployment.
2. Skewflation is price rise of a small group of commodities over a sustained period of time.
3. Hyperinflation is a large and accelerating inflation that takes place over a very short period of time.

Select the correct answer using the code given below:

(a) 2 only (b) 2 and 3 only
(c) 1 and 2 only (d) 1, 2 and 3

Q23. Which of the following is false about quantum technology?

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(a) It explains the nature of energy and matter.
(b) It is used for making computers much faster than super computers.
(c) The technology can be used for communications, chemistry, cryptography etc.
(d) Quantum field has been commercially exploited completely.

Q24. Which of the following seas are connected by Strait of Bab-el – Mandeb?
(a) Red Sea and Gulf of Aden
(b) Red Sea and Mediterranean Sea
(c) Gulf of Aden and Arabian Sea
(d) Persian Gulf and Arabian Sea

Q25. Apennines mountains range is located in –
(a) France (b) Spain
(c) Germany (d) Italy

Q26. Yemen borders which of the following countries?
(a) Saudi Arabia and Qatar
(b) Saudi Arabia and Bahrain
(c) Saudi Arabia and UAE
(d) Saudi Arabia and Oman

Q27. Which of the following countries does not lie on the Adriatic coast?
(a) Bulgaria (b) Albania
(c) Croatia (d) Montenegro

Q28. Which of the following countries does not lie on the Baltic coast?
(a) Estonia (b) Belarus
(c) Latvia (d) Lithuania

Q29. Which of the following countries does not lie on the Black Sea coast?
(a) Ukraine (b) Bulgaria
(c) Moldova (d) Romania

Q30. Paracel Islands lie in
(a) Philippines Sea (b) Yellow Sea
(c) Celebes Sea (d) South China Sea

Q31. Erbil and Tikrit are the cities in which of the following countries?
(a) Iraq (b) Syria
(c) Jordan (d) Iran

Q32. Aqaba is a port in which of the following countries?
(a) Syria (b) Iraq
(c) Jordan (d) Israel

Q33. Consider the following statements regarding the judicial powers of the Governor:
1. He makes appointments, postings and promotions of the District Judges in consultation with the State High Court.
2. He is consulted by the President while appointing the Judges of the concerned State High Court.

Which of the statements given above is/are correct?
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q34. Which of the following is/are the basic features of the Indian Constitution?
1. Federal character of the Constitution
2. Rule of law
3. Free and fair elections

4. Judicial Review

Select the correct answer from the codes given below:

(a) 1 and 2 only (b) 1, 2 and 3
(c) 2, 3 and 4 (d) All of the above

Q35. Aravalli mountain crosses which of the following states in India?

1. Punjab
2. Delhi
3. Haryana
4. Rajasthan
5. Gujarat

Choose the correct code:

(a) 2, 4 and 5 only (b) 2, 3 and 4 only
(c) 1, 3 and 5 only (d) 2, 3, 4 and 5

Q36. Root bridges are common in which of the following states?

(a) Meghalaya (b) Mizoram
(c) Tripura (d) Manipur

Q37. Which of following statements is/are correct?

1. Administrative Tribunals Act owes its origin to Article 323-A of the Constitution.
2. According to Article 323B, the appropriate Legislature may, by law, provide for the adjudication or trial by tribunals of any disputes, complaints, or offences.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q38. Which of following statements is/are correct?

1. For setting up the Legislative Council, a Bill has to be introduced in the Assembly and then a nod from the Governor is required.
2. The states can have a Legislative Council in addition to the Legislative Assembly through Article 169 of the Constitution.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q39. Which of following statements is/are correct?

1. A wholesale price index (WPI) measures and tracks the changes in the price of goods before they reach consumers.
2. Wholesale price indexes (WPIs) are reported monthly in order to show the average price changes of goods.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q40. Which of following statements is/are correct?

1. Sovereign Gold Bonds (SGBs) are substitutes for holding physical gold.
2. The SGBs are issued by State Bank of India on behalf of Government of India.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q41. Which of following statements is/are correct?

1. Asian Clearing Union (ACU) was established to secure regional co-operation as regards the settlement of eligible monetary transactions among the members of the Union.
2. The Reserve Bank of India is not a member bank of ACU.

Choose the correct code:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q42. Which of following statements is/are correct?

1. Mucormycosis rarely affects the sinuses or the lungs.
2. Mucormycetes molds live throughout the environment.

Choose the correct code:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q43. Dongria Kondhs tribal community resides in the state of

(a) Maharashtra (b) Odisha
(c) Meghalaya (d) Jharkhand

Q44. Which of following statements is/are correct?

1. Amundsen Sea lies in the Arctic.
2. Ross Sea lies in the Antarctic.

Choose the correct code:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q45. Which of following statements is/are correct?

1. Weddell Sea lies outside the Antarctic Circle.
2. France does not have a base in Antarctica.

Choose the correct code:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q46. Which of following statements is/are correct?

1. Whiteflies are closely related to aphids and mealybugs.
2. Whiteflies are harmless for horticulture production.

Choose the correct code:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q47. Which of following statements is/are correct?

1. Cyclone a system of winds rotating inwards to an area of low barometric pressure, with an anticlockwise (northern hemisphere) or clockwise (southern hemisphere) circulation.
2. Cyclones are more frequent in the Arabian Sea than the Bay of Bengal.

Choose the correct code:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q48. Which of the following statements is/are correct?

1. The DRDO was established in 1958 by amalgamating the Defence Science Organisation and some of the technical development establishments.
2. DRDO started its first major project in surface-to-air missiles (SAM) known as Project Indigo.

Select the correct answer using the code given below:
(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q49. Which of the following statements is/are correct?

1. The BRICS Leaders' Summit is convened every alternate year.

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2. The Chairmanship of the forum is rotated every alternate year among the members, in accordance with the acronym B-R-I-C-S.

Select the correct answer using the code given below:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q50. Which of the following statements is/are correct?

1. World Heritage Sites are designated by UNESCO for having cultural, historical, scientific or other form of significance.
2. The sites are judged to contain cultural and natural heritage around the world considered to be of outstanding value to humanity.

Select the correct answer using the code given below:

(a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

ANSWERS

1	2	3	4	5	6	7	8	9	10
b	a	d	a	d	d	c	b	b	d
11	12	13	14	15	16	17	18	19	20
c	a	c	b	a	b	c	c	b	c
21	22	23	24	25	26	27	28	29	30
d	d	d	a	d	d	a	b	c	d
31	32	33	34	35	36	37	38	39	40
a	c	c	d	d	a	c	c	c	a
41	42	43	44	45	46	47	48	49	50
a	b	b	b	d	a	a	c	d	c

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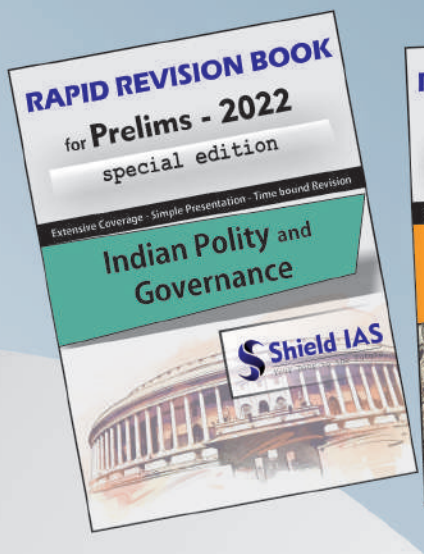
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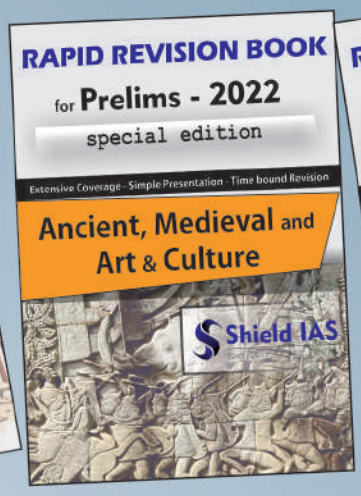
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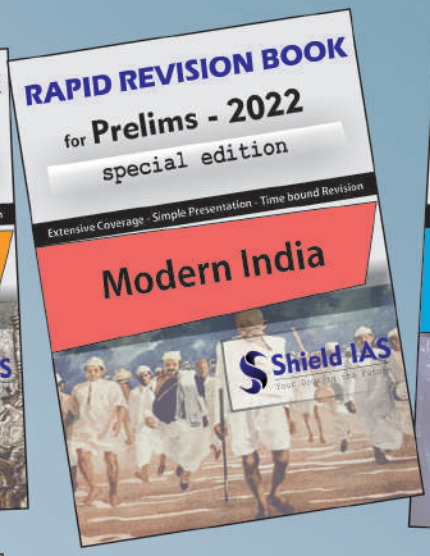
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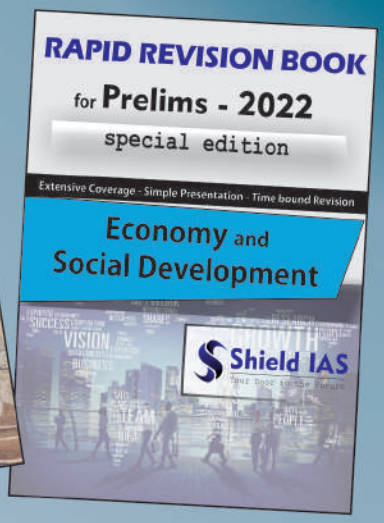
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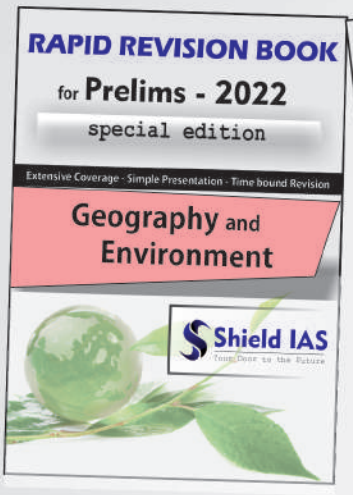


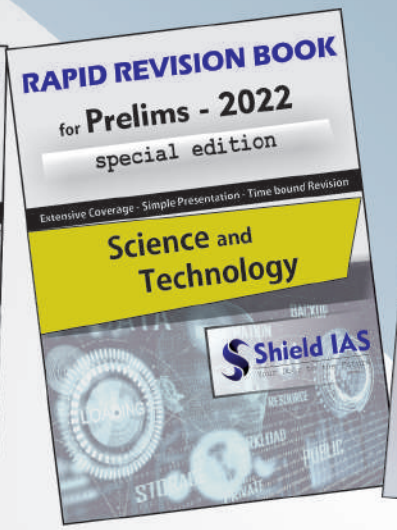




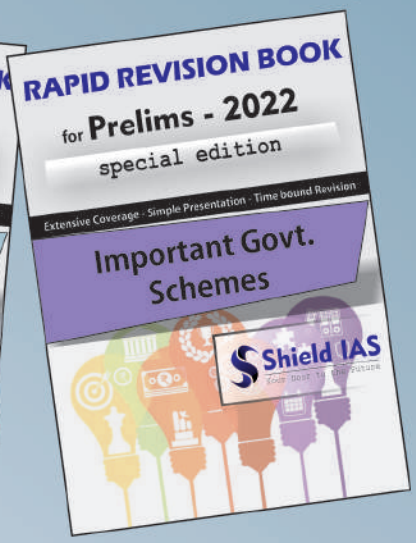












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