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TABLE OF CONTENTS

SOCIETY

SECURITY

DRDO TECHNOLOGY CLUSTERS

OTHER TOPICS

HISTORY AND CULTURE

ROCK CUT CAVE TEMPLES

OTHER TOPICS

MULTIPLE CHOICE QUESTIONS

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

BELT AND ROAD INITIATIVE (BRI)

o According to the **Asian Development Bank (ADB),** Asia faces an infrastructure funding gap of estimated USD 26 trillion through 2030. To address this gap, various regional and sub-regional initiatives aim to develop better transport connectivity within Asia.

o This includes, among others, the **Association of South East Asian Nation (ASEAN) Connectivity initiative**, the **Central Asia Regional Economic Cooperation (CAREC) Program**, the **Greater Mekong Sub-Region (GMS) Cooperation Program**, the **South Asia Sub-regional Economic Cooperation (SASEC) Program**, and the **Belt and Road Initiative (BRI).**

About BRI

o BRI is a **transcontinental long-term policy and investment program** which aims at infrastructure development and acceleration of the economic integration of countries along the route of the historic Silk Road.

o The Initiative was unveiled in **2013 by China`s president Xi Jinping and until 2016, was known as OBOR – One Belt One Road**.

o In 2015, the official outline for the Belt and Road Initiative was issued by the National

Development and Reform Commission (NDRC), the Ministry of Foreign Affairs (MOFA) and the Ministry of Commerce (MOFCOM) of the People`s Republic of China (PRC), with authorization of the State Council.

Aims of the Belt and Road Initiative
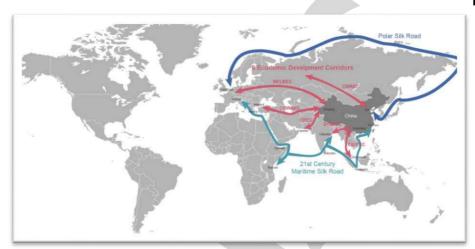
o BRI aims to promote the **connectivity of Asian, European and African continents** and their **adjacent seas**, establish and strengthen partnerships among the countries along the Belt and Road, set up all-dimensional, multi-tiered and composite connectivity networks, and realize diversified, independent, balanced and sustainable development in these countries.

o BRI is a global initiative but by its nature of building on the historic Silk Road puts a major focus on countries in Asia, Eastern Africa, Eastern Europe and the Middle East, a region mainly composed of emerging markets.

o According to the Belt and Road Portal, currently 71 countries are taking part in the Initiative, together representing more than a third of the world`s GDP and two thirds of the world`s population.

o The Belt and Road Initiative combines two initiatives

1. The (land based) Silk Road Economic Belt, comprising six development corridors

2. The 21st Century Maritime Silk Road

The Silk Road Economic Belt

The Silk Road Economic Belt is a long-term vision for the infrastructural development, connectivity and economic cooperation of Eurasia and is spanning six development "corridors", namely:

1. New Eurasian Land Bridge Economic Corridor (NELBEC)
2. China – Mongolia – Russia Economic Corridor (CMREC)
3. China – Central Asia – West Asia Economic Corridor (CCWAEC)
4. China – Indochina Peninsula Economic Corridor (CICPEC)
5. Bangladesh – China – India – Myanmar Economic Corridor (BCIMEC)
6. China – Pakistan Economic Corridor (CPEC)

The 21st Century Maritime Silk Road

o The 21st Century Maritime Silk Road connects China to Southeast Asia, Indonesia, India, the Arabian peninsula, Somalia, Egypt and Europe, encompassing the South China Sea, Strait of Malacca, Indian Ocean, Gulf of Bengal, Arabian Sea, Persian Gulf and the Red Sea.

Additionally the map shows the Polar Silk Road, referring to the **Northern Sea Route (NSR),** as officially mentioned in China`s Arctic policy.

The Polar Silk Road

o In 2018, People`s Republic of China published a white paper, titled **"China`s Arctic Policy",** vowing to actively participating in Arctic affairs. The document is a blueprint for China`s Arctic strategy and its ambition to develop a "Polar Silk Road" under the "Belt and Road Initiative".
o The land based Silk Road Economic Belt, the 21st Century Maritime Silk Road and the Polar Silk Road cannot be considered separately and need to be understood as complement to each other regarding the strategic integration of the regions under BRI.

Cooperation Priorities

o The official Belt and Road Initiative outline promotes the joint formulation of development plans and measures for advancing cross-national or regional cooperation between countries involved in BRI.
o This includes intergovernmental cooperation and multi-level macro policy exchange, communication mechanisms and policy support for the implementation of large-scale projects and the coordination in monetary policy.

According to the outline, the Belt and Road Initiative is based on five cooperation priorities:

1. Policy coordination (Promotion of intergovernmental cooperation, multi-level intergovernmental macro policy exchange and communication mechanism)
2. Facilities connectivity (Improvement of connectivity of infrastructure construction plans and technical standards systems)
3. Unimpeded trade (Reduction of investment and trade barriers, promotion of regional economic integration)
4. Financial integration (Coordination and cooperation in monetary policy, set-up of financing institutions)

5. People-to-people bonds (Cultural and academic exchange and dialogue, media cooperation)

Coordination of the Initiative

o The Belt and Road Initiative has no formal institutionalized body and its implementation includes multiple actors and stakeholders.

o The overseeing body of BRI is the "Office of the Leading Group on Promoting the Implementation of Belt and Road Initiatives" which is under the National Development and Reform Commission (NDRC). The leading group is in charge of guiding and coordinating work related to the initiative.

o An important role in the implementation of BRI plays China`s new State International Development Cooperation Agency (SIDCA).

o The agency was unveiled in 2018 and will be responsible for strategic guidelines and policies on foreign aid. SIDCA will be answerable to the State Council and according to State Council "will better serve the country's global strategy and to build the Belt and Road Initiative".

o Various Chinese governmental agencies are involved in the formulation and implementation of BRI, including the National Development and Reform Commission (NDRC), the Ministry of Commerce (MOFCOM), the Ministry of Foreign Affairs (MOFA) or the Ministry of Culture (MoC).

o To complement the BRI blueprint, almost all provinces in China such as Hebei or Henan have elaborated own BRI implementation plans.

What are the risks for countries involved?

o More recently, governments from Malaysia to Pakistan are starting to rethink the costs of these projects. Sri Lanka, where the government leased a port to a Chinese company for 99 years after struggling to make repayments, is a cautionary tale.

o Earlier this year, the Center for Global Development found eight more Belt and Road countries at serious risk of not being able to repay their loans.

o There are some extreme cases where China lends into very high risk environments, and it would seem that the motivation is something different. In these situations the leverage China has as lender is used for purposes unrelated to the original loan.

Why is the initiative sparking global concern?

o As Belt and Road expands in scope so do concerns it is a form of **economic imperialism** that gives China too much leverage over other countries, often those that are smaller and poorer.

o Some worry expanded Chinese commercial presence around the world will eventually lead to expanded military presence. Recently, China established its first overseas military base in Djibouti. Analysts say almost all the ports and other transport infrastructure being built can be dual-use for commercial and military purposes.

o "If it can carry goods, it can carry troops," says Jonathan Hillman, director of the Reconnecting Asia project at CSIS.

CHINA'S FIRST ROAD-RAIL TRANSPORT LINK TO INDIAN OCEAN

o China opens its first road-rail transport link to Indian Ocean named **China-Myanmar New Passage**. The route is "the first to link western China with the Indian Ocean.

o The transport corridor involves a **sea-road-rail link from the Myanmar border to the key commercial hub of Chengdu** in western China, that provides China a new road-rail transportation channel to the Indian Ocean.

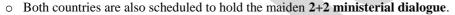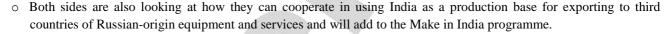o This passage **connects the logistics lines** of Singapore,

Trade Corridor

Myanmar and China.

o The railway line currently ends in **Lincang** on the Chinese side opposite the Myanmar border trade town of **Chin Shwe Haw.**

o Plans are underway to develop Chin Shwe Haw as a "border economic cooperation zone" under the Belt and Road Initiative.

CENTRAL ASIA

o India and Russia are looking at expanding cooperation in Central Asia and the possibility of supplementing bilateral exercises with trilateral and multilateral ones.

o India and Russia are expecting to conclude the bilateral logistics agreement, **Reciprocal Exchange of Logistics Agreement (RELOS),** and a **Navy to Navy cooperation Memorandum of Understanding (MoU).**

o The two sides are also looking at expanding cooperation in **Central Asia** and the possibility of supplementing bilateral exercises with trilateral and multilateral ones.

o There are specific defence and national security considerations that led India to conclude the contract for the supply of S-400 systems.

o India is scheduled to start receiving the S-400 systems in the next few months and one team of Indian Air Force personnel have been trained in Russia and a second team is undergoing training.

o Both countries are also scheduled to hold the maiden **2+2 ministerial dialogue**.

o Both sides are also looking at how they can cooperate in using India as a production base for exporting to third countries of Russian-origin equipment and services and will add to the Make in India programme.

On Afghanistan

o The fast changing developments in Afghanistan have of course taken everyone by surprise. It was imperative that India and Russia adapt their policies, whatever their policies were in the past.

o While a number of countries in the region and beyond are affected by the Afghan developments, India and Russia are in essence, affected even more due to the rise of Islamic fundamentalist and radical groups and the sanctuary that could be claimed by terror groups.

o This would impact both India and Russia and normal inter-state relations especially with respect to Central Asia, with additional threats emanating from drug trafficking, organized crime and the flow of refugees.

o Instability in Afghanistan has invariably spilled over into Central Asia in the form of terrorism, organised crime, radicalisation and refugees. Cross-border ethnic linkages and porous boundaries have only facilitated this spill-over.

INDIA AND RUSSIA RELATIONS

o Russia has been a longstanding and time-tested partner for India. The development of India-Russia relations has been a key pillar of India's foreign policy.

o India and the former Soviet Union had signed a **Treaty of Peace, Friendship and Cooperation in 1971**.

o Since the signing of the **"Declaration on the India-Russia Strategic Partnership"** in 2000, India-Russia ties have acquired a qualitatively new character with enhanced levels of cooperation in almost all areas of the bilateral relationship including political, security, defence, trade and economy, science and technology, and culture.

o There is regular high-level interaction between the two countries. Two Inter-Governmental Commissions - one on **Trade, Economic, Scientific, Technological and Cultural Cooperation (IRIGC-TEC),** co-chaired by EAM and the Russian DPM, and another on **Military-Technical Cooperation (IRIGC- MTC)** co-chaired by Russian and Indian Defence Ministers, meet annually.

o Russia has been a long-standing supporter of India's membership of the Nuclear Suppliers Group.

Defence and Security Cooperation

o India has longstanding and wide-ranging cooperation with Russia in the field of defence. India-Russia military-technical cooperation has evolved from a buyer-seller framework to one involving joint research, development and production of advanced defence technologies and systems.

o BrahMos Missile System as well as the licensed production in India of SU-30 aircraft and T-90 tanks are examples of such flagship cooperation.

o Both sides concluded agreements on the supply of S-400 air defence systems, construction of frigates and shareholders agreement on the formation of a joint venture to manufacture Ka-226T helicopters in India.

o The two countries also hold exchanges and training exercises between their armed forces annually.

o The first-ever Tri-Services exercise –**'INDRA 2017'** took place in Vladivostok in 2017.

Trade and economic relations

Intensifying the trade and economic relations has been identified as a priority area by the leaders on both sides as is clear by the revised targets of increasing **bilateral investment to the US $ 50 billion and bilateral trade to the US $ 30 billion by 2025.**

Nuclear Energy

o Russia is an important partner for India in the area of peaceful use of nuclear energy. It recognizes India as a country with advanced nuclear technology with an impeccable non-proliferation record.

o In 2014, DAE and Russia's Rosatom signed the Strategic Vision for strengthening cooperation in peaceful uses of atomic energy

Space Cooperation

India-Russia cooperation in the field of peaceful uses of outer space dates back to about four decades. Both sides cooperate in the peaceful uses of outer space, including satellite launches, GLONASS navigation systems, remote sensing and other societal applications of outer space.

Science & Technology

The Working Group on Science and Technology functioning under **IRIGC-TEC**, **the Integrated Long Term Programme (ILTP)** and the **Basic Science Cooperation Programme** are the three main institutional mechanisms for bilateral Science and Technology cooperation, while the Science Academies of the two countries promote inter-academy exchanges.

Cultural Cooperation

o There is a strong tradition of Indian studies in Russia. About 20 Russian Institutions, including leading universities and schools, regularly teach Hindi to about 1500 Russian students.

o Apart from Hindi, languages such as Tamil, Marathi, Gujarati, Bengali, Urdu, Sanskrit and Pali are taught in Russian Institutions.

o There is strong interest among Russian people in Indian dance, music, yoga and Ayurveda.

Challenges

o Russia has been useful to India in some ways, particularly in enhancing Indian military power. But Moscow's political compulsion to support China is a warning.

o India's dependence on Moscow for weapons is a vulnerability that the Indian decision-makers need to take more seriously.
o Russia is also helping China set up its missile early warning system, one of the most sensitive bits of technology for any nuclear power.
o The source of divergence between Indian and Russian interests lies in the continuing problems that Russia faces in its relations with the US.
o In the aftermath of the general economic slowdown and Russia's ongoing dispute with the West over the Ukraine issue, Russia has emphasized import substitution due to which, there has been a significant reduction in Russia's external trade.
o India has also been affected by this contraction in Russian exports and imports.
o The Afghanistan crisis would impact both India and Russia and normal inter-state relations especially with respect to Central Asia, with additional threats emanating from drug trafficking, organized crime and the flow of refugees.

Way ahead
o It is important for India and Russia to adapt to new realities, step up their cooperation and insulate and protect their national interests from the instability that is expected to radiate out of Afghanistan for some time to come.
o India and Russia will need to work together even more than before. This is vital for protecting India's continental security interests
o Both the countries should pursue their bilateral relationship, which is of high value for both in this more complex and international environment
o Both have worked together to overcome the difficulties of the Covid pandemic and there are chances for bilateral relations to emerge even stronger as a result of planned meetings.

UNITED NATION SECURITY COUNCIL
o The Security Council, the United Nations' principal crisis-management body, is empowered to impose binding obligations on the 193 UN member states to maintain peace.
o The council's five permanent and ten elected members meet regularly to assess threats to international security, including civil wars, natural disasters, arms proliferation, and terrorism.
o Structurally, the council remains largely unchanged since its founding in 1946, stirring debate among members about the need for reforms.
o In recent years, members' competing interests have often stymied the council's ability to respond to major conflicts and crises, such as Syria's civil war, Russia's annexation of Crimea, and the coronavirus pandemic.

What is the Security Council's structure?
o The Security Council has five permanent members—China, France, Russia, the United Kingdom, and the United States—collectively known as the P5. Any one of them can veto a resolution.
o The council's **ten elected members, which serve two-year, nonconsecutive terms, are not afforded veto power**.
o The P5's privileged status has its roots in the United Nations' founding in the aftermath of World War II. The United States and Soviet Union were the outright victors of the war, and, along with the United Kingdom, they shaped the postwar political order.
o As their plans for what would become the United Nations took shape, U.S. President Franklin D. Roosevelt insisted on the inclusion of the Republic of China (Taiwan), envisioning international security presided over by "four global policemen."
o British Prime Minister Winston Churchill saw in France a European buffer against potential German or Soviet aggression and so sponsored its bid for restored great-power status.

The members of the **P5 have exercised the veto power to varying degrees**.

o Counting the years when the Soviet Union held its seat, Russia has been the most frequent user of the veto, blocking more than one hundred resolutions since the council's founding.

o The United States is second, last using the veto in 2020 to reject a resolution that called for the prosecution, rehabilitation, and reintegration of those engaged in terrorism-related activities. The country objected to the resolution's not calling for the repatriation of fighters from the self-proclaimed Islamic State and their family members.

o China's use of the veto has risen in recent years.

o In contrast, France and the United Kingdom have not exercised their veto power since 1989 and have advocated for other P5 members to use it less.

o The council's presidency rotates on a monthly basis, ensuring some agenda-setting influence for its ten nonpermanent members, which are elected by a two-thirds vote of the UN General Assembly.

o The main criterion for eligibility is contribution **"to the maintenance of international peace and security,"** often defined by financial or troop contributions to peacekeeping operations or leadership on matters of regional security likely to appear before the council.

o A secondary consideration, **"equitable geographical distribution,"** gave rise to the **regional groups used since 1965** in elections:

- the African Group has three seats;
- the Asia-Pacific Group, two;
- the Eastern European Group, one;
- the Latin American and Caribbean Group, two; and
- the Western European and Others Groups (WEOG), two.

o Subsidiary organs that support the council's mission include ad hoc committees on sanctions, counterterrorism, and nuclear, biological, and chemical weapons, as well as the international criminal tribunals for Rwanda and the former Yugoslavia.

o Within the UN Secretariat, the Department of Peacekeeping Operations and the Department of Operational Support manage field operations. The **Peacebuilding Commission, established in 2005** as a repository of institutional memory and best practices, serves an advisory role.

Functions and Powers

Under the United Nations Charter, the functions and powers of the Security Council are:

o to maintain international peace and security in accordance with the principles and purposes of the United Nations;

o to investigate any dispute or situation which might lead to international friction;

o to recommend methods of adjusting such disputes or the terms of settlement;

o to formulate plans for the establishment of a system to regulate armaments;

o to determine the existence of a threat to the peace or act of aggression and to recommend what action should be taken;

o to call on Members to apply economic sanctions and other measures not involving the use of force to prevent or stop aggression;

o to take military action against an aggressor;

o to recommend the admission of new Members;

o to exercise the trusteeship functions of the United Nations in "strategic areas";

o to recommend to the General Assembly the appointment of the Secretary-General and, together with the Assembly, to elect the Judges of the International Court of Justice.

Current permanent and non-permanent members

The Council is composed of 15 Members:

o Five permanent members: China, France, Russian Federation, the United Kingdom, and the United States, and ten non-permanent members elected for two-year terms by the General Assembly (with end of term year):

o Estonia (2021); India (2022); Ireland (2022); Kenya (2022); Mexico (2022); Niger (2021); Norway (2022); Saint Vincent and the Grenadines (2021); Tunisia (2021); Viet Nam (2021)

What are the prospects for reform?

o The odds of substantial reform are seen as remote because amending the UN Charter requires an affirmative vote and domestic **ratification by two-thirds of UN member states**. This includes all of the Security Council's permanent members, which are unlikely to take measures that would curb their own influence.

o While there is broad agreement among UN members that the Security Council's makeup is outdated, each of the various proposals for reform inevitably leaves some aspirants alienated.

o Some proposals call for **additional permanent members and others for a new class of elected seats** that have the possibility of renewal. In the absence of charter reform, smaller states have advocated for procedural changes, including greater transparency and closer consultations with troop-contributing countries.

o Still, in early 2021, UN General Assembly President Volkan Bozkir said that reforming the Security Council should be an important objective. The implementation of the Council's decisions, and it's very legitimacy, could be enhanced if the Council was reformed to be more representative, effective, efficient, accountable and transparent.

UNITED NATIONS GENERAL ASSEMBLY

o The **76th session** of the United Nations General Assembly (UNGA 76) met in September, with the High-level General Debate taking place under the theme **"Building resilience through hope - to recover from COVID-19, rebuild sustainably, respond to the needs of the planet, respect the rights of people, and revitalize the United Nations".**

o **Abdulla Shahid** of the Maldives, was sworn in as the new President.

Workings of the General Assembly

o The UN General Assembly (UNGA) is the **main policy-making organ** of the Organization.

o Comprising all Member States, it provides a unique forum for multilateral discussion of the full spectrum of international issues covered by the Charter of the United Nations.

o Each of the 193 Member States of the United Nations has an **equal vote**.

The UNGA also makes key decisions for the UN, including:

o appointing the Secretary-General on the recommendation of the Security Council

o electing the non-permanent members of the Security Council

o approving the UN budget

o The Assembly **meets in regular sessions from September to December each year**, and thereafter as required. It discusses specific issues through dedicated agenda items or sub-items, which lead to the adoption of resolutions.

o In the wake of the COVID-19 pandemic, the UN General Assembly has been carrying out its work since 2020 via novel means to guarantee business continuity and mitigate the spread of the disease. Specific examples include the use of virtual platforms to conduct meetings and the adoption of e-voting through procedure for decision-making when an in-person meeting is not possible.

o The pandemic is not the only issue the world faces. Racism, intolerance, inequality, climate change, poverty, hunger, armed conflict, and other ills remain global challenges. These challenges call for global action, and the General Assembly is a critical opportunity for all to come together and chart a course for the future.

SAARC

o A meeting of foreign ministers from the South Asian Association for Regional Cooperation (SAARC) countries, which was set to be held in New York has been cancelled.

o The member states were unable to agree upon the participation of Afghanistan, with Pakistan and India in particular at loggerheads over the issue.

o After Pakistan objected to the participation of any official from the previous Ghani administration, SAARC members reportedly agreed to keep an "empty chair" as a symbolic representation of Afghanistan. However, Islamabad later insisted that the Taliban be allowed to send its representative to the summit, a notion that all of the other member states rejected.

o After no consensus could be formed, Nepal, the 'host' of the summit, officially cancelled the meeting.

Why did countries object?

o The Taliban has not been recognised as the official government of Afghanistan by any SAARC countries barring Pakistan. Several top Taliban leaders are blacklisted by the US and/or designated as international terrorists. Senior leaders who are not blacklisted are known for supporting terrorist activities or affiliating with terrorist organisations.

o While India and other countries have met with Taliban spokespeople, allowing them to represent Afghanistan in SAARC would legitimise the group and serve as a formal recognition of their right to govern.

o Apart from Pakistan, which has close ties to the Taliban, particularly its violent subgroup, the Haqqani Network, none of the other SAARC members recognise the Taliban and some, like India, have openly questioned their legitimacy.

Formation of SAARC

o SAARC is a regional inter-governmental organisation of South Asian countries namely, India, Bangladesh, Bhutan, the Maldives, Nepal, Pakistan and Sri Lanka.

o Afghanistan joined the bloc in 2007, under its then President Hamid Karzai.

o SAARC also includes nine formally recognised observers including the European Union, the US, Iran and China.

o After the USSR invaded Afghanistan in 1979, the security situation in South Asia rapidly deteriorated. In response, the foreign ministers of the initial seven members met in Colombo in 1981. At the meeting, Bangladesh proposed forming a regional association that would meet to discuss matters such as security and trade. While most of the countries present were in favour of the proposal, India and Pakistan were sceptical.

o Eventually, both countries relented and in **1983 in Dhaka, joined the other five nations in signing the Declaration on South Asian Association Regional Cooperation** and with it, signalling the official formation of SAARC.

o At the Dhaka meeting, the member countries also launched the Integrated Program of Action which outlined the five areas of cooperation between SAARC countries, namely, **agriculture; rural development; telecommunications; meteorology; and health and population activities**.

o According to the SAARC charter, the goal of the organisation was to contribute to **"mutual trust, understanding and appreciation of one another's problems"**.

o In 2005, Afghanistan formally applied for membership to SAARC, a move that spurred debate due to the nascency of Afghan democracy and the perception of the country as a Central Asian nation. The SAARC nations, pressured by Pakistan, agreed to admit Afghanistan into the bloc with the stipulation that it first hold non-partisan general elections, which it did in late 2005. In 2007, Afghanistan became the eighth member state of SAARC.

What has SAARC done so far

o Despite its lofty ambitions, SAARC has not become a regional association in the mould of the European Union or the African Union. Its member states are plagued by internal divisions, most notably the conflict between India and Pakistan. This in turn has hampered its ability to form comprehensive trade agreements or to meaningfully collaborate on areas such as security, energy and infrastructure.

o The 18th and last SAARC summit was held in 2014 with Pakistan scheduled to host the 19th summit in 2016. However, following Islamabad's alleged involvement in the Uri terror attack in Jammu and Kashmir, India refused to participate. Soon after, Bangladesh, Afghanistan, Bhutan, Maldives and Sri Lanka also pulled out of the summit, citing fears of regional insecurity caused by Pakistan and a lack of a conducive environment for the talks. Nepal was unable to withdraw from the summit as the chairperson of SAARC was from Nepal.

o Despite these setbacks, SAARC has achieved a modicum of success. It has provided a platform for representatives from member countries to meet and discuss important issues, something that may have been challenging through bilateral discussions. India and Pakistan for example would struggle to publicly justify a meeting when tensions

o between the two are particularly high, but representatives from both countries could come together under the banner of SAARC.

o The bloc has also made some headway in signing agreements related to climate change, food security and combatting the Covid-19 crisis. It has the potential to do far more but that is contingent upon cooperation on key issues between member states.

o With Pakistan headfast in its support for the Taliban and the rest of SAARC weary to acknowledge the group, any future summit is unlikely until the issue has been resolved.

INDIAN OCEAN

o The Indian Ocean is a vast theater, stretching from the **Strait of Malacca and western coast of Australia in the East to the Mozambique Channel in the West**.

o It encompasses the **Persian Gulf and the Arabian Sea** in the North, all the way down to the southern Indian Ocean.

Indian Ocean Initiative

o Along the coasts of this huge geographic expanse are countries that are home to some 2.7 billion people.

o The Indian Ocean's key subregions are **South Asia, the Middle East, the eastern coast of Africa, and the islands dotting the ocean from Sri Lanka in the East to the Comoros Archipelago in the West**.

o The region's size and diversity explains its **geo-economic importance**. Its regional forum, the Indian Ocean Rim Association, includes countries as politically and socially different as Australia, Indonesia, Iran, and South Africa, leading to striking new power dynamics.

o From resource-rich Africa and the energy-dense Middle East to South Asia's labour markets and manufacturing industries, the stability of the Indian Ocean is crucial to the global economy.

Why are countries vying for control over the Indian ocean?

o While it may be difficult today for one nation to control the entire expanse of the Indian Ocean the way the British, French, or Portuguese empires did during the colonial period, the strategic significance of the Indian Ocean remains the same.

o In fact, the advent of the **Indo-Pacific**—the new geopolitical framework that includes both the Indian and Pacific Oceans—has pushed the Indian Ocean back into the spotlight after a period with no serious great power competition in the region, following the end of the Cold War.

o The importance of trade and the sheer scope of its many subregions make the Indian Ocean critical in terms of **military and strategic engagement**.

o It is a **vital trading hub**, connecting the Middle East to Southeast and East Asia, as well as Europe and the Americas. Any disruption along its trading routes will impact the entire globe's energy security, let alone that of significant economies like China, Japan, and South Korea, which depend on energy imported primarily via the Malacca strait.

o At the heart of the geopolitical struggle in the Indian Ocean is the ability to sustain a military presence near the key choke points connecting its trade routes. Such a presence gives countries the power to protect and disrupt these valuable maritime channels—known as **Sea Lines of Communications (SLOC) protection** and SLOC interdiction in naval terms—during times of peace and war.

Which parts of the Indian Ocean are most contested?

Of the world's seven key choke points for oil transportation, three are in the Indian Ocean. These are bottlenecks that connect two important waterways, creating a shipping traffic jam. If these narrow stretches of water are blocked or unavailable, the alternative route is usually expensive, long, or in some cases, impossible for large ships and oil tankers to navigate.

o The **first choke point is the Malacca strait** between Malaysia, Singapore and the Indonesian island of Sumatra, which connects Southeast Asia and the western Pacific to the Indian Ocean.

o The **second is the Strait of Hormuz**, which is the only sea passage connecting the Persian Gulf to the wider Indian Ocean.

o The **third is the Bab-el-Mandeb strait**, which flows between Eritrea and Djibouti in the Horn of Africa and Yemen on the Arabian Peninsula, connecting the Red Sea to the Indian Ocean.

o Finally, there is also the **Mozambique Channel** between Madagascar and Mozambique, which is a key trading route for goods transiting the Cape of Good Hope to the Middle East and Asia.

o If a navy has access to and influence over these choke points, it can oversee all entry and exit points into the region. Moreover, presence near key choke points helps a nation's antisubmarine warfare and surveillance missions, which create maritime domain awareness.

o Surveillance and reconnaissance missions around choke points are particularly important for awareness of an adversary's submarine movements, because detecting subsurface vessels in the wider open sea is much more difficult and expensive.

o A nation that boasts a strong security profile in the Indian Ocean will be an instrumental partner for the many littoral countries along its coastline, spanning Africa, the Middle East, and South Asia.

Current status

o After the Second World War, as newly independent countries across the region withdrew to focus on immediate economic and security issues within their borders, the ocean was split into the continental subregions of Africa, the Middle East, and South Asia.

o The island nations also grouped themselves into these subregions, dividing the Indian Ocean primarily into the eastern Indian Ocean and the western Indian Ocean.

o The United States was a key player in the region through the Cold War with the Soviet Union. But later, U.S. reduced its engagements. By the early twenty-first century, the U.S. presence in the Indian Ocean was mostly limited to supporting its missions in Afghanistan and the Middle East.

o Partnerships in the Indian Ocean are also complex in the new security environment. For example, the **United States** continues to maintain a military base on the island of **Diego Garcia in the Chagos Archipelago**. But the sovereignty of the island—an overseas territory of the UK that London leased from Port Louis during its independence—is disputed by Mauritius, with the UN General Assembly adopting a resolution in favour of Mauritius in 2019.

o Although India is a key U.S. partner in the Indian Ocean today, India politically throws its support behind Mauritius on principles of decolonization and nonalignment. Larger countries' bilateral dynamics with the littorals and islands of the region carry implications for the wider ocean.

o With the United States preoccupied with its commitments in the Pacific, Afghanistan and the Middle East, France, and India took on the role of key security providers in the region.

o **France** is a major player in the **western Indian Ocean,** while **India** has the primary role in the **eastern Indian Ocean.** Through its overseas region of Reunion, France is a member of the **Indian Ocean Commission**, the only forum that brings together the French-speaking islands of the region. However, the Indian Navy claims the entire Indian Ocean as its area of responsibility and prides itself on being the first to respond to natural and humanitarian disasters there.

o While France and India are the key regional players on security, the UK also plays an important role.

o Other countries are involved in specific issues, especially maritime piracy: China, India, Japan, and the United States and its NATO allies, as well as the UN, all have ongoing missions to combat piracy off the coast of Somalia. Their presence addresses a shared international maritime concern and is usually restricted to the affected region off the Horn of Africa.

o But over the years, this engagement has provided new players such as China with the opportunity to interact with the Indian Ocean's littoral countries and islands.

How are the power dynamics changing?

o Building on its antipiracy missions, China has emerged as a strong partner for the islands and littoral countries of the Indian Ocean. The **Maritime Silk Road, under Beijing's Belt and Road Initiative**, has provided an added platform to collaborate on economic and military issues.

o Beijing set up its first overseas military facility in Djibouti on the Indian Ocean coast. While France, Japan, and the United States already have facilities in Djibouti, the Chinese base cements its position as a new player in the region.

o Combined with Beijing's larger maritime ambitions, China's presence in the region has become a source of shared anxiety for France, India, the United States, and others.

o For example, if India is the primary partner for smaller nations such as Sri Lanka and the Maldives and to an extent Mauritius and Seychelles, then France is the key partner for French-speaking Madagascar and Comoros. But Beijing stands to compete with India and France simultaneously across the six islands in the region. Of all the key powers in the Indian Ocean, China is the only one with a diplomatic mission across all six island nations—not France, India, the UK, or the United States.

o The vacuum left by limited U.S. engagement over the last three to four decades combined with strategic inertia from New Delhi and Paris has been filled by new competition between India and China.

o But it is not just China that is challenging traditional players in the region. In 2020, **Russia announced the establishment of a new naval base in Sudan** for a period of twenty-five years. This provides Moscow with strategic access to the Red Sea and by extension to Bab-el-Mandeb, one of the key choke points in the Indian Ocean.

o **Saudi Arabia and Turkey** are also strengthening their economic and diplomatic ties with the islands of the Indian Ocean, which could lead to new power dynamics.

Impact of climate change and great powers' competition

o Non-traditional security issues such as climate change, illegal fishing, drug smuggling, and human trafficking will come to play a bigger role in the geopolitics of the Indian Ocean.

o If the competition is over sustaining presence and missions in strategically important parts of the ocean—such as the choke points mentioned earlier—the island nations and African littorals will come to assume a central role. And these smaller nations' primary security challenges will be the non-traditional issues described above.

o As such, the region's traditional players like France, India, and the United States along with its partners like Australia, Japan, and the UK, will have to think through their smaller partners' non-traditional security challenges if they want to address their own national security interests in the region.

o In essence, if the big powers vying for influence in the Indian Ocean want the small island nations as allies, they must pay attention to these nations' security concerns. While these issues may be considered soft or secondary, they are deeply relevant to the island nations. These issues also carry strategic implications, such as for fishing vessels and scientific missions used for surveillance and reconnaissance purposes. Hence, they will significantly impact the region's ongoing geopolitical competition.

BRICS

- The **13th BRICS summit held virtually**, called for an **"inclusive intra-Afghan dialogue"** for stability in Afghanistan.
- The virtual summit, chaired by Prime Minister of India, was dominated by the developments in Afghanistan, and adopted the BRICS Counter Terrorism Action Plan.
- The discussion on Afghanistan at the event attended by the leaders of India, Russia, China, Brazil and South Africa was held in the backdrop of the Taliban announcing an interim government in Kabul.
- The BRICS leaders called for **"settling the situation by peaceful means"** and condemned the terrorist attacks at the Hamid Karzai International Airport which killed at least 100 persons including several American military personnel.
- The document, titled the **'New Delhi Declaration'**, also called for addressing the humanitarian situation in Afghanistan and urged the need to uphold rights of women, children and minorities.
- The meeting gave an opportunity to the BRICS countries to discuss the situation in Afghanistan especially as two of the five members of the organisation — **Russia and China — continue to have a diplomatic presence in Kabul** where a Taliban interim government has taken formal charge.
- BRICS countries are evidently divided on the issue of engagement with the Taliban with Russia and China adopting a proactive policy on the issue.
- China extended an emergency aid of $31 million to Afghanistan to help the Taliban run the government.

Other discussions
- The summit emphasised the importance of the principle of "non-interference" in international affairs and said disputes and conflicts should be resolved by peaceful means.
- The summit meeting was also addressed by the South African President Cyril Ramaphosa, Chinese President Xi Jinping, Brazil's President Jair Bolsonaro, and President Vladimir Putin of Russia, who remarked that Afghanistan has a new crisis.
- Apart from Afghanistan, the BRICS leaders also took up the conflicts in Myanmar, Syria, the tension in the Korean peninsula, Israel-Palestine violence and other territorial disputes.
- The summit also discussed the COVID-19 pandemic and the strategy to strengthen counter-pandemic cooperation and multilateral reform. The New Delhi Declaration called against playing politics with the pandemic and the COVID-19 virus and urged for a global effort to eradicate the virus.

BRICS
- BRICS is an acronym for Brazil, Russia, India, China, and South Africa.
- **Goldman Sachs economist Jim O'Neill** coined the term BRIC (without South Africa) in 2001, claiming that by 2050 the four BRIC economies would come to dominate the global economy by 2050. South Africa was added to the list in 2010.
- Brazil, Russia, India, China, and South Africa ranked among the world's fastest-growing emerging market economies for years, thanks to low labour costs, favourable demographics and abundant natural resources at a time of a global commodities boom.
- It's important to note that the Goldman Sachs thesis wasn't that these countries would become a political alliance (like the EU) or even a formal trading association. Instead, Goldman said they have the potential to form a powerful economic bloc, even acknowledging that its forecasts were optimistic and dependent on significant policy assumptions.
- The leaders of BRIC (Brazil, Russia, India, and China) countries met for the first time in **St. Petersburg, Russia,** on the margins of G8 Outreach Summit in **2006.**
- Shortly afterwards, in September 2006, the group was formalised as BRIC during the 1st BRIC Foreign Ministers' Meeting, which met on the sidelines of the General Debate of the UN Assembly in New York City.
- After a series of high level meetings, the **1st BRIC summit was held in Yekaterinburg, Russia in 2009**.

o BRIC group was renamed as BRICS (Brazil, Russia, India, China, South Africa) after South Africa was accepted as a full member at the BRIC Foreign Ministers' meeting in **New York in 2010**. Accordingly, South Africa attended the 3rd BRICS Summit in Sanya, China in2011.

o BRICS is an important grouping bringing together the major emerging economies from the world, comprising 41% of the world population, having 24% of the world GDP and over 16% share in the world trade. BRICS countries have been the main engines of global economic growth over the years.

o Over a period of time, BRICS countries have come together to deliberate on important issues under the three pillars of political and security, economic and financial and cultural and people to people exchanges.

SHANGHAI COOPERATION ORGANISATION (SCO)

o The Shanghai Cooperation Organization (SCO) is an intergovernmental organization founded in Shanghai in 2001.

o The SCO **currently comprises eight Member States** (China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan and Uzbekistan), **four Observer States** interested in acceding to full membership (Afghanistan, Belarus, Iran, and Mongolia) and **six "Dialogue Partners"** (Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey).

o Since its inception in 2001, the SCO has **mainly focused on regional security issues, its fight against regional terrorism, ethnic separatism and religious extremism**. To date, the SCO's priorities also **include regional development.**

o The SCO has been an **observer in the UN General Assembly since 2005**.

o In 2010, the UN and SCO Secretariats signed a Joint Declaration on Cooperation.

o SCO Secretariat has also established partnerships with the UN Educational, Scientific and Cultural Organization (UNESCO), the World Tourism Organization (UNWTO), and the International Organization for Migration (IOM), in addition to its ongoing cooperation with the UN Office on Drugs and Crime (UNODC), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the UN Office on Counter-Terrorism (UNCT).

o The Department of Political and Peacebuilding Affairs (DPPA), as well as UNRCCA (United Nations Centre for Preventive Diplomacy for Central Asia) maintain regular contacts with the SCO officials. The cooperation activities focus on security developments in the region and key issues related to counterterrorism and prevention of violent extremism.

o The Shanghai Cooperation Organization (SCO) was established as a **multilateral association to ensure security and maintain stability across the vast Eurasian region, joi**n forces to counteract emerging challenges and threats, and enhance trade, as well as cultural and humanitarian cooperation.

o By reinforcing mutually beneficial cooperation, preventing confrontation and conflict, and maintaining equal and indivisible security, SCO aims to build a just **polycentric world order**, in full conformity with the norms of international law and principles of mutual respect, which meets the interests of each and every State, taking into account their mutual needs and aspirations. As a multinational and multicultural organization, SCO strives to stave off the clash of civilizations across its respective regions.

o Adhering to the **principles of openness**, SCO does not intend to form any alliances or direct its actions against any sovereign entity. It actively and consistently pursues dialogue, exchanges and cooperation, and stands for strict observance of the purposes and principles inscribed in the Charter of the United Nations, such as equality and sovereignty of States, inadmissibility of intervention in their domestic affairs, respect for territorial integrity, inviolability of borders, non-aggression, peaceful settlement of disputes, non-use of force or threat of force, as well as other universally recognized norms of international law, aimed at maintaining peace and security, establishing partnerships between States, protecting national sovereignty and respecting the right to determine one's own destiny and path forward for political, socioeconomic and cultural development.

o The **entire structure of the organization is designed to generate multilateral partnerships** to assist sovereign members in coordinating strategies and approaches to solving pressing international issues and meeting regional needs. It also provides an opportunity for member States to concentrate their efforts on common goals in accordance with the principles of voluntary cooperation and equitable distribution of responsibilities.

Approaches and Practical Steps towards Security and Stability

o Adhering to the strict observance of universally recognized norms of international law, as well as to the relentless pursuit of the purposes and principles of the United Nations Charter, SCO is unshaken in its belief that as a means of conflict resolution diplomacy is unmatched.

o In this regard, SCO continues its support for an even more prominent coordinating role for the United Nations in international relations, with an emphasis upon the further development of close cooperation with the world Organization.

o SCO will continue to make coordinated efforts to combat common challenges and threats to security, broaden dialogue and reinforce collaboration in ensuring comprehensive security by countering terrorism, cyberterrorism, separatism, extremism, transnational organized crime, and illicit drug trafficking, as well as reinforcing international information security and emergency response.

o In this regard, SCO intends to further develop its core permanent body—the **Regional Anti-Terrorist Structure (RATS).**

o The SCO common response to the steadily growing threat of extremism is the **SCO Convention on Countering Extremism, adopted at the summit in Astana**. This document will strengthen the international legal framework for countering emerging challenges and threats along with the **Shanghai Convention on Combating Terrorism, Separatism and Extremism**, the **Convention of the Shanghai Cooperation Organization against Terrorism**, and the **2016-2018 SCO Member States Programme on Cooperation in Combating Terrorism, Separatism and Extremism**, as well as core United Nations instruments, such as the United Nations Global Counter-Terrorism Strategy and relevant United Nations Security Council resolutions.

o The SCO Convention on Countering Extremism is aimed at advancing security, increasing effective cooperation between authorities and improving the legal framework in this sphere.

What is SCO?
Shanghai Cooperation Organization

Founded in **2001**

It aims to...
- Resolve border issues
- Fight terrorism
- Bolster regional security
- Counter American influence in Central Asia

SCO Members
1. China
2. Kazakhstan
3. Kyrgyzstan
4. Russia
5. Tajikistan
6. Uzbekistan
7. India
8. Pakistan

Why SCO is important
- Is seen as an Eastern counter-balance to NATO
- Enhances security cooperation among members
- Helps deal with terrorism, particularly IS terrorists
- Increases economic cooperation in the region
- China's One Belt and One Road (OBOR) initiative
- India's push for connectivity with Chabahar port in Iran
- International North-South Transport Corridor connecting the sub-continent with Central Asian countries

Issues
- India's objections to China on OBOR
- Traditional hostility between India and Pakistan
- Russia and China standoff over Ukraine

o The spread of extremist ideology and propaganda, including the public justification of terrorism as a means of incitement to committing terrorist acts, has been particularly dangerous under the circumstances. In this regard, SCO will enhance joint efforts to counteract societal radicalization, which results in the manifestation of the worst forms of extremism, including terrorism, especially among young people. We are also taking steps to prevent religious, ethnic, ideological and political extremism, ethnic and racial intolerance, and xenophobia

o Adhering to the provisions of the **2006 Agreement** on Cooperation in Identifying and Blocking the Channels of Penetration on the Territory of SCO Member States of Individuals Involved in Terrorist, Separatist and Extremist

Activities, as well as the **2015 Agreement** on Cooperation and Interaction of the SCO Member States on Border Issues, member States will continue their collaboration in preventing malicious activities and movement of foreign terrorists, militants and terrorist groups by means of effective border control, an exchange of data regarding persons involved in terrorist activities, identifying forged or stolen identification documents, as well as conducting joint investigations of transnational terrorist crimes.

o Although SCO is not a military alliance, our front-line struggle against terrorist threats demands that we further develop and enhance mechanisms aimed at complete eradication of terrorist activities. In this regard, SCO will continue its scheduled anti-terrorist training manoeuvres, including the **SCO Peace Mission exercise**.

Countering Illicit Drug Trafficking Is among SCO Principal Priorities

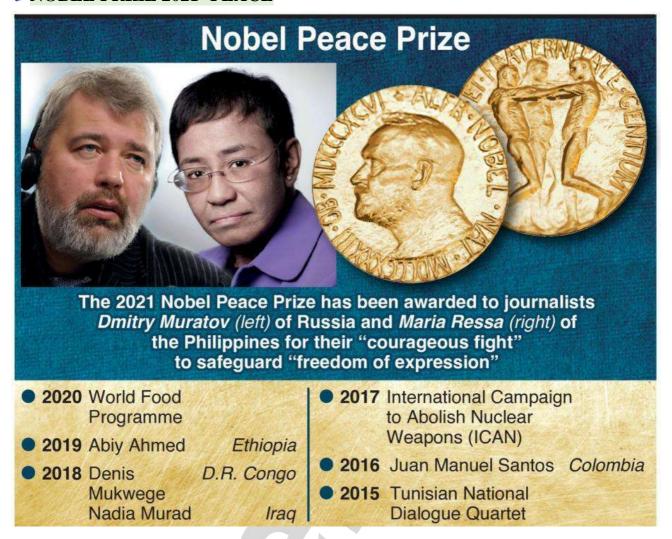**Economic Development as a Means of Preventing the Emergence of New Sources of Challenges and Threats to Security**

o Uneven economic development in various parts of the world increasingly leads to radicalization and ultimately to life-threatening conflict situations. Negative trends in global economic development intensify existing imbalances, which in turn contribute to a growing number of threats and challenges to security and sustainable development. In light of this, SCO stands for broad international cooperation in providing the impetus to world economic recovery, ensuring economic and financial stability, and maintaining sustainable, dynamic, balanced and inclusive growth in a rapidly globalizing environment.

o At the same time, SCO member States agree that world trade must be carried out abiding by the principles of transparency, non-discrimination and inadmissibility of protectionist practices. Trade must be based upon rules applied equally to all participants. It is important to eliminate existing trade barriers and prevent the emergence of new ones, in order to facilitate the formation of an open world economy that will reinforce the multilateral trading system.

o SCO will undertake additional measures to help develop regional economies, provide favourable conditions for trade, support investment initiatives, enhance infrastructure, build industrial parks whenever the appropriate conditions permit, and improve the quality of life for respective populations.

o An important practical step in that direction is the implementation of the Agreement between the **Governments of the SCO Member States on Creating Favourable Conditions for International Road Transportation, signed in Dushanbe, Tajikistan, in 2014**. This agreement not only establishes equitable conditions for managing mutually-beneficial trade flow from Eastern Europe to the Russian east coast and China, it has also become the treaty-based foundation for multilateral comprehensive development of regional infrastructure and an integrated system of road transportation.

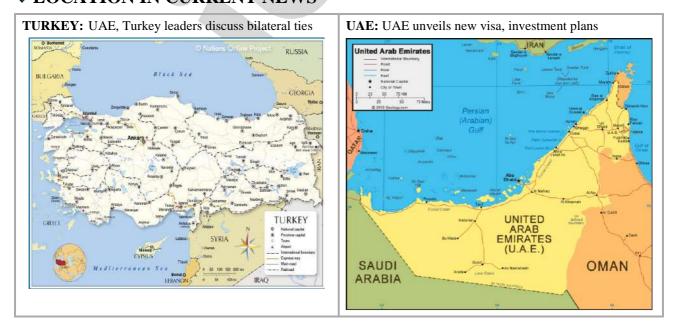**Cultural Dialogue as a Preventive Measure against Threats to Security**

o A key factor in establishing mutual trust, friendship and neighbourly relations between SCO member States is their collaboration in cultural, educational and scientific spheres. Well-established ongoing cultural dialogue among SCO nations contributes to learning about and enriching one another's cultural experiences, which eventually leads to a greater level of mutual understanding. Cultural dialogue brings people together, and unites them around common humanistic values and aspirations, helping to reduce xenophobia, religious and ethnic intolerance, and discrimination based on ethnic and racial background. Such dialogue includes a principle SCO goal of bringing civilizations together.

o The rich historical and cultural legacy of the peoples of SCO countries is embodied in cultural sites that currently comprise 20 per cent of the UNESCO World Heritage List.

o Learning about these landmarks presents a unique opportunity to become acquainted with the vibrant history of the Eurasian region, enjoy the diverse palette of its unique national and cultural attributes, and better understand the mentality and worldview of people residing there.

o Expanding cultural interactions within the SCO region, strengthening mutual understanding among its peoples, respecting their cultural traditions and customs, and preserving and enhancing cultural diversity within SCO member States will remain top priorities for our work aimed at promoting peace and ensuring security and sustainable development.

NOBEL PRIZE 2021- PEACE

Nobel Peace Prize

The 2021 Nobel Peace Prize has been awarded to journalists *Dmitry Muratov* (left) of Russia and *Maria Ressa* (right) of the Philippines for their "courageous fight" to safeguard "freedom of expression"

- **2020** World Food Programme
- **2019** Abiy Ahmed   *Ethiopia*
- **2018** Denis Mukwege   *D.R. Congo*
  Nadia Murad   *Iraq*

- **2017** International Campaign to Abolish Nuclear Weapons (ICAN)
- **2016** Juan Manuel Santos   *Colombia*
- **2015** Tunisian National Dialogue Quartet

◈ LOCATION IN CURRENT NEWS

TURKEY: UAE, Turkey leaders discuss bilateral ties	**UAE:** UAE unveils new visa, investment plans

PANJSHIR VALLEY: Taliban push deep into Panjshir Valley

Afghanistan Panjshir Valley

Panjshir Valley
Last hold out to the Taliban in Afghanistan

Monday Sept 6
- Taliban say they have **captured the valley**
- **National Resistance Front (NRF)** says it was present in "strategic positions," and **the struggle "will continue"**

Sunday Sept 5
- NRF acknowledged suffering major losses

The NRF is made up of anti-Taliban militia and former Afghan security forces

Includes local fighters loyal to **Ahmad Massoud**, son of a famous anti-Soviet and anti-Taliban commander Ahmad Shah Massoud

GUINEA: Guinea in turmoil: soldiers say govt. dissolved, borders closed

TAIWAN: China sends fighter jets towards Taiwan

GEOGRAPHY AND ENVIRONMENT
(Ecology; Biodiversity and Disaster Management)

🍁 OIL PALM

Scenario

o A plan cleared by the Union Cabinet to expand domestic palm oil output in ecologically-sensitive regions could be environmentally dangerous unless backed by a set of strong safeguards, experts said, citing disastrous impacts in growers such as Malaysia and Indonesia.

o Palm oil is the **cheapest edible oil**, used in most foods items, from bread to pizzas. In recent months, global prices have surged to multi-year peaks, forcing the government to cut import duties to make the fats affordable.

o To cut India's growing reliance on import of edible oils, the government approved the **"National Mission on Edible Oils – Oil Palm (NMEO-OP)"**, allocating ₹11,040 crore for it. The programme seeks to promote plantations in the northeastern regions, besides the Andaman and Nicobar Islands.

o **Problem:** Edible oil plantations, as opposed to oilseeds crops, tend to replace natural tropical forests, depleting biodiversity. Environmental case studies in forested belts of Sumatra, Borneo and the Malay Peninsula -- which produce 90% of global palm oil – have found commercial cultivation had decimated swathes of pristine forests, wiping out wildlife, from orangutans to birds.

o A top expert on sustainable agriculture said it was possible to grow sustainable palm oil, but certain strict criteria will need to be followed, which he said he hoped to see in the government's plan.

o India has become the world's largest importer of vegetable oils, a base ingredient for cooking most common dishes. The country meets up to two-thirds of its domestic demand through imports. In 2020-21, India imported both crude and refined palm oil worth $5.8 billion. Edible oil is the country's **third most high-value import,** after petroleum crude and gold.

o **Palm oil, a perennial crop, yields more oil per acre, than say, coconut, but it requires three times the water.** So, it must be grown in rainy areas to avoid groundwater extraction.

o The new scheme seeks to bring additional 0.65 million hectare under oil palm by 2025-26 to reach a targeted one million hectare, up from 0.3 million hectare at present. This would result in an increase in crude palm oil output to o 1.1 million tonne by 2025-26 and up to 2.8 million tonne by 2029-30.

o The scheme also provides for viability gap funding to shield growers from international price volatility by paying directly to the farmers' accounts in the form of direct benefit transfer.

Know more

o Oil palm, (Elaeis guineensis) is an African tree in the palm family (Arecaceae), cultivated as a source of oil.

o The oil palm is **grown extensively in its native West and Central Africa**, as well as in **Malaysia and Indonesia**. Palm oil, obtained from the fruits, is used in making soaps, cosmetics, candles, biofuels, and lubricating greases and in processing tinplate and coating iron plates.

o Palm kernel oil, from the seeds, is used in manufacturing such edible products as margarine, ice cream, chocolate confections, cookies, and bread, as well as many pharmaceuticals. The cake residue after kernel oil is extracted is a cattle feed.

o The plant is also grown as an ornamental in many subtropical areas.

o For commercial oil production, the outer fleshy portion of the fruit is steamed to destroy the lipolytic enzymes and then pressed; the resulting palm oil is highly coloured because of the presence of carotenes. The kernels of the fruit

are pressed in mechanical screw presses to recover palm kernel oil, which is chemically quite different from the oil from the flesh of the fruit.

o The commercial palm oil industry rapidly expanded in the late 20th century and led to the deforestation of significant swaths of Indonesia and Malaysia as well as large areas in Africa.

o New plantations are often formed using **slash-and-burn agricultural methods**, and the resulting fragmentation of natural forests and loss of habitat threatens native plants and animals. Bornean and Sumatran orangutans are especially iconic species threatened by the expansion of oil palm farming in Indonesia.

o In addition to driving biodiversity loss, the slash-and-burn practices of oil palm cultivation have contributed significantly to poor seasonal air quality in parts of Southeast Asia. Although attempts have been made to certify sustainably grown palm oil, corporate buyers have been slow to support those endeavours; some environmental groups have urged individuals to avoid products with palm oil altogether.

Additional

o The American oil palm (Elaeis oleifera) is native to Central and South America and is sometimes cultivated under the erroneous name Elaeis melanococca. Unlike the African oil palm, the trunk of the American oil palm creeps along the ground and bears flat leaves. Both the American oil palm and the maripa palm (Attalea maripa) are used to obtain palm oil in some areas.

o The oil of the American oil palm was probably used for making candles by the early American colonizers.

BEHLER AWARD

o Indian biologist Shailendra Singh has been awarded the **Behler Turtle Conservation Award** for bringing three critically endangered turtle conservation species back from the brink of extinction.

o These are **Red-crowned Roofed Turtle (Batagur kachuga), Northern River Terrapin (Batagur baska),** and **Black Softshell Turtle (Nilssonia nigricans)**
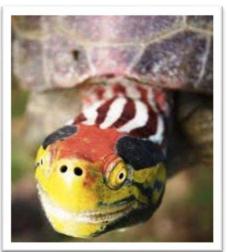
Red-crowned Roofed Turtle (Batagur kachuga)

o Red Crowned Roofed Turtle is one of the 24 species endemic to India, is characterised by the bright colours such as red, yellow, white and blue on the faces and necks of the males.

o **Common Names:** Bengal roof turtle, Red-crowned roofed turtle.
   Distribution:

o It is a freshwater turtle species found in **deep flowing rivers** with terrestrial nesting sites.

o The Red-crowned roofed turtle is **native to India, Bangladesh and Nepal**.

o Historically, the species was widespread in the Ganga River, both in India and Bangladesh. It also occurs in the Brahmaputra basin.

o Currently in India, the National Chambal River Gharial Sanctuary is the only area with substantial population of the species, but even this Protected Area and habitat are under threat.

Northern River Terrapin (Batagur baska)

o The northern river terrapin (Batagur baska), is a species of riverine turtle. It is one of the most critically endangered turtle species according to IUCN.

o **Habitat:** Terrestrial & highly aquatic (freshwater & brackish); lives in tidal areas of the estuaries of medium and large rivers and also in mangrove habitat.

Habit

o Amphibian. Little known about the natural ecology and behavior of Batagurs, partly because the highly silted rivers of their habitat make observations particularly difficult.

o Mainly prefers freshwater habitats and go up to brackish river mouths or estuaries in the breeding season. After laying eggs they return to the freshwater. Individuals known to undertake massive seasonal migrations of 50 to 60 miles to the sand banks that constitutes their breeding grounds.

o **Diet:** Omnivorous- Takes waterside plants and small animals such as clams.

Black Softshell Turtle (Nilssonia nigricans)

o **Scientific Name:** Nilssonia nigricans

o **Features:** They look almost the same as the Indian peacock softshell turtle (Nilssonia hurum).

Habitat:

o A freshwater species and there are 29 species of freshwater turtles and tortoises found in India.

o They are found in ponds of temples in north-eastern India and Bangladesh. Its distribution range also includes the Brahmaputra River and its tributaries.
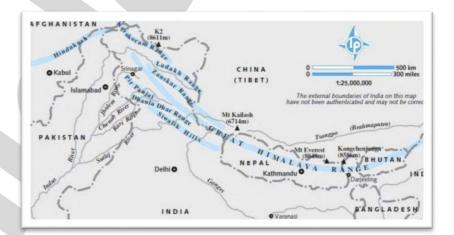

o **Protection Status:** IUCN Red List: Critically Endangered; CITES: Appendix I; Wildlife (Protection) Act, 1972: No legal protection

o Threats: Consumption of turtle meat and eggs, silt mining, encroachment of wetlands and change in flooding pattern.

🔸 HIMALAYAS FACTS

Geography

o The Himalayas stretch across the north-eastern portion of India. They cover approximately 1,500 mi (2,400 km) and pass through the nations of India, Pakistan, Afghanistan, China, Bhutan and Nepal.

o The Himalayan range is made up of three parallel ranges often referred to as the Greater Himalayas, the Lesser Himalayas, and the Outer Himalayas.

Ecology

o While intimidating mountains like Everest and K2 tend to dominate our perceptions of the region, the Himalayas are rich in biodiversity. Climates range from tropical at the base of the mountains to perennial snow and ice at the highest elevations.

o These complex and diverse eco-regions are interconnected: an ecological threat to one is ultimately a threat to many. Here are just a few examples of Himalayan ecology:

Montane Grasslands and Shrublands:

▪ Western alpine shrubs and meadows can be found between 9,850 and 16,400 ft.

▪ These areas tend to have cold winters and mild summers that allow for plant growth.

▪ Rhododendron plants cover the lower shrublands, while the alpine meadows, directly above, host a range of flora in the warmer months.

- Animals found in this region include the snow leopard, Himalayan tahr, musk deer, and pikas.

Temperate Coniferous Forest:

- In the northeast, temperate sub-alpine conifer forests are found at elevations of 8,200 to 13,800 ft.
- Located in the inner valley area, these forests are protected from harsh monsoon conditions by surrounding mountain ranges.
- The dominant tree types are pine, hemlock, spruce, and fir. Animals found in this region include red pandas, takins, and musk deer.

Temperate Broadleaf and Mixed Forests:

- Found in middle elevations of 6,600 to 9,800 ft. in the eastern region are broadleaf and coniferous forests.
- These forests receive almost 80 inches of annual rainfall, mostly during the monsoon season.
- In addition to indigenous oaks and maples, plants like orchids, lichen, and ferns also grow in the area.
- A huge range of wildlife, including over 500 species of birds, are found here during the cooler seasons before they migrate to higher elevations to escape the hot summers. This is also the primary home for golden langur monkeys.

Tropical and Sub-tropical Broadleaf Forests:

- Located at 1,650 to 3,300 ft. along a narrow strip of the outer Himalayan range are the Himalayan sub-tropical broadleaf forests.
- Here there is a wide range of plant life thanks to the areas varied topography, soil types, and rainfall levels.
- Forest types include subtropical dry evergreen, northern dry mixed deciduous forests, moist mixed deciduous forests, subtropical broadleaf forests, northern tropical semi-evergreen forests, and northern tropical wet evergreen forests. Wildlife includes many threatened species including tigers and Asian elephants. More than 340 different species of birds can be found in this region.

Important peaks:

- Mount Everest at 29,029 ft (8,848 m) is not only the highest peak in the Himalayas, but the highest peak on the entire planet.
- Other famous peaks include Karakora (K2), Kailash, Kanchenjunga, Nanga Parbat, Annapurna, and Manasklu.

Rivers:

- The Himalayas are the source for the Indus, the Yangtze and the Ganga-Brahmaputra. All three are major river systems for the continent of Asia.
- The main rivers sourced in Himalayas are the Ganges, Indus, Yarlung, Yangtze, Yellow, Mekong, and Nujiang.
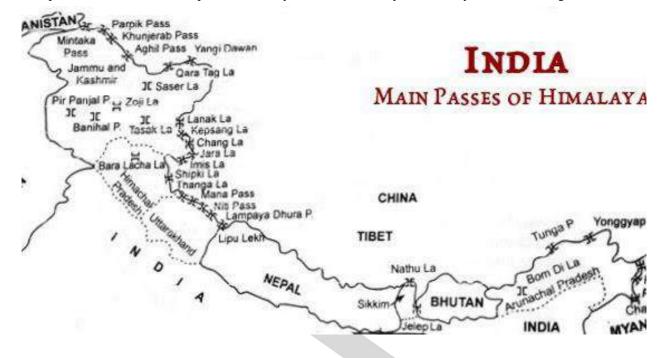
Glaciers:

- The Himalayas are the third largest deposit of ice and snow in the world, after Antarctica and the Arctic. There are approximately 15,000 glaciers located throughout the range.
- At 48 miles (72 km) in length, the Himalayan Siachen glacier is the largest glacier outside the poles.
- Other notable glaciers located in the Himalayas include the Baltoro, Biafo, Nubra, and Hispur.

Additional Facts:

- The Himalayas are the result of **tectonic plate motions** that collided India into Tibet.
- Because of the great amount of tectonic motion still occurring at the site, the Himalayas have a proportionally high number of earthquakes and tremors.
- The Himalayas are **one of the youngest mountain ranges** on the planet.
- The range **affects air and water circulation systems**, impacting the weather conditions in the region.
- The Himalayas cover approximately 75% of Nepal.
- Serving as a natural barrier for tens of thousands of years, the range prevented early interactions between the people of India and the people of China and Mongolia.
- Mt. Everest was named after Colonel Sir George Everest, a British surveyor who was based in India during the early-to-mid-nineteenth century.

o The Nepalese call Mt. Everest "Samgarmatha" which can be translated as "Goddess of the Universe" or "Forehead of the Sky."

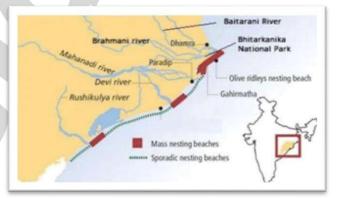o Despite its name, the Snow Leopard – a Himalayan local – is actually most closely related to the Tiger.

BRAHMANI RIVER

o Environmentalists expressed concern over the massive diversion of fresh water from the Brahmani river basin, which could pose a grave threat to the famous mangrove vegetation in Odisha.

o Bh**itarkanika** — a notified Ramsar wetland — is spread over 195 sq. km and is home to 62 mangrove species. Besides, 1,600 salt water crocodiles crawl on the mudflats of the Bhitarkanika mangrove forest.

o Mangroves grow in brackish water. Proportionate fresh water flow from the Brahmani river basin and the **Kharasrota river** keep the salinity level of the water along the shore down. The brackish water becomes ideal for the mangroves to grow and stay healthy.

o The Wildlife Society of Orissa (WSO), an environmental pressure group, had drawn public attention on the excess water allocation for industries, which is likely to reduce fresh water discharge to the sea.

o The Talcher-Angul coal mines, steel and power plants as well as the Kalinganagar steel and power hub are drawing enormous quantities of fresh water from the Brahmani river.

Brahmani River

o Brahmani River is in northeastern Odisha state.

o Formed by the confluence of the **Sankh and South Koel rivers**, the Brahmani flows for 300 miles (480 km).

o It winds generally south-southeast past Bonaigarh and Talcher and then turns east to join northern branches of the Mahanadi River, which then empties into the Bay of Bengal at **Palmyras Point**.

o It is one of the few rivers that cut across the Eastern Ghats, and it has formed a **minor gorge at Rengali**, where a dam has been built.

MANDA BUFFALO

o The Manda buffalo found in the **Eastern Ghat and Koraput plateau in Odisha** has been tagged as the 19th unique breed of buffaloes found in the country by the **National Bureau of Animal Genetic Resources (NBAGR).**

o The **NBAGR is affiliated with the Indian Council of Agriculture Research (ICAR).** It gave the indigenous recognition to this breed after assessing a survey report submitted by Odisha's Animal Resource Development (ARD) and Odisha University of Agriculture and Technology (OUAT).

o The ARD and OUAT had first identified the germ-plasm of this unique breed through a survey.

o There are around one lakh Manda buffaloes, which mostly contribute to nutrition needs of households and also assist in agricultural operations in the hilly terrains of Koraput, Malkangir and Nabarangpur districts. Besides, these buffaloes are **resistant to parasitic infections and less prone to diseases**.

o The average single milk yield of these buffaloes is 2-2.5 litres with more than 8% fat. However, some of the yield goes up to 4 litres.

o The Manda buffaloes get matured in three years and give birth to the first calf in the fourth year. During their 20-year life span, they give birth to a calf every 1.5 to 2 years.

GREEN ENERGY

o **Green energy comes from natural sources such as sunlight, wind, rain, tides, plants, algae and geothermal heat**. These energy resources are renewable, meaning they're naturally replenished. In contrast, fossil fuels are a finite resource that take millions of years to develop and will continue to diminish with use.

o Renewable energy sources also have a much smaller impact on the environment than fossil fuels, which produce greenhouse gases as a by-product, contributing to climate change. Gaining access to fossil fuels typically requires either mining or drilling deep into the earth, often in ecologically sensitive locations.

o Green energy, however, utilizes energy sources that are readily available all over the world, including in rural and remote areas that don't otherwise have access to electricity. Advances in renewable energy technologies have lowered the cost of solar panels, wind turbines and other sources of green energy, placing the ability to produce electricity in the hands of the people rather than those of oil, gas, coal and utility companies.

o **Green energy can replace fossil fuels** in all major areas of use including electricity, water heating, home appliances, and fuel for motor vehicles.

Types of green energy

Here are six of the most common types of green energy:

1. **Solar power** - The most prevalent type of renewable energy, solar power is typically **produced using photovoltaic cells**, which capture sunlight and turn it into electricity. Solar energy is also used to heat buildings and water, provide natural lighting and cook food. Solar technologies have become inexpensive enough to power everything from small hand-held gadgets to entire neighborhoods.

2. **Wind power** - Air flow on the earth's surface can be used to push turbines, with stronger winds producing more energy. High-altitude sites and areas just offshore tend to provide the best conditions for capturing the strongest winds.

3. **Hydropower** - Also called hydroelectric power, hydropower is generated by the Earth's water cycle, including evaporation, rainfall, tides and the force of water running through a dam. Hydropower depends on high precipitation levels to produce significant amounts of energy.

4. **Geothermal energy** - Just under the earth's crust are massive amounts of thermal energy, which originates from both the original formation of the planet and the radioactive decay of minerals. Geothermal energy in the form of hot springs has been used by humans for millennia for bathing, and now it's being used to generate electricity.

5. **Biomass** - Recently-living natural materials like wood waste, sawdust and combustible agricultural wastes can be converted into energy with far fewer greenhouse gas emissions than petroleum-based fuel sources. That's because these materials, known as biomass, contain stored energy from the sun.

6. **Biofuels** - Rather than burning biomass to produce energy, sometimes these renewable organic materials are transformed into fuel. Notable examples include ethanol and biodiesel. Biofuels have the potential to meet more than 25 percent of world demand for transportation fuels by 2050, up from two percent in 2010.

The Main Benefits Green Energy

o Reducing carbon emissions, preventing further environmental harm, and creating jobs are just some of the opportunities provided by investing in green energy. And by buying green energy, you are helping bring that future closer.

o Every day the sun provides the earth with more than enough energy to power the entire planet, but there's a problem. The current technologies we have in place are not efficient enough to convert enough of it into electricity, and for many, it's more cost-effective to use other traditional sources.

o Going green means greater funding to solar, wind, and other renewable energy projects, creating technologies to better harness the renewable sources around us and make them more affordable and accessible to everyone.

Way ahead

o Traditionally we have relied on materials such as coal, oil, and even kerosene to provide us with the energy we need. However, these fuels are non-renewable and expel pollution into our environment and atmosphere. As such, these sources will eventually run out, causing fears about shortages and access to them. But what's worse, is the environmental harm they inflict.

o Burning these conventional sources of energy fuels global warming. Coal and oil pour toxic gases into the environment, impacting general health, and causing respiratory issues, and reducing live expectancies. Simply extracting oil and coal can destroy areas environments, economies, and livelihoods in the form of devastating oil spills.

o Green energy will help us mitigate and sidestep at least some of these issues, and the quicker we move to renewable energy sources the better.

BIO-DECOMPOSER

The Delhi government began spraying the Pusa bio-decomposer across fields in the city to prevent stubble burning.

About

o Bio-decomposer generally, an activator or accelerator is a substance that activates, accelerates or increases the total output of the process.

o Microbial cultures added to organic materials or residues to hasten their decomposition act as biological accelerators. **Decomposers produce enzymes**, which lower the activation energy **necessary to break chemical bonds in organic materials.**

o It is formulation of **fast decomposing fungus, which converts biomass** its includes grass windrows/clippings, animal wastes, fields straw after crop harvest and weeds, etc. in fertile humus gradually.

o It will take 60-90 days for conversion of agricultural wastes in powder form.

NET ZERO

Net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net zero when the amount we add is no more than the amount taken away.

What is India doing to lower emissions?

o India is working to reduce its emissions, aligned with the goal of less than 2°C global temperature rise, seen in its headline pledge to cut the emissions intensity of GDP by 33%-35% by 2030 over the 2005 level.

o But it has **not favoured a binding commitment towards carbon neutrality**.

o It is also **not aligned with the more ambitious goal of 1.5°C temperature rise**.

o Among the contentious issues it faces is heavy reliance on coal. According to the International Energy Agency's India Energy Outlook 2021, coal accounts for close to 70% of electricity generation. Cutting greenhouse gases which heat the atmosphere and contribute to climate change involves shifting power production away from coal, greater adoption of renewables, and transforming mobility through electric vehicles. India is praised by some for its renewables target: scaling up power from renewables such as solar and wind to 450 GW by 2030.

o The U.N. Framework Convention on Climate Change (UNFCCC) provides for common, but differentiated, responsibilities of nations, favouring countries like India. Some politicians support a net zero target as it can put India on a green development trajectory, attracting investment in innovative technologies.

How are other big countries pursuing net zero?

o As the largest emitter of GHGs, **China told the U.N. in 2020 that it would move to net zero by 2060**. Its pledge to peak CO_2 emissions before 2030 and achieve carbon neutrality three decades later is among the most high-profile commitments.

o To operationalise this goal, China's State Council has issued a guideline on the transition to a green and low-carbon circular economic development system, focusing on industrial production, logistics, infrastructure, consumption, innovation, and enabling policies. But changing winds in global politics, resumed U.S. leadership of the climate campaign, and likely taxes on unsustainably produced export goods could influence Chinese policies.

o The U.S., as the second biggest emitter with large historical emissions, **returned to the Paris Agreement** under President Joe Biden with an ambitious **2050 net zero plan**. Its Department of Energy announced two programmes that are also expected to boost employment: slashing the current cost of solar power by 60%, and putting up 30 GW of offshore wind power by 2030.

o The European Union (EU) member-states have committed themselves to reducing emissions by at least 55% by 2030 over 1990 levels. In July, the EU published a climate law that binds the bloc to its 2030 emissions target and **carbon neutrality by 2050.**

Why do some analysts see net zero as controversial?

o Although a global coalition has coalesced around the concept, an increasingly vocal group views it as a distraction, useful only to score political points.

o Carbon neutrality looks to nascent technology to suck out CO_2 from the atmosphere.

o Youth movements and some scientists call this procrastination, since it enables the fossil fuel industry to continue expanding. Many fossil fuel companies support net zero goals.

What are India's choices?

o Getting a stronger economic dividend for the same volume of CO2 emitted by reforming energy, industry and buildings, and achieving higher energy efficiency in all sectors can slow emissions.

o State governments must be part of such a climate plan, and climate governance institutions must be set up at the national and State levels.

♣ CARBON CREDIT

o A carbon credit is a tradable permit or certificate that provides the holder of the credit **the right to emit one ton of carbon dioxide or an equivalent of another greenhouse gas** – it's essentially an offset for producers of such gases.

o The **main goal for the creation of carbon credits is the reduction of emissions of carbon dioxide** and other greenhouse gases from industrial activities to reduce the effects of global warming.

o Carbon credits are **market mechanisms** for the minimization of greenhouse gases emission.

o Governments or regulatory authorities set the caps on greenhouse gas emissions.

o For some companies, the immediate reduction of the emission is not economically viable. Therefore, they can purchase carbon credits to comply with the emission cap.

o Companies that achieve the carbon offsets (reducing the emissions of greenhouse gases) are usually rewarded with additional carbon credits. The **sale of credit surpluses may be used to subsidize future projects** for the reduction of emissions.

The introduction of such credits was ratified in the **Kyoto Protocol.** The Paris Agreement validates the application of carbon credits and sets the provisions for the further facilitation of the carbon credits markets.

Types of Carbon Credits

There are two types of credits:

o **Voluntary emissions reduction (VER):** A carbon offset that is exchanged in the over-the-counter or voluntary market for credits.

o **Certified emissions reduction (CER):** Emission units (or credits) created through a regulatory framework with the purpose of offsetting a project's emissions. The main difference between the two is that there is a third-party certifying body that regulates the CER as opposed to the VER.

Trading Credits

o Carbon credits can be traded on both private and public markets. Current rules of trading allow the international transfer of credits.

o The prices of credits are primarily driven by the levels of supply and demand in the markets. Due to the differences in the supply and demand in different countries, the prices of the credits fluctuate.

o Although carbon credits are beneficial to society, it is not easy for an average investor to start using them as investment vehicles. The certified emissions reductions (CERs) are the only product that can be used as investments in the credits.

o However, CERs are sold by special carbon funds established by large financial institutions. The carbon funds provide small investors with the opportunity to enter the market.

o There are special exchanges that specialize in the trading of the credits, including the European Climate Exchange, the NASDAQ OMX Commodities Europe exchange, and the European Energy Exchange.

♣ METHANE

o **Methane (CH4)** is a hydrocarbon that is a primary component of natural gas.

o Methane is also a **greenhouse gas (GHG),** so its presence in the atmosphere affects the earth's temperature and climate system. Methane is emitted from a variety of anthropogenic (human-influenced) and natural sources.
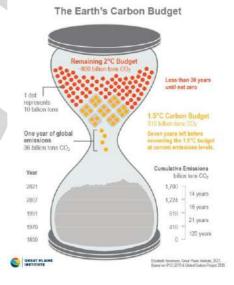
Anthropogenic emission sources include landfills, oil and natural gas systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial processes.

o Methane is the **second most abundant anthropogenic GHG after carbon dioxide (CO2),** accounting for about 20 percent of global emissions.

o Methane is **more than 25 times as potent as carbon dioxide at trapping heat in the atmosphere**. Over the last two centuries, methane concentrations in the atmosphere have more than doubled, largely due to human-related activities. Because methane is both a powerful greenhouse gas and short-lived compared to carbon dioxide, achieving significant reductions would have a rapid and significant effect on atmospheric warming potential.

Who are the biggest methane emitters?

o China, the United States, Russia, India, Brazil, Indonesia, Nigeria, and Mexico are estimated to be responsible for nearly half of all anthropogenic methane emissions.

o The major methane emission sources for these countries vary greatly. For example, a key source of methane emissions in China is coal production, whereas Russia emits most of its methane from natural gas and oil systems.

o The largest sources of methane emissions from human activities in the United States are oil and gas systems, livestock enteric fermentation, and landfills.

CO2 BUDGET

o A CO_2 budget determines how much CO_2 a country or person is allowed to emit in order to achieve the global climate protection goal of limiting global warming to 1.5 °C.

o In Germany, German citizens cause an average of 10 tonnes of CO_2 per capita and year.

o In terms of the climate protection target, however, **only 1 tonne of CO_2 per person and year is acceptable**.

WORLD RHINO DAY
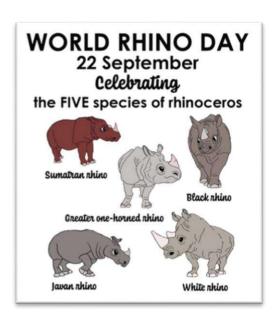
o Assam marked World Rhino Day — **September 22** — with a special ceremony by burning a stockpile of nearly 2,500 horns of the one-horned rhinoceros.

o Rhino horn is used in traditional Chinese medicine to cure a range of ailments, from cancer to hangovers, and also as an aphrodisiac. In Vietnam, possessing a rhino horn is considered a status symbol.

o Due to demand in these countries, poaching pressure on rhinos is ever persistent.

What is the purpose of the ceremony?

o The public ceremony at Bokakhat in Kaziranga National Park (KNP) with Chief Minister Himanta Biswa Sarma as the chief guest has been publicised as a "milestone towards rhino conservation" aimed at "busting myths about rhino horns". It's a

loud and clear message to the poachers and smugglers that such items have no value.

o Thus the case for the destruction of horns — a process that is in compliance with **Section 39(3)(c) of the Wildlife (Protection) Act of 1972.**

How serious a threat is poaching?

o Several cases of rhino poaching were reported in the years leading up to 2013 and 2014. These two years witnessed the highest number of incidents in a decade, at 27 in each year. This has since decreased to 17 in 2015, 18 in 2016, 6 each in 2017 and 2018, and 3 in 2019.

o The one-horned rhino, which was earlier "endangered" as per the IUCN Red List, is now listed as **"Vulnerable."**

o In 2019, the Assam government constituted a dedicated **"Special Rhino Protection Force"** to keep a check on rhino poaching and related activities at KNP.

o A March 2018 rhino census pegged the rhino population at 2,413 in KNP, 101 in Orang National Park, and 102 in Pobitora Wildlife Sanctuary, and a more recent count said there were 43 in the Manas National Park.

SCIENCE AND TECHNOLOGY
(Inventions, Innovations, Discoveries and Explorations)

NOBEL PRIZE 2021- PHYSICS

THE NOBEL PRIZE IN PHYSICS 2021

Three Laureates share this year's prize "for groundbreaking contributions to our understanding of complex physical systems"

ONE HALF JOINTLY TO

KLAUS HASSELMANN
Max Planck Institute for Meteorology, Hamburg, Germany

SYUKURO MANABE
Princeton University, USA

WHY: "For the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming"
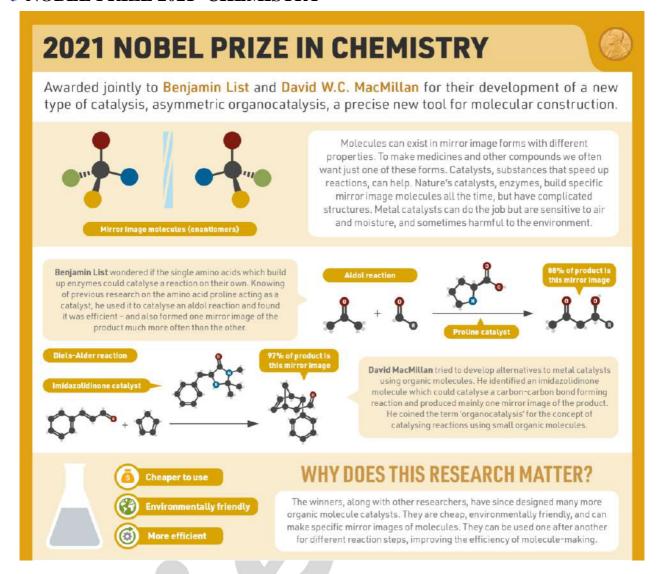
THE OTHER HALF TO

GIORGIO PARISI
Sapienza University of Rome, Italy

WHY: "For the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales"

NOBEL PRIZE 2021- CHEMISTRY

SOIL MICROBES

o Soil microorganisms exist in large numbers in the soil as long as there is a carbon source for energy. A large number of bacteria in the soil exists, but because of their small size, they have a smaller biomass.

o **Actinomycetes** are a factor of 10 times smaller in number but are larger in size so they are similar in biomass to bacteria.

o Fungus population numbers are smaller but they dominate the soil biomass when the soil is not disturbed.

o Bacteria, actinomycetes, and protozoa are hardy and can tolerate more soil disturbance than fungal populations so they dominate in tilled soils while fungal and nematode populations tend to dominate in untilled or no-till soils.

There are more microbes in a teaspoon of soil than there are people on the earth.

What Are The Different Types Of Soil Microbes?

There are five different types of soil microbes: bacteria, actinomycetes, fungi, protozoa and nematodes. Each of these microbe types has a different job to boost soil and plant health.

1. **Bacteria:** Bacteria is the crucial workforce of soils. They are the final stage of breaking down nutrients and releasing them to the root zone for the plant. In fact, the Food and Agriculture Organization once said "Bacteria may well be the most valuable of life forms in the soil."

2. **Actinomycetes:** Actinomycetes were once classified as fungi, and act similarly in the soil. However, some actinomycetes are predators and will harm the plant while others living in the soil can act as antibiotics for the plant.

3. **Fungi:** Like bacteria, fungi also lives in the rootzone and helps make nutrients available to plants. For example, **Mycorrhizae** is a fungi that facilitate water and nutrient uptake by the roots and plants to provide sugars, amino acids and other nutrients.

4. **Protozoa:** Protozoa are larger microbes that love to consume and be surrounded by bacteria. In fact, nutrients that are eaten by bacteria are released when protozoa in turn eat the bacteria.

5. **Nematodes:** Nematodes are microscopic worms that live around or inside the plant. Some nematodes are predators while others are beneficial, eating pathogenic nematodes and secreting nutrients to the plant.
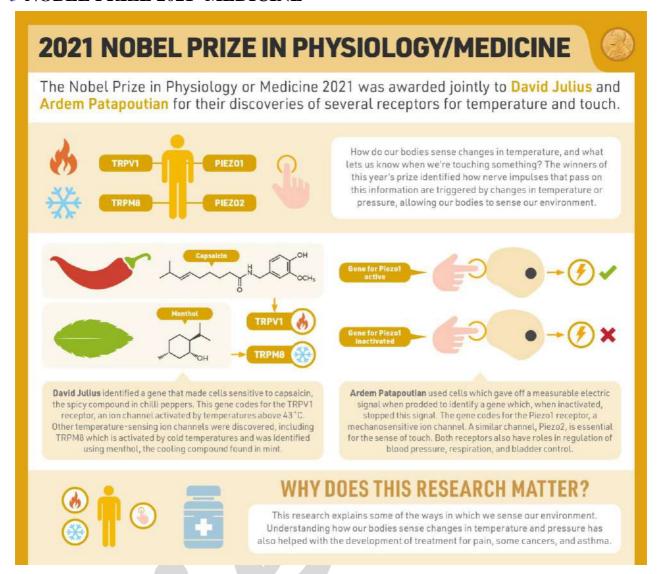
Microbial soil organic matter decomposition

o Organic matter decomposition serves two functions for the microorganisms, providing energy for growth and suppling carbon for the formation of new cells.

o **Soil organic matter (SOM)** is composed of the **"living" (microorganisms), the "dead" (fresh residues), and the "very dead" (humus) fractions.**

o The "very dead" or humus is the long-term SOM fraction that is thousands of years old and is resistant to decomposition.

o Soil organic matter has two components called the **active (35 percent) and the passive (65 percent) SOM**.

o Active SOM is composed of the "living" and "dead" fresh plant or animal material which is food for microbes and is composed of easily digested sugars and proteins.

o The **passive SOM is resistant to decomposition by microbes and is higher in lignin.**

o Microbes need regular supplies of active SOM in the soil to survive in the soil.

o Long-term no-tilled soils have significantly greater levels of microbes, more active carbon, more SOM, and more stored carbon than conventional tilled soils.

o A majority of the microbes in the soil exist under starvation conditions and thus they tend to be in a dormant state, especially in tilled soils.

o Dead plant residues and plant nutrients become food for the microbes in the soil.

o Soil organic matter (SOM) is basically all the organic substances (anything with carbon) in the soil, both living and dead.

o SOM includes plants, blue green algae, microorganisms (bacteria, fungi, protozoa, nematodes, beetles, springtails, etc.) and the fresh and decomposing organic matter from plants, animals, and microorganisms.

Soil organic matter can be broken down into its component parts.

▪ One hundred grams (g) or 100 pounds (lbs) of dead plant material yields about 60–80 g (lbs) of carbon dioxide, which is released into the atmosphere.

▪ The remaining 20–40 g (lbs) of energy and nutrients is decomposed and turned into about 3–8 g (lbs) of microorganisms (the living), 3–8 g (lbs) of non-humic compounds (the dead), and 10–30 g (lbs) of humus (the very dead matter, resistant to decomposition).

▪ The molecular structure of SOM is mainly carbon and oxygen with some hydrogen and nitrogen and small amounts of phosphorus and sulfur.

▪ Soil organic matter is a by-product of the carbon and nitrogen cycles.

NOBEL PRIZE 2021- MEDICINE

INDIAN SPACE ASSOCIATION (ISpA)

*Prime Minister launched the **Indian Space Association (ISpA),** an industry body consisting of various stakeholders of the Indian space domain.*

The members of the organisation include government bodies such as Indian Space Research Organisation (ISRO) and private telecom companies such as Bharti Airtel's One Web, Tata Group's Nelcom, L&T, MapMyIndia, and others.

Why is the formation of ISpA significant?

o Ever since the race to reach the space and then land on the Moon began between the US and the erstwhile USSR, governments across the world have poured millions of dollars to push the envelope in term of exploring the edges of the space. With time, governments and government agencies collaborated to explore newer planets and galaxies in search of life forms that exist outside Earth.

o In the recent past, private sector companies such as **Elon Musk's SpaceX, Richard Branson's Virgin Galactic, and Jeff Bezos' Blue Origin** have taken the lead in spaceflight, promising to start tourist flights to space.

o Though India too has made significant strides in space exploration over time, state-run ISRO has been at the centre and front of this progress. Several private sector companies, however, have shown an interest in India's space domain, with space-based communication networks coming to the fore.

What does ISpA aim to achieve?

o One of the main goals of the organisation is to s**upplement the government's efforts towards making India a global leader in commercial space-based excursions**. Of late, ISRO's rockets have been carrying the payload and communication satellites of various countries; now, private players will also look to broach this space with the new organisation.

o ISpA said it **would engage with stakeholders across the ecosystem for the formulation of an enabling policy framework** which fulfils the government vision of leading commercial space exploration.

o ISpA will also work **towards building global linkages for the Indian space industry** to bring in critical technology and investments into the country to create more high skill jobs.

Who are the stakeholders in this organisation? How will they contribute?

o ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

o The founding members include telecom service providers such as Bharti Airtel, engineering firm Larson & Toubro, and other companies such as Nelco of Tata Group, OneWeb, Mapmyindia, Walchandnagar Industries and Alpha Design Technologies.

o Other core members include Godrej, Hughes India, Ananth Technology Limited, Azista-BST Aerospace Private Limited, BEL, Centum Electronics, and Maxar India.

o In India, the space-based communications network has taken off with several Indian and international companies betting on it as the next frontier to provide high-speed and affordable Internet connectivity to inaccessible areas as well. This includes SpaceX's StarLink, Sunil Bharti Mittal's OneWeb, Amazon's Project Kuiper, US satellite maker Hughes Communications, etc.

o OneWeb, for example, is building its initial constellation of 648 low-earth orbit satellites and has already put 322 satellites into orbit. Its services are expected to begin this year to the Arctic region including Alaska, Canada, and the UK. By late 2022, OneWeb will offer its high-speed, low latency connectivity services in India and the rest of the world.

o In addition, StarLink and Amazon are also in discussion with the Indian government for a licence to offer satellite-based Internet services. SpaceX has a plan to create a network of 12,000 satellites of which over 1,300 are already sky-borne.

Why is satellite-based Internet important in India?

o The expansion of the Internet in India is crucial to the government's dream of a digital India where a majority of government services are delivered directly to the customer. Although the government aims to connect all villages and gram panchayats with high-speed Internet over the next 1000 days through BharatNet, internet connectivity in hilly areas and far-flung places of Northeast India are still a challenge.

o To overcome this, industry experts suggest that satellite Internet will be essential for broadband inclusion in remote areas and sparsely populated locations where terrestrial networks have not reached. As of now, however, satellite communications remains limited to use by corporates and institutions that use it for emergency use, critical trans-continental communications and for connecting to remote areas with no connectivity.

o As of August this year, India had only 3 lakh satellite communications customers, compared with 45 lakh in the US and 21 lakh in the European Union.

INTERNET OF THINGS

o The Internet of things (IoT) is the extension of Internet connectivity into physical devices and everyday objects.

o Embedded with electronics, Internet connectivity, and other hardware like sensors, these devices can communicate and interact with others over the Internet, and they can be remotely monitored and controlled by computers and smart phone.

Applications of internet of things:

o **Smart cities**: Cellular communication enabled Smart municipal bins will send alerts to municipal services when a bin needs to be emptied

o **Agriculture**: Sensing for soil moisture and nutrients, controlling water usage for plant growth and determining custom fertilizer are some simple uses of IoT.

o **Energy utilization**: Smart Grids will be able to detect sources of power outages, can automatically take inputs of solar panel, making possible distributed energy system

o **Healthcare**: Personalized analysis of an individual's health and tailor-made strategies to combat illness will be possible.

o **Manufacturing**: The IoT intelligent systems enable rapid manufacturing of new products, dynamic response to product demands, and real-time optimization of manufacturing production and supply chain networks, by networking machinery, sensors and control systems together.

o **Environmental monitoring**: to assist in environmental protection by monitoring air or water quality, atmospheric or soil conditions. It can even include areas like monitoring the movements of wildlife and their habitats

o **Supply chain**: By placing RFID tags on individual products, the exact location of single items in a large warehouse can be shared, thus saving search time, streamlining infrastructure, and lowering labour costs.

MACHINE LEARNING

o Machine learning is an **application of artificial intelligence (AI)** that provides **systems the ability to automatically learn and improve from experience** without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.

o The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better decisions in the future based on the examples that we provide. The primary aim is to allow the computers learn automatically without human intervention or assistance and adjust actions accordingly.

o But, using the classic algorithms of machine learning, text is considered as a sequence of keywords; instead, an approach based on semantic analysis mimics the human ability to understand the meaning of a text.

Some Machine Learning Methods

o Machine learning algorithms are often categorized as supervised or unsupervised.

o **Supervised machine learning algorithms can apply what has been learned in the past to new data using labelled examples** to predict future events. Starting from the analysis of a known training dataset, the learning algorithm produces an inferred function to make predictions about the output values. The system is able to provide targets for any new input after sufficient training. The learning algorithm can also compare its output with the correct, intended output and find errors in order to modify the model accordingly.

o In contrast, **unsupervised machine learning algorithms are used when the information used to train is neither classified nor labelled**. Unsupervised learning studies how systems can infer a function to describe a hidden structure from unlabelled data. The system doesn't figure out the right output, but it explores the data and can draw inferences from datasets to describe hidden structures from unlabelled data.

o **Semi-supervised machine learning algorithms** fall somewhere in between supervised and unsupervised learning, since they use both labelled and unlabelled data for training – typically a small amount of labelled data and a large amount of unlabelled data. The systems that use this method are able to considerably improve learning accuracy. Usually, semi-supervised learning is chosen when the acquired labelled data requires skilled and relevant resources in order to train it / learn from it. Otherwise, acquiring unlabelled data generally doesn't require additional resources.

o Reinforcement machine learning algorithms is a learning method that interacts with its environment by producing actions and discovers errors or rewards. Trial and error search and delayed reward are the most relevant characteristics of reinforcement learning. This method allows machines and software agents to automatically determine the ideal behaviour within a specific context in order to maximize its performance. Simple reward feedback is required for the agent to learn which action is best; this is known as the reinforcement signal.

o Machine learning enables analysis of massive quantities of data. While it generally delivers faster, more accurate results in order to identify profitable opportunities or dangerous risks, it may also require additional time and resources to train it properly. Combining machine learning with AI and cognitive technologies can make it even more effective in processing large volumes of information.

Uses

Financial services: Banks and other businesses in the financial industry use machine learning technology for two key purposes: to identify important insights in data, and prevent fraud. The insights can identify investment opportunities, or help investors know when to trade. Data mining can also identify clients with high-risk profiles, or use cyber-surveillance to pinpoint warning signs of fraud.

Health care: Machine learning is a fast-growing trend in the health care industry, thanks to the advent of wearable devices and sensors that can use data to assess a patient's health in real time. The technology can also help medical experts analyse data to identify trends or red flags that may lead to improved diagnoses and treatment.

Oil and gas: Finding new energy sources. Analysing minerals in the ground. Predicting refinery sensor failure. Streamlining oil distribution to make it more efficient and cost-effective. The number of machine learning use cases for this industry is vast – and still expanding.
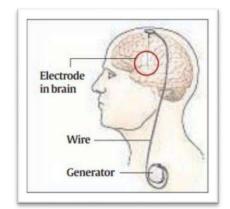
Government: Government agencies such as public safety and utilities have a particular need for machine learning since they have multiple sources of data that can be mined for insights. Analysing sensor data, for example, identifies ways to increase efficiency and save money. Machine learning can also help detect fraud and minimize identity theft.

Retail: Websites recommending items you might like based on previous purchases are using machine learning to analyse your buying history. Retailers rely on machine learning to capture data, analyse it and use it to personalize a shopping experience, implement a marketing campaign, price optimization, merchandise supply planning, and for customer insights.

Transportation: Analysing data to identify patterns and trends is key to the transportation industry, which relies on making routes more efficient and predicting potential problems to increase profitability. The data analysis and modelling aspects of machine learning are important tools to delivery companies, public transportation and other transportation organizations.

DEEP BRAIN STIMULATION

o Physicians at the University of California, San Francisco (UCSF) have successfully treated a patient with severe depression by recognising and tapping into the brain circuits linked with depressive brain patterns. The physicians have tried to reset these patterns, which they have said is the equivalent of using a pacemaker for the heart.

o The work, which represents a landmark in the use of neuroscience to treat psychiatric disorders, has been published in the journal **Nature Medicine**.

o The doctors used an existing technique called **deep brain stimulation (DBS),** customising it for this patient's case.

o DBS is a **surgical procedure** in which **electrodes are implanted into certain brain areas**. These electrodes, or leads, generate electrical impulses that control abnormal brain activity.

o The electrical impulses can also adjust for the chemical imbalances within the brain that cause various conditions.

o A DBS system has three components (see illustration):

- **The electrode, or lead**. This is a thin, insulated wire inserted through a small opening in the skull and implanted into a specific brain area.

- **The extension wire**. This too is insulated, and is passed under the skin of the head, neck and shoulder, connecting the electrode to the third component of the system.

- **The internal pulse generator (IPG)** is the third component. It is usually implanted under the skin in the upper chest, according to the AANS.

o Conditions that are traditionally treated using DBS include dystonia, epilepsy, essential tumour, obsessive-compulsive disorder and Parkinson's disease.

o In treating depression, however, previous clinical trials with DBS has shown limited success because most devices are only able to deliver constant electrical stimulation to one area of the brain.

o During this treatment, UCSF physicians customised a new DBS device, which would stimulate the brain whenever it recognised the depressive pattern. Additionally, the team of physicians had also found a neural biomarker that indicated the onset of symptoms. Using the customised DBS device, they were able to stimulate a different area of the brain, which in turn created immediate therapy for the brain.

FRAGILE X SYNDROME

o Fragile X syndrome (FXS) is a **genetic disorder**. FXS is caused by changes in a gene that scientists called **FMR1 gene** when it was first discovered.

o The FMR1 gene usually makes a protein called **FMRP.** FMRP is needed for brain development.

o People who have FXS do not make this protein. People who have other fragile X-associated disorders have changes in their FMR1 gene but usually make some of the protein.

o FXS **affects both males and females**. However, females often have milder symptoms than males. The exact number of people who have FXS is unknown, but a review of research studies estimated that about 1 in 7,000 males about 1 in 11,000 females have been diagnosed with FXS.

Signs that a child might have FXS include:

o Developmental delays (not sitting, walking, or talking at the same time as other children the same age);

o Learning disabilities (trouble learning new skills); and

o Social and behavior problems (such as not making eye contact, anxiety, trouble paying attention, hand flapping, acting and speaking without thinking, and being very active).

o Males who have FXS usually have some degree of intellectual disability that can range from mild to severe. Females with FXS can have normal intelligence or some degree of intellectual disability. Autism spectrum disorder (ASD) also occur more frequently in people with FXS.

o FXS can be diagnosed by **testing a person's DNA from a blood test**. A doctor or genetic counselor can order the test. Testing also can be done to find changes in the FMR1 gene that can lead to fragile X-associated disorders.

o A diagnosis of FXS can be helpful to the family because it can provide a reason for a child's intellectual disabilities and behavior problems.

o This allows the family and other caregivers to learn more about the disorder and manage care so that the child can reach his or her full potential.

DIABETES

o Diabetes is a disease that occurs when your blood glucose, also called blood sugar, is too high.

o Blood glucose is **your main source of energy and comes from the food you eat**.

o Insulin, **a hormone made by the pancreas**, **helps glucose from food get into your cells to be used for energy**. Sometimes your body doesn't make enough—or any—insulin or doesn't use insulin well. Glucose then stays in your blood and doesn't reach your cells.

o Over time, having too much glucose in your blood can cause health problems. Although diabetes has no cure, you can take steps to manage your diabetes and stay healthy.

o Sometimes people call diabetes "a touch of sugar" or "borderline diabetes." These terms suggest that someone doesn't really have diabetes or has a less serious case, but every case of diabetes is serious.

What are the different types of diabetes?

o **Type 1 diabetes**: If you have type 1 diabetes, your body does not make insulin. Your immune system attacks and destroys the cells in your pancreas that make insulin. Type 1 diabetes is u**sually diagnosed in children and young adults,** although it can appear at any age. People with type 1 diabetes need to take insulin every day to stay alive.

o **Type 2 diabetes**: If you have type 2 diabetes, your **body does not make or use insulin well**. You can develop type 2 diabetes at any age, even during childhood. However, this type of diabetes o**ccurs most often in middle-aged and older people**. Type 2 is the most common type of diabetes.

o **Gestational diabetes**: Gestational diabetes **develops in some women when they are pregnant**. Most of the time, this type of diabetes goes away after the baby is born. However, if you've had gestational diabetes, you have a greater chance of developing type 2 diabetes later in life. Sometimes diabetes diagnosed during pregnancy is actually type 2 diabetes.

Other types of diabetes: Less common types include monogenic diabetes, which is an inherited form of diabetes, and cystic fibrosis-related diabetes.

Health problems : Over time, high blood glucose leads to problems such as**:-** heart disease, stroke. kidney disease, eye problems, dental disease, nerve damage, foot problems.

INDIAN POLITY

(Constitution; Polity and Governance)

NEED FOR POLICE REFORMS

Political will is an essential component in bringing about any major reform in the Indian police force.

While improvements in pay scale and promotions are necessary aspects of police reforms, little has been spoken about reforms needed at the psychological level. Why do citizens fear going to a police station or dealing with the lower ranks of the police force?

The Existing Policing System in India

o 'Public order' and 'Police' figure in **the State list in the VII th schedule** of our constitution.

o The Police Act, 1861 is still the basic instrument governing the functioning of the Indian police.

o The Director General and Inspector General of Police is the head of a state police.

o States are divided into districts and a Superintendent of Police heads the district police.

Issues in Policing

o NHRC has made it very clear that "with every passing year, the evidence before the Commission mounts that there must be major police reforms in the country if the human rights situation is to be improved"

o Political authorities have a stronghold over police this nexus affects the credibility of the police too.

o Most of the times the State Police Training Schools where a large majority of policemen undergo training are ill equipped, starved of funds and staffed by unwilling instructors.

o It is general observation that the intelligence gathering efforts are devoted mainly to gathering information about major law and order problems, while adequate attention is not paid to collection of intelligence relating to commission of crimes.

o Since the police is the primary agency of the criminal justice system which protects human rights, it is essential to sensitise police personnel to gender issues.

o Gender disparity is another issue as in the criminal justice system, the representation of women is low in all wings and especially the police.

Various expert Bodies on Police Reforms

o National Police Commission (1977-81)

o Ribeiro Committee (1988)

o Padmanabhaiah Committee (2000)

o Malimath Committee (2002-03)

o Supreme Court Directives on Prakash Singh vs Union of India (2006)

o Second Administrative Reform Commission recommendation on Police Reform

Supreme Court directives in Prakash Singh case

o Set up a **Police Establishment Board (PEB)** to decide transfers, postings, promotions and other service related matters of police officers of and below the rank of Deputy Superintendent of Police and make recommendations on postings and transfers above the rank of Deputy Superintendent of Police.

o Constitute a **State Security Commission (SSC)** to provide policy guidelines and ensure that the state government does not exercise unwarranted influence or pressure on the police.

o Ensure that the DGP is appointed through merit based transparent process and secure a minimum tenure of two years.

o Ensure that other police officers on operational duties (including Superintendents of Police in-charge of a district and Station House Officers in-charge of a police station) are also provided a minimum tenure of two years.

- Separate the investigation and law and order functions of the police.
- Set up a **Police Complaints Authority (PCA)** at state level to inquire into public complaints against police officers of and above the rank of Deputy Superintendent of Police in cases of serious misconduct, including custodial death, grievous hurt, or rape in police custody and at district levels to inquire into public complaints against the police personnel below the rank of Deputy Superintendent of Police in cases of serious misconduct.
- Set up a **National Security Commission (NSC)** at the union level to prepare a panel for selection and placement of Chiefs of the Central Police Organisations (CPO) with a minimum tenure of two years.

Suggestions to improve Policing System in India

- **Community Policing can be promoted**- "Community Policing is an area specific proactive process of working with the community for prevention and detection of crime, maintenance of public order and resolving local conflicts and with the objective of providing a better quality of life and sense of security".
- **SMART Policing should be focused upon**- SMART i.e. Strict and Sensitive, Modern and Mobile, Alert and Accountable, Reliable and responsive, Tech savvy and Trained.
- **Police Training**- Training should focus on bringing in attitudinal change in police so that they become more responsive and sensitive to citizens' needs.
- **Gender Parity in Police force**- The 2nd Administrative Reform Commission recommended that the representation of women in police at all levels should be increased through affirmative action so that they constitute about 33% of the police.
- **Improvement in Forensic Infrastructure** -There is need to expand the forensic facilities and upgrade them technologically. Every district or a group of districts having 30 to 40 lakhs population should have a forensic laboratory.
- **Improvement in Intelligence gathering**- The intelligence gathering machinery in the field needs to be strengthened and at the same time, made more accountable. Human intelligence should be combined with information derived from diverse sources with the focus on increased use of technology.

✚ KARBI PEACE DEAL

- A tripartite agreement among five insurgent groups of Assam, the Centre and the State government was signed on to end years of violence in the **Karbi Anglong region**.
- The insurgent groups which signed the peace accord include **Karbi Longri North Cachar Hills Liberation Front**, **People's Democratic Council of Karbi Longri, United People's Liberation Army** and **Karbi People's Liberation Tigers factions.**
- Under the peace accord, more than 1,000 armed cadres have abjured violence and joined the mainstream. The agreement provides for their rehabilitation.
- The Centre will make available a special development package of ₹1,000 crore over the next five years, for the Assam government to undertake specific projects for the development of Karbi areas.

- The memorandum of settlement would ensure **greater devolution of autonomy to the Karbi Anglong Autonomous Council (KAAC)**, protection of identity, language and culture of the Karbi people and focused development of the Council area, without affecting the territorial and administrative integrity of Assam, said the government.
- Under the agreement, the Assam government will set up a **Karbi Welfare Council** for focused development of Karbi people living outside the KAAC area. The consolidated fund of the State will be augmented to supplement the resources of KAAC.

o The Karbi Anglong Autonomous Council (KAAC) is an autonomous district council, protected under the Sixth Schedule of the Indian Constitution.

About the Karbi Anglong Crisis

o Located in central Assam, Karbi Anglong is the state's largest district and a melting pot of ethnicities and tribal groups — Karbi, Dimasa, Bodo, Kuki, Hmar, Tiwa, Garo, Man (Tai speakers), Rengma Naga. Its diversity also generated different outfits and fuelled an insurgency that did not allow the region to develop.

o The Karbis are a major ethnic group of Assam, dotted by several factions and splinters. The history of the Karbi group has been marked by killings, ethnic violence, abductions and taxation since the late 1980s.

o Insurgent groups of Karbi Anglong district like People's Democratic Council of Karbi Longri (PDCK), Karbi Longri NC Hills Liberation Front (KLNLF), etc. originated from the core demand of forming a separate state.

o Some of the other demands of the militant groups are:

- Inclusion of some areas into Karbi Anglong Autonomous Council (KAAC),
- Reservation of seats for Scheduled Tribes,
- More powers to the council,
- Inclusion of Karbi language in the Eighth Schedule,
- Financial package of Rs 1,500 crore.

JUDICIAL ACTIVISM

o Judicial activism is a philosophy of judicial decision-making whereby judges allow their personal views about public policy, among other factors, to guide their decisions.

o The judicial activism was evolved through the process of judicial review which can be pursued from the **unwritten constitution of Britain during the period of Stuart (1603-1688).**

o In the year **1610,** the **power of Judicial Review was acknowledged for the first time in Britain** through the activism of Justice Coke.

o **Judicial activism in India implies the authority of the Supreme Court and the High Courts,** but not the subordinate courts, **to declare the regulations unconstitutional and void** if they breach or if the legislation is incompatible with one or more of the constitutional clauses.

Judicial Activism Methods

There are various methods of judicial activism that are followed in India. They are:

o Judicial review (power of the judiciary to interpret the constitution and to declare any such law or order of the legislature and executive void, if it finds them in conflict with the Constitution)

o PIL (The person filing the petition must not have any personal interest in the litigation, this petition is accepted by the court only if there is an interest of large public involved; the aggrieved party does not file the petition).

o Constitutional interpretation

o Access of international statute for ensuring constitutional rights

o Supervisory power of the higher courts on the lower courts

Significance of Judicial Activism

o It is an effective tool for **upholding citizens' rights and implementing constitutional principles** when the executive and legislature fails to do so.

o Citizens have the judiciary as the last hope for protecting their rights when all other doors are closed. The Indian judiciary has been considered as the guardian and protector of the Indian Constitution.

o There are provisions in the constitution itself for the judiciary to adopt a proactive role. **Article 13 read with Articles 32 and 226 of the Constitution** provides the power of judicial review to the higher judiciary to declare any executive, legislative or administrative action void if it is in contravention with the Constitution.

o According to experts, the shift from locus standi to public interest litigation made the judicial process more participatory and democratic.
o Judicial activism counters the opinion that the judiciary is a mere spectator.

Judicial Activism Examples
o It all started when the **Allahabad High Court rejected the candidature of Indira Gandhi in 1973**.
o In **1979**, the Supreme Court of India ruled that undertrials in Bihar had already served time for more period than they would have, had they been convicted.
o **Golaknath case**: The questions, in this case, were whether the amendment is a law; and whether Fundamental Rights can be amended or not. SC contented that Fundamental Rights are not amenable to the Parliamentary restriction as stated in Article 13 and that to amend the Fundamental rights a new Constituent Assembly would be required. Also stated that **Article 368 gives the procedure to amend the Constitution** but does not confer on Parliament the power to amend the Constitution.
o **Kesavananda Bharati case:** This judgement **defined the basic structure of the Constitution**. The SC held that although no part of the Constitution, including Fundamental Rights, was beyond the Parliament's amending power, the "basic structure of the Constitution could not be abrogated even by a constitutional amendment." This is the basis in Indian law in which the judiciary can strike down an amendment passed by Parliament that is in conflict with the basic structure of the Constitution.
o In the 2G scam, the SC cancelled 122 telecom licenses and spectrum allocated to 8 telecom companies on the grounds that the process of allocation was flawed.

Pros associated with Judicial Activism India
o Judicial Activism **sets out a system of balances and controls** to the other branches of the government. It accentuates required innovation by way of a solution.
o In cases where the law fails to establish a balance, Judicial Activism allows judges to use their personal judgment.
o It places trust in judges and provides insights into the issues. The oath of bringing justice to the country by the Judges does not change with judicial activism. It only allows judges to do what they see fit within rationalised limits. Thus showing the instilled trust placed in the justice system and its judgments.
o Judicial Activism helps the judiciary to keep a check on the misuse of power by the state government when it interferes and harms the residents.
o In the issue of majority, It helps address problems hastily where the legislature gets stuck in taking decisions.

Cons Associated with Judicial Activism
o Firstly, when it surpasses its power to stop and misuse or abuse of power by the government. In a way, it limits the functioning of the government.
o It clearly violates the limit of power set to be exercised by the constitution when it overrides any existing law.
o The judicial opinions of the judges once taken for any case becomes the standard for ruling other cases.
o Judicial activism can harm the public at large as the judgment may be influenced by personal or selfish motives.
o Repeated interventions of courts can diminish the faith of the people in the integrity, quality, and efficiency of the government.

COLLEGIUM RUSH

The Supreme Court Collegium, led by Chief Justice of India (CJI) N.V. Ramana, is proceeding with staggering speed to fill the vacancies and strengthen the judiciary as seen in a latest slew of recommendations, which include eight new Chief Justices to High Courts, the transfer of five High Court Chief Justices and the shuffling of 28 High Court judges across the country.

The past one month has seen the Collegium recommend over 100 judicial appointments, several transfers and elevations of judges, advocates and Chief Justices. The Collegium began its work on a historic note with the successful

recommendation of nine new judges to the Supreme Court that were quickly approved by the government. Among the nine was Justice B.V. Nagarathna, who may become India's first woman CJI in 2027. This accomplishment was followed by the recommendation of 68 names to various High Courts, significantly, in one go.

COLLEGIUM

o It is the system of appointment and transfer of judges that has evolved through judgments of the SC, and not by an Act of Parliament or by a provision of the Constitution.

EVOLUTION OF THE SYSTEM:

First Judges Case (1981):

o It declared that the "primacy" of the Chief Justice of India (CJI)s recommendation on judicial appointments and transfers can be refused for "cogent reasons."

o The ruling gave the Executive primacy over the Judiciary in judicial appointments for the next 12 years.

Second Judges Case (1993):

o SC introduced the Collegium system, holding that "consultation" really meant "concurrence".

o It added that it was not the CJI's individual opinion, but an institutional opinion formed in consultation with the two senior-most judges in the SC.

Third Judges Case (1998):

o SC on President's reference expanded the Collegium to a five-member body, comprising the CJI and four of his senior-most colleagues.

o The SC collegium is headed by the CJI and comprises four other senior most judges of the court.

o A HC collegium is led by its Chief Justice and four other senior most judges of that court.

o Names recommended for appointment by a HC collegium reaches the government only after approval by the CJI and the SC collegium.

o Judges of the higher judiciary are appointed only through the collegium system and the government has a role only after names have been decided by the collegium.

o The government's role is limited to getting an inquiry conducted by the Intelligence Bureau (IB) if a lawyer is to be elevated as a judge in a High Court or the Supreme Court.

o Intelligence Bureau (IB): It is a reputed and established intelligence agency. It is authoritatively controlled by the Ministry of Home Affairs.

o It can also raise objections and seek clarifications regarding the collegium's choices, but if the collegium reiterates the same names, the government is bound, under Constitution Bench judgments, to appoint them as judges.

✚ TRIBUNALS

Court asks Centre to make appointments within two weeks to the tribunals, which are facing severe crunch of presiding officers.

The Bench comprising Justices D.Y. Chandrachud and L. Nageswara Rao, said tribunals across the country were on the verge of collapse. Cases were being adjourned by a year. Many tribunals operated with just one member as no appointments had been made for months, if not years.

MORE ABOUT TRIBUNALS

ADMINISTRATIVE TRIBUNALS

o The enactment of **Administrative Tribunals Act in 1985** opened a new chapter in the sphere of administering justice to the aggrieved government servants.

o Administrative Tribunals Act owes its origin to **Article 323-A of the Constitution** which empowers Central Government to set-up by an Act of Parliament, Administrative Tribunals for adjudication of disputes and complaints

with respect to recruitment and conditions of service of persons appointed to the public service and posts in connection with the affairs of the Union and the States.

o The Act provides for establishment of Central Administrative Tribunal (CAT) and the State Administrative Tribunals. The CAT was set-up on 1 November 1985. Today, it has 17 regular benches, 15 of which operate at the principal seats of High Courts and the remaining two at Jaipur and Lucknow.

o These Benches also hold circuit sittings at other seats of High Courts. In brief, the tribunal consists of a Chairman, Vice-Chairman and Members. The Members are drawn, both from judicial as well as administrative streams so as to give the Tribunal the benefit of expertise both in legal and administrative spheres.

o The Administrative Tribunals exercise jurisdiction only in relation to the service matters of the litigants covered by the Act. The procedural simplicity of the Act can be appreciated from the fact that the aggrieved person can also appear before it personally. The Government can present its case through its departmental officers or legal practitioners.

o Thus, the objective of the Tribunal is to provide for speedy and inexpensive justice to the litigants.

o As a result of the judgement in 1997 of the Supreme Court, the appeals against the orders of an Administrative Tribunal shall lie before the **Division Bench of the concerned High Court**.

OTHER TRIBUNALS

o **Article 323B in the Constitution of India**: The appropriate Legislature may, by law, provide for the adjudication or trial by tribunals of any disputes, complaints, or offences with respect to all or any of the matters specified to which such Legislature has power to make laws.

o The matters referred are the following, namely:

(a) levy, assessment, collection and enforcement of any tax;

(b) foreign exchange, import and export across customs frontiers;

(c) industrial and labour disputes;

(d) land reforms by way of acquisition by the State of any estate as defined in Article 31A or of any rights therein or the extinguishment or modification of any such rights or by way of ceiling on agricultural land or in any other way;

(e) ceiling on urban property;

(f) elections to either House of Parliament or the House or either House of the Legislature of a State, but excluding the matters referred to in Article 329 and Article 329A;

(g) production, procurement, supply and distribution of foodstuffs (including edible oilseeds and oils) and such other goods as the President may, by public notification, declare to be essential goods for the purpose of this article and control of prices of such goods;

(h) offences against laws with respect to any of the matters specified in sub clause (a) to (g) and fees in respect of any of those matters;

(i) any matter incidental to any of the matters specified in sub clause (a) to (h).

NCLT AND ITAT

The government has appointed 31 people as judicial, technical and accountant members at the NCLT and the ITAT, amid the Supreme Court flagging concerns about vacancies in various tribunals.

The National Company Law Tribunal (NCLT) deals with matters mainly related to companies law and the insolvency law while the Income Tax Appellate Tribunal (ITAT) deals with income tax matters.

NCLT

o National Company Law Tribunal is the outcome of the **Eradi Committee**. NCLT was intended to be introduced in the Indian legal system in 2002 under the framework of Companies Act, 1956 however, due to the litigation with respect to the constitutional validity of NCLT which went for over 10 years, therefore, it was notified under the Companies Act, 2013.

o It is a **quasi-judicial authority** incorporated for dealing with corporate disputes that are of civil nature arising under the Companies Act.

o NCLT **works on the lines of a normal Court of law** in the country and is obliged to fairly and without any biases determine the facts of each case and decide with matters in accordance with principles of natural justice and in the continuance of such decisions, offer conclusions from decisions in the form of orders.

o The orders so formed by NCLT could assist in **resolving a situation, rectifying a wrong done by any corporate or levying penalties and costs and might alter the rights, obligations, duties or privileges** of the concerned parties. The Tribunal isn't required to adhere to the severe rules with respect to appreciation of any evidence or procedural law.

MAJOR FUNCTIONS OF NCLT

Registration of Companies

o The new Companies Act, 2013 has enabled questioning the legitimacy of companies because of specific procedural errors during incorporation and registration.

o NCLT has been empowered in taking several steps, from cancelling the registration of a company to dissolving any company.

o The Tribunal could even render the liability or charge of members to unlimited.

o With this approach, NCLT can de-register any company in specific situations when the registration certificate has been obtained by wrongful manner or illegal means under section 7(7) of the Companies Act, 2013.

Transfer of shares

o NCLT is also empowered to hear grievances of rejection of companies in transferring shares and securities and under section 58- 59 of the Act which were at the outset were under the purview of the Company Law Board.

o Going back to Companies Act, 1956 the solution available for rejection of transmission or transfer were limited only to the shares and debentures of a company but as of now the prospect has been raised under the Companies Act, 2013 and the now covers all the securities which are issued by any company.

Deposits

o The Chapter V of the Act deals with deposits and was notified several times in 2014 and Company Law Board was the prime authority for taking up the cases under said chapter. Now, such powers have been vested with NCLT.

o The provisions with respect to the deposits under the Companies Act, 2013 were notified prior to the inception of the NCLT. Unhappy depositors now have a remedy of class actions suits for seeking remedy for the omissions and acts on part of the company that impacts their rights as depositors.

Power to investigate

o As per the provision of the Companies Act, 2013 investigation about the affairs of the company could be ordered with the help of an application of 100 members. Moreover, if a person who isn't related to a company and is able to persuade NCLT about the presence of conditions for ordering an investigation then NCLT has the power for ordering an investigation.

o An investigation which is ordered by the NCLT could be conducted within India or anywhere in the world. The provisions are drafted for offering and seeking help from the courts and investigation agencies and of foreign countries.

Freezing assets of a company

The NCLT isn't just empowered to freezing the assets of a company for using them at a later stage when such company comes under investigation or scrutiny, such investigation could also be ordered on the request of others in specific conditions.

Converting a public limited company into a private limited company

o Sections 13-18 of the Companies Act, 2013 read with rules control the conversion of a Public limited company into the Private limited company, such conversion needs an erstwhile confirmation from the NCLT.

o NCLT has the power under section 459 of the Act, for imposing specific conditions or restrictions and might subject granting approvals to such conditions.

Income Tax Appellate Tribunal

o **Establishment:** Income Tax Appellate Tribunal (ITAT) is a **quasi-judicial institution** set up in 1941under section 5A of the Income Tax Act, 1922.

o Initially, it had three Benches at Delhi, Kolkata (Calcutta) and Mumbai (Bombay).

o But presently ITAT has 63 Benches at 27 different stations covering almost all the cities having a seat of the High Court.

o ITAT is referred to as **'Mother Tribunal' being the oldest Tribunal in the country**.

o **Functions:** It deals with appeals under the Direct Taxes Acts namely, the Income-tax Act, 1961.

o The orders passed by the ITAT are final, an appeal lies to the High Court only if a substantial question of law arises for determination.

✚ COOPERATIVE FEDERALISM

o The seeds of Cooperative federalism can be traced right from the **Regulating Act of 1773** which set up a system whereby the British Government supervised the work of the East India Company but did not take power for itself.

o The **Government of India Act 1919 provided for a federal India**, however superficial, by envisaging a dual form of government called 'dyarchy.' The same was sought to be achieved by the Government of India Act, 1935.

o From 1946 to 1950, the leaders of India's Freedom Movement and the founding fathers of the Constitution had the task of drafting the Constitution. The members of the Constituent Assembly aimed to build a united polity out of a highly fragmented and segmented society, which they attempted through strengthening the "Union" or federal order, by shifting residuary powers to it.

o Many politicians thought that only a strong center could effectively drive economic development and ensure equity. Hence the trend generally was toward ever more centralization under the Congress Party from independence to the 1980s. During the 1980s, however, Union-state relations became more rancorous, the Congress party began to decline, and a coalition government, the National Front, assumed power in New Delhi as a result of the 1989 elections in part because centralized federalism driven by a monopoly party for some 40 years had fallen far short to achieve objectives outlined in the Constitution. Since 1989, coalition governments at the Centre, proliferating regional and state parties across the country.

o **Redistribution of responsibilities through devolution of powers from the Union to the states and from the states to the Panchayats** and allocation of financial resources to the state domain is facilitating the attainment of the objectives of the Constitution: unity, social justice, and democracy. All this indicates steps in the direction of cooperative federalism.

Indian Constitution and Cooperative Federalism

o Cooperative federalism is the horizontal relationship between union and states and shows neither is above the other. Indian constitution has incorporated instruments to ensure co-operation between the center and states to ensure that cooperation is necessary for the proper growth of the country. Therefore, few are the listed provisions in the Indian constitution which depict the core relationship between center and state.

7th schedule

o It demarcates central, state, and concurrent lists based on the **principle of subsidiarity**. Residuary power has been kept with the center.

o **Article 249[5]** provides authority to the parliament to make on those subjects which are under state jurisdiction if the resolution passes in-state council with a two-thirds majority.

All India Services

o An integrated judicial system has been established to enforce both states as well as central laws. All India services provide another uniting factor in cooperative federalism. This provision is enshrined in article 312 of the Indian constitution.

Inter-state Council

o **Under article 263** of the constitution has been established to discuss and investigate the subject of common interest between the center and the states. In Dabur India Limited v. State of Uttar Pradesh, the Supreme Court suggested the setting up of a council under Article 263 to discuss and sort out problems of central state taxation.

Full Faith and Credit Clause

o Article 261 of the Constitution of India provides that full faith and credit shall be given throughout the territory of India to all the public acts, records, and judicial proceedings of the Union and every State. This is a step to promote cooperation and faith between the center and the states.

Zonal council

o These are statutory bodies established under the State reorganization act of 1956 to ensure coordination. It provided for 5 zonal councils, one for each north, south, east, west, central. The northeastern council has been created under a separate act.

NITI AAYOG

o NITI AAYOG or the National Institution for Transforming India is a Government of India policy think-tank established to replace the Planning Commission.

o The main emphasis of NITI AAYOG is to bring the effect over center and state relationship.

o NITI Aayog provides relevant strategic technical advice at the center and state levels, dissemination of best practices within the country as well as from other nations, infusion of new policy ideas, it ensures that India is an active player on the global commons, etc.

o In this way, it will function in close cooperation, consultation, and coordination with the Ministries of the Central Government and State governments. It will provide critical directional and strategic input to the development process, focusing on deliverables and outcomes.

GST

o GST is a single tax on the supply of goods and services, right from the manufacturer to the consumer. GST was passed by the 101st amendment, 2016 and it came into effect on April 1, 2017. The main agenda behind the whole concept of GST is 'ONE TAX ONE NATION'.

o The free movement of goods and services will give a fillip to employment opportunities and give consumers a wider choice and better prices. This economic integration will not only boost economic growth but also bind the nation better. It is an idea whose time has come and would not have materialized but for the spirit of co-operation displayed by the Centre and the States.

Way Forward

o To make collaborative federalism work, more institutional reforms are required to eliminate the possibility of manipulation by ad hoc political bargaining or by welfare-reducing strategic behavior by the governments at different levels.

o In an era where the party system is fragmented along federal lines, the need is still felt to include State parties in federal coalitions, even when technically not necessary. The way alliance partners are treated thus becomes an important element in federal functioning.

o State bills should be taken on a priority list for the assent of the President as the speedy procedure of this will foster more cooperation among state and center.

o There should be proper enforceability of decisions in a matter related to water disputes to avoid long-lasting conflicts among states.

🔸 MAKING POLITICAL PARTIES DEMOCRATIC

o A **political party is an organised group of citizens who hold common views on governance** and act as a political unit that seeks to obtain control of government with a view to further the agenda and policy they profess.

o They are **indispensable links between the people and the representative machinery of government**.

o Political parties maintain a **continuous connection between the people and those who represent them** either in government or in the opposition.

o Political parties have extra-legal growth in almost every democratic country.

The American Constitution does not presume the existence of political parties. In Britain too, political parties are still unknown to the law. Nonetheless, Sir Ivor Jennings, in The British Constitution, opined that "a realistic survey of the British Constitution today must begin and end with parties and discuss them at length in the middle". Similarly, political parties in India are extra-constitutional, but they are the breathing air of the political system.

The German model

The Basic Law of the Federal Republic of Germany (1949) **gives constitutional status to political parties**.

Article 21 of the Basic Law deals with their status, rights, duties and functions. It provides:

1. Political parties shall participate in the formation of the political will of the people. They may be freely established. Their **internal organisation must conform to democratic principles**. They must publicly account for their assets and for the sources and use of their funds.
2. Parties that, by reason of their aims or the behaviour of their adherents, seek to undermine or abolish the free democratic basic order or to endanger the existence of the Federal Republic of Germany shall be unconstitutional.

The German model of constitutionalising political parties is more desirable for India than the U.S. and the U.K. models. **Section 29A(5) of the Representation of the People Act, 1951** is the only major statutory provision dealing with political parties in India. It orders that a political party shall bear true faith and allegiance to the Constitution of India as by law established, and to the principles of socialism, secularism and democracy, and would uphold the sovereignty, unity and integrity of India.

Political parties in developed nations maintain high levels of internal democracy.

o In the U.K., the Conservative Party has the National Conservative Convention as its top body. It has a Central Council and an Executive Committee. The Central Council elects its President, a Chairman and Vice Chairmen at its annual meeting. It also elects an Executive Committee which meets once a month.

o In the U.S., both the Democratic and the Republican Party have the National Committee as their top decision-making body. The National Committee plays an important role in the presidential election and agenda setting.

The **Indian Constitution** is the one of the longest Constitutions in the world. It even elaborately deals with the co-operative societies. The right to form co-operative societies is a fundamental right under Article 19 (1)(c), but the right to form political parties is not. It is astonishing that such a meticulous Constitution overlooked political parties, the vital players in the political system, for constitutional regulation.

o Most of the parties are openly caste- or religious-based. Their finances are dubious and opaque. Many parties are the are family fiefdoms.

o There are no periodical in-party elections in Indian parties except in a few like the CPI(M).

o Political parties are the agents of democracy and safety valves in the political system. They desperately need reform. Hence, it is high time to constitutionalise political parties to ensure in-party democracy, to impart transparency in their finances, and to de-communalise them.

NALSA

o **Article 39** A of the Constitution of India provides for free legal aid to the poor and weaker sections of the society, to promote justice on the basis of equal opportunity. **Article 14 and Article 22 (1),** obligate the State to ensure equality before the law.

o Constituted under the **Legal Services Authorities Act of 1987**, the National Legal Services Authority of India was established to create a nationwide network uniform in nature that would provide competent legal services to the weaker sections of the society at no cost. The Authority came into force only in November 1995.

o Another function of NALSA is to **organize Lok Adalats** for a quick resolution of the cases.

o The **Patron-in-chief is the Chief Justice of India**.

o The **Executive Chairman of the Authority is the second senior-most judge of the SC.**

o At the **state level,** the State Legal Services Authority has been constituted to give effect to the policies of NALSA at the state level, and also to conduct Lok Adalats in the states. NALSA provides funds for the State Legal Services Authority for the implementation of the various legal aids and programmes.

o At the **district level** also, the District Legal Services Authority has been established.

o **Taluk Legal Services Committees** are also constituted for each of the Taluk or Mandal or for a group of Taluk or Mandals to coordinate the activities of legal services in the Taluk and to organise Lok Adalats. Every Taluk Legal Services Committee is headed by a **senior Civil Judge** operating within the jurisdiction of the Committee who is its ex-officio Chairman.

Objective: The prime objective of NALSA is speedy disposal of cases and reducing the burden of the judiciary. Other objectives can be listed as follows:

o Spreading Legal Awareness;

o Organizing Lok Adalats;

o Promoting dispute settlements;

o Providing the victims of crime with compensation.

LOK ADALAT

o The term 'Lok Adalat' means **'People's Court'** and is based on Gandhian principles.

o As per the Supreme Court, it is an old form of adjudicating system prevailed in ancient India and its validity has not been taken away even in the modern days too.

o It is one of the components of the **Alternative Dispute Resolution (ADR) system** and delivers informal, cheap and expeditious justice to the common people.

o The first **Lok Adalat camp was organised in Gujarat in 1982** as a voluntary and conciliatory agency without any statutory backing for its decisions.

o In view of its growing popularity over time, it was given **statutory status under the Legal Services Authorities Act, 1987.** The Act makes the provisions relating to the organisation and functioning of the Lok Adalats.

Organisation

o The State/District Legal Services Authority or the Supreme Court/High Court/Taluk Legal Services Committee may organise Lok Adalats at such intervals and places and for exercising such jurisdiction and for such areas as it thinks fit.

o Every Lok Adalat organised for an area shall consist of such number of serving or retired judicial officers and other persons of the area as may be specified by the agency organising.

o Generally, a Lok Adalat consists of a **judicial officer as the chairman** and **a lawyer (advocate) and a social worker as members.**

o National Legal Services Authority (NALSA) along with other Legal Services Institutions conducts Lok Adalats.

Jurisdiction

o A Lok Adalat shall have jurisdiction to determine and to arrive at a compromise or settlement between the parties to a dispute in respect of:

▪ Any case pending before any court, or

▪ Any matter which is falling within the jurisdiction of any court and is not brought before such court.

▪ Any case pending before the court can be referred to the Lok Adalat for settlement if:

➢ Parties agree to settle the dispute in the Lok Adalat or one of the parties applies for referral of the case to the Lok Adalat or court is satisfied that the matter can be solved by a Lok Adalat.

➢ In the case of a pre-litigation dispute, the matter can be referred to the Lok Adalat on receipt of an application from any one of the parties to the dispute.

▪ Matters such as matrimonial/family disputes, criminal (compoundable offences) cases, land acquisition cases, labour disputes, workmen's compensation cases, bank recovery cases, etc. are being taken up in Lok Adalats.

o However, the Lok Adalat shall have no jurisdiction in respect of any case or matter relating to an offence not compoundable under any law. In other words, the offences which are **non-compoundable under any law** fall outside the purview of the Lok Adalat.

(***Note:*** *Non-Compoundable offenses are classified under CrPc. Non-Compoundable offenses are those offenses which are serious in nature.*)

Powers

o The Lok Adalat shall have the same powers as are vested in a **Civil Court** under the Code of Civil Procedure (1908).

o Further, a Lok Adalat shall have the requisite powers to specify its own procedure for the determination of any dispute coming before it.

o All proceedings before a Lok Adalat shall be deemed to be judicial proceedings within the meaning of the Indian Penal Code (1860) and every Lok Adalat shall be deemed to be a Civil Court for the purpose of the Code of Criminal Procedure (1973).

o An award of a Lok Adalat shall be **deemed to be a decree of a Civil Court** or an order of any other court.

o **Every award made by a Lok Adalat shall be final and binding on all the parties to the dispute**. No appeal shall lie to any court against the award of the Lok Adalat.

Benefits

o There is **no court fee** and if court fee is already paid the amount will be refunded if the dispute is settled at Lok Adalat.

o There is **procedural flexibility and speedy trial** of the disputes. There is no strict application of procedural laws while assessing the claim by Lok Adalat.

o The **parties to the dispute can directly interact with the judge** through their counsel which is not possible in regular courts of law.

o The **award by the Lok Adalat is binding on the parties** and it has the status of a decree of a civil court and it is non-appealable, which does not cause the delay in the settlement of disputes finally.

ECONOMY
(Global and Indian)

✚ NATIONAL ASSET RECONSTRUCTION COMPANY LIMITED (NARCL)

Paving the way for a major clean-up of bad loans in the banking system, the Cabinet cleared a ₹30,600-crore guarantee programme for securities to be issued by the newly incorporated 'bad bank' for taking over and resolving non-performing assets (NPAs) amounting to ₹2 lakh crore.

The Reserve Bank of India is in the process of granting a licence for the National Asset Reconstruction Company Limited (NARCL), following which toxic assets worth ₹90,000 crore that banks have already fully provided for, will move to the NARCL.

What is a bad bank? Why was it needed?

o In every country, commercial banks accept deposits and extend loans. The **deposits are a bank's "liability"** because that is the money it has taken from a common man, and it will have to return that money when the depositor asks for it. Moreover, in the interim, it has to pay the depositor an interest rate on those deposits.

o In contrast, the **loans that banks give out are their "assets" because this is where the banks earn interest** and this is money that the borrower has to return to the bank.

o The whole business model is premised on the idea that a bank will earn more money from extending loans to borrowers than what it would have to pay back to the depositors.

o Imagine, then, a scenario where a bank finds a huge loan not being repaid because, say, the firm that took the loan has failed in its business and is not a position to pay back either the interest or the principal amount.

o Every bank can take a few such knocks. But what if such "bad loans" (or the loans that will not be paid back) rise alarmingly? In such a case, the bank could sink.

o Now imagine a scenario where several banks in an economy face high levels of bad loans and all at the same time. That will threaten the stability of the whole economy.

o In normal functioning, as the proportion of bad loans — they are typically calculated as a percentage of the total advances (loans) — rise, two things happen.

▪ **One,** the concerned bank becomes less profitable because it has to use some of its profits from other loans to make up for the loss on the bad loans.

▪ **Two,** it becomes more risk-averse. In other words, its officials hesitate from extending loans to business ventures that may remotely appear risky for the fear of aggravating an already high level of non-performing assets (or NPAs).

o From the taxpayer's perspective, the most worrisome fact was that an overwhelming proportion of NPAs was with the public sector banks, which were owned by the government and hence by the Indian public.

o To keep such PSBs in business, the government was forced to recapitalise them — that is, use taxpayers' money to improve the financial health of PSBs so that they could carry on with the business of lending and funding economic activity.

o But with each passing year, NPAs continued to mount — not helped by the fact that the economy itself started to lose its growth momentum since the start of 2017.

o It was argued by many that the government needs to create a bad bank — that is, an entity where all the bad loans from all the banks can be parked — thus, relieving the commercial banks of their "stressed assets" and allowing them to focus on resuming normal banking operations, especially lending.

o While commercial banks resume lending, the so-called bad bank, or a bank of bad loans, would try to sell these "assets" in the market.

How will the NARCL-IDRCL work?

o The NARCL will first purchase bad loans from banks. It will pay 15% of the agreed price in cash and the remaining 85% will be in the form of "Security Receipts". When the assets are sold , with the help of IDRCL, , the commercial banks will be paid back the rest.

o If the bad bank is unable to sell the bad loan, or has to sell it at a loss, then the government guarantee will be invoked and the difference between what the commercial bank was supposed to get and what the bad bank was able to raise will be paid from the Rs 30,600 crore that has been provided by the government.

TABLE 1

ASSET MANAGEMENT COMPANIES IN VARIOUS COUNTRIES

AMC	RTC	Danaharta	NAMA	AMCON
Country	US	Malaysia	Ireland	Nigeria
Date established	1989	1998	2009	2010
Ownership	State	State	51% private, 49% state	State
Official mandate	Resolve thrifts	Purchase, manage, and dispose of NPLs; receiver of two failed banks	Purchase, manage and dispose of NPLs	Purchase, manage and dispose of NPLs, recapitalise failed banks, and invest in equities
Life span	7 years	7 years	Anticipated to be 15 years	None specified
Recovery rate (face value)	87% (on assets only)	58%	~33% (end 2014)	N/A

Source: Kotak Institutional Equities Research

Will a bad bank resolve matters?

o **From the perspective of a commercial bank saddled with high NPA levels, it will help**. That's because such a bank will get rid of all its toxic assets, which were eating up its profits, in one quick move. When the recovery money is paid back, it will further improve the bank's position. Meanwhile, it can start lending again.

o **From the perspective of the government and the taxpayer, the situation is a little more muddled**. After all, whether it is recapitalising PSBs laden with bad loans or giving guarantees for security receipts, the money is coming from the taxpayers' pocket. While recapitalisation and such guarantees are often designated as "reforms", they are band aids at best. The only sustainable solution is to improve the lending operation in PSBs.

o **Lastly, the plan of bailing out commercial banks will collapse if the bad bank is unable to sell such impaired assets** in the market. If that happens, guess who will have to bail out the bad bank itself? Indeed, the taxpayer.

✚ NATIONAL MONETISATION PIPELINE

The government unveiled a four-year National Monetisation Pipeline (NMP) worth an estimated Rs 6 lakh crore. It aims to unlock value in brownfield projects by engaging the private sector, transferring to them revenue rights and not ownership in the projects, and using the funds so generated for infrastructure creation across the country.

The NMP has been announced to provide a clear framework for monetisation and give potential investors a ready list of assets to generate investment interest.

What is monetisation?

o In a monetisation transaction, the government is **basically transferring revenue rights to private parties** for a specified transaction period in return for upfront money, a revenue share, and commitment of investments in the assets.

o **Real estate investment trusts (REITs) and infrastructure investment trusts (InvITs),** for instance, are the key structures used to monetise assets in the roads and power sectors.

o These are also listed on stock exchanges, providing investors liquidity through secondary markets as well.

o While these are a structured financing vehicle, **other monetisation models on PPP (Public Private Partnership) basis include:** Operate Maintain Transfer (OMT), Toll Operate Transfer (TOT), and Operations, Maintenance & Development (OMD). OMT and TOT have been used in highways sector while OMD is being deployed in case of airports.

What is the government's plan?

o Roads, railways and power sector assets will comprise over 66% of the total estimated value of the assets to be monetised, with the remaining upcoming sectors including telecom, mining, aviation, ports, natural gas and petroleum product pipelines, warehouses and stadiums.
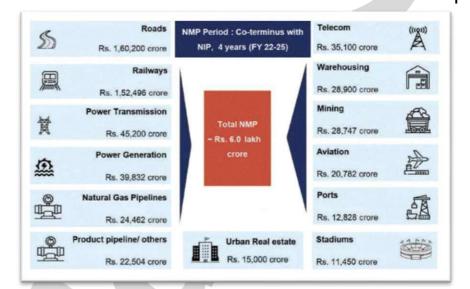
o In terms of annual phasing by value, 15% of assets with an indicative value of Rs 0.88 lakh crore are envisaged for rollout in the current financial year.

o The NMP will run co-terminus with the National Infrastructure Pipeline of Rs 100 lakh crore announced in December 2019. The estimated amount to be raised through monetisation is around 14% of the proposed outlay for the Centre of Rs 43 lakh crore under NIP.

What is the list of assets?

The assets on the NMP list include:

o 26,700 km of roads, railway stations, train operations and tracks,

o 2,8608 Ckt km worth of power transmission lines,

o 6 GW of hydroelectric and solar power assets,

o 2.86 lakh km of fibre assets and 14,917 towers in the telecom sector,

o 8,154 km of natural gas pipelines and 3,930 km of petroleum product pipelines.

o In the roads sector, the government has already monetised 1,400 km of national highways worth Rs 17,000 crore. Another five assets have been monetised through a PowerGrid InvIT raising Rs 7,700 crore.

o Also, 15 railway stations, 25 airports and the stake of central government in existing airports and 160 coal mining projects, 31 projects in 9 major ports, 210 lakh MT of warehousing assets, 2 national stadia and 2 regional centres, will be up for monetisation. Redevelopment of various government colonies and hospitality assets including ITDC hotels is expected to generate Rs 15,000 crore.

What are the challenges?

o Among the key challenges that may affect the NMP roadmap are: lack of identifiable revenues streams in various assets, level of capacity utilisation in gas and petroleum pipeline networks, dispute resolution mechanism, regulated tariffs in power sector assets, and low interest among investors in national highways below four lanes.

o While the government has tried to address these challenges in the NMP framework, execution of the plan remains key to its success.

o Structuring of monetisation transactions is being seen as key.

o The slow pace of privatisation in government companies and less-than-encouraging bids in the recently launched PPP initiative in trains, indicate that attracting private investors interest is not that easy.

o The MNP framework notes that other key impediments to the monetisation process are asset-specific challenges such as presence of an identifiable revenue stream. This is specifically relevant to the railway sector, which has seen limited PPP success as a mode of project delivery.

o Konkan Railway, for instance, has multiple stakeholders, including state governments, which own stake in the entity. Creating an effective monetisation transaction structure could be a bit challenging in this case.

NOBEL PRIZE 2021- ECONOMICS

Nobel Prize in Economics 2021

NEW INSIGHTS ABOUT THE LABOUR MARKET AND WORK ON NATURAL EXPERIMENTS

Nobel

David Card
Canada-US
Born in 1956

Joshua Angrist
Israel-US
Born in 1960

Guido Imbens
Netherlands-US
Born in 1963

Affiliation at the time of award:

University of California, Berkeley (US)

Massachusetts Institute of Technology (US)

Stanford University (US)

- "For his empirical contributions to labour economics"

- "For their methodological contributions to the analysis of causal relationships"

AFP

CORE SECTOR LOGS GROWTH

The key infrastructure sector spanning coal, crude oil, natural gas, refinery products, fertilisers, steel, cement and electricity grew an annual 11.6% in August, higher than the 9.9% in July. The sector had contracted by 6.9% in August last year. The expansion was also helped by a low base of last year.

Index of Core sector industries

o It is **released 12 days before the IIP** is released.

o The **objective** of the Index of Eight Core Industries is to **give an advance indication on the production performance of the industries** which **are of 'core' nature** before the release of the IIP.

o The ICI measures the individual and collective performances of the production in these eight core industries.

o The ICI is used by policymakers including the Ministry of Finance, other Ministries, and Departments.

o It is also used by banks for financing infrastructure projects and the Reserve Bank of India (RBI).

o To calculate the ICI, the components covered under the eight core sectors are mentioned in the table below:

▪ **Coal** – Coal Production excluding Coking coal.

▪ **Electricity** – Actual Electricity Generation of Thermal, Nuclear, Hydro, imports from Bhutan.

▪ **Crude Oil** – Total Crude Oil Production.

▪ **Cement** – Production of Large Plants and Mini Plants.

▪ **Natural Gas** – Total Natural Gas Production.

▪ **Steel** – Production of Alloy and Non-Alloy Steel only.

▪ **Refinery Products** – Total Refinery Production (in terms of Crude Throughput).

- **Fertilizer** – Urea, Ammonium Sulphate (A/S), Calcium Ammonium Nitrate (CAN), Ammonium chloride (A/C), Diammonium Phosphate (DAP), Complex Grade Fertilizer and Single superphosphate (SSP).

o The ICI is **released every month**.

o The index is calculated by using the **Laspeyres formula** of the **weighted arithmetic mean of quantity relatives**.

	Industry	Weight
01	Coal	10.33
02	Electricity	19.85
03	Crude oil	8.98
04	Cement	5.37
05	Natural gas	6.88
06	Steel	17.92
07	Refinery products	28.04
08	Fertilizers	2.63
	Total	100

G-SECs

The Reserve Bank of India (RBI) is planning to enable international settlement of transactions in government securities (G-secs) through International Central Securities Depositories (ICSDs), to help expand the investor base for the G-secs market.

Once operationalised, this will enhance access of non-residents to the G-secs market, as will the inclusion of Indian G-secs in global bond indices.

What is a Government Security (G-Sec)?

o A Government Security (G-Sec) is a **tradeable instrument issued by the Central Government** or the State Governments. It **acknowledges the Government's debt obligation**.

o Such securities are **short term** (usually called treasury bills, with original maturities of less than one year) or **long term** (usually called Government bonds or dated securities with original maturity of one year or more).

o In India, the **Central Government issues both, treasury bills and bonds or dated securities** while the **State Governments issue only bonds or dated securities**, which are called the State Development Loans (SDLs).

o G-Secs carry practically no risk of default and, hence, are called **risk-free gilt-edged** instruments.

Treasury Bills (T-bills)

o Treasury bills or T-bills, which are money market instruments, are **short term debt instruments** issued by the Government of India and are presently issued in three tenors, namely, **91 day, 182 day and 364 day**.

o Treasury bills are **zero coupon securities** and **pay no interest**. Instead, they are issued at a discount and redeemed at the face value at maturity. For example, a 91 day Treasury bill of ₹100/- (face value) may be issued at say ₹ 98.20, that is, at a discount of say, ₹1.80 and would be redeemed at the face value of ₹100/-.

o The return to the investors is the difference between the maturity value or the face value (that is ₹100) and the issue price.

Cash Management Bills (CMBs)

o In 2010, Government of India, in consultation with RBI introduced a new short-term instrument, known as Cash Management Bills (CMBs), to meet the temporary mismatches in the cash flow of the Government of India.

o The CMBs have the **generic character of T-bills but are issued for maturities less than 91 days**.

Dated G-Secs

o Dated G-Secs are securities which carry a **fixed or floating coupon** (interest rate) which is paid on the face value, on half-yearly basis.

o Generally, the tenor of dated securities ranges from 5 years to 40 years.

Advantages of G-Secs

o Besides providing a return in the form of coupons (interest), G-Secs offer the maximum safety as they carry the Sovereign's commitment for payment of interest and repayment of principal.

o They can be held in book entry, i.e., **dematerialized/ scripless form**, thus, obviating the need for safekeeping. They can also be held in physical form.

o G-Secs are available in a **wide range of maturities** from 91 days to as long as 40 years to suit the duration of varied liability structure of various institutions.

o G-Secs **can be sold easily in the secondary market** to meet cash requirements.

o G-Secs **can also be used as collateral** to borrow funds in the repo market.

o Securities such as **State Development Loans (SDLs) and Special Securities (Oil bonds, UDAY bonds etc) provide attractive yields.**

o The settlement system for trading in G-Secs, which is based on **Delivery versus Payment (DvP),** is a very simple, safe and efficient system of settlement. The DvP mechanism ensures transfer of securities by the seller of securities simultaneously with transfer of funds from the buyer of the securities, thereby mitigating the settlement risk.

o G-Sec prices are readily available due to a liquid and active secondary market and a transparent price dissemination mechanism.

o Besides banks, insurance companies and other large investors, smaller investors like Co-operative banks, Regional Rural Banks, Provident Funds are also required to statutory hold G-Secs.

TRIPS

India has pitched for an early outcome of the TRIPS waiver proposal for COVID-19 vaccines, therapeutics and diagnostics in the World Trade Organisation (WTO).

Earlier, India and South Africa had submitted the first proposal, suggesting a waiver for all WTO members on the implementation of certain provisions of the TRIPs Agreement in relation to the prevention, containment or treatment of COVID-19.

TRIPS Agreement

o The TRIPS Agreement, which came into effect on **1 January 1995**, is to date the most comprehensive multilateral agreement on intellectual property.

o The areas of intellectual property that it covers are: **copyright and related rights** (i.e. the rights of performers, producers of sound recordings and broadcasting organizations); **trademarks** including service marks; **geographical indications** including appellations of origin; **industrial designs; patents** including the protection of new varieties of plants; the **layout-designs** of integrated circuits; and **undisclosed information including trade secrets and test data**.

o The **three main features of the** Agreement are:

1. **Standards.** In respect of each of the main areas of intellectual property covered by the TRIPS Agreement, the Agreement sets out the minimum standards of protection to be provided by each Member.

▪ Each of the main elements of protection is defined, namely the subject-matter to be protected, the rights to be conferred and permissible exceptions to those rights, and the minimum duration of protection.

▪ The Agreement sets these standards by requiring, **first,** that the substantive obligations of the main conventions of **the WIPO, the Paris Convention for the Protection of Industrial Property (Paris Convention) and the Berne Convention for the Protection of Literary and Artistic Works (Berne Convention)** in their most recent versions, must be complied with. With the exception of the provisions of the Berne Convention on moral rights, all the main

substantive provisions of these conventions are incorporated by reference and thus become obligations under the TRIPS Agreement between TRIPS Member countries.

- The relevant provisions are to be found in Articles 2.1 and 9.1 of the TRIPS Agreement, which relate, respectively, to the Paris Convention and to the Berne Convention. Secondly, the TRIPS Agreement adds a substantial number of additional obligations on matters where the pre-existing conventions are silent or were seen as being inadequate. The TRIPS Agreement is thus sometimes referred to as a Berne and Paris-plus agreement.

2. **Enforcement.** The **second main** set of provisions deals with domestic procedures and remedies for the enforcement of intellectual property rights. The Agreement lays down certain general principles applicable to all IPR enforcement procedures. In addition, it contains provisions on civil and administrative procedures and remedies, provisional measures, special requirements related to border measures and criminal procedures, which specify, in a certain amount of detail, the procedures and remedies that must be available so that right holders can effectively enforce their rights.

3. **Dispute settlement.** The Agreement makes disputes between WTO Members about the respect of the TRIPS obligations subject to the WTO's dispute settlement procedures.

o In addition the Agreement provides for certain basic principles, such as **national and most-favoured-nation treatment**, and some general rules to ensure that procedural difficulties in acquiring or maintaining IPRs do not nullify the substantive benefits that should flow from the Agreement.

o The **obligations under the Agreement will apply equally to all Member countries**, but **developing countries will have a longer period to phase them in.**

o Special transition arrangements operate in the situation where a developing country does not presently provide product patent protection in the area of pharmaceuticals.

o The TRIPS Agreement is a minimum standards agreement, which allows Members to provide more extensive protection of intellectual property if they so wish. Members are left free to determine the appropriate method of implementing the provisions of the Agreement within their own legal system and practice.

Certain general provisions

o As in the main pre-existing intellectual property conventions, the basic obligation on each Member country is to accord the treatment in regard to the protection of intellectual property provided for under the Agreement to the persons of other Members.

o **Article 1.3 defines** who these persons are. These persons are referred to as "nationals" but include persons, natural or legal, who have a close attachment to other Members without necessarily being nationals.

o The criteria for determining which persons must thus benefit from the treatment provided for under the Agreement are those laid down for this purpose in the main pre-existing intellectual property conventions of WIPO, applied of course with respect to all WTO Members whether or not they are party to those conventions.

o These conventions are the **Paris Convention, the Berne Convention, International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (Rome Convention), and the Treaty on Intellectual Property in Respect of Integrated Circuits (IPIC Treaty).**

o **Articles 3, 4 and 5 include** the fundamental rules on national and most-favoured-nation treatment of foreign nationals, which are common to all categories of intellectual property covered by the Agreement.

o The general goals of the **TRIPS Agreement are contained in the Preamble of the Agreement**, which reproduces the basic Uruguay Round negotiating objectives established in the TRIPS area by the 1986 Punta del Este Declaration and the 1988/89 Mid-Term Review.

o These objectives include the reduction of distortions and impediments to international trade, promotion of effective and adequate protection of intellectual property rights, and ensuring that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade.

o These objectives should be read in conjunction with **Article 7, entitled "Objectives", according to which the protection and enforcement of intellectual property rights** should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of

technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

o **Article 8, entitled "Principles",** recognizes the rights of Members to adopt measures for public health and other public interest reasons and to prevent the abuse of intellectual property rights, provided that such measures are consistent with the provisions of the TRIPS Agreement.

MSP HIKED FOR RABI CROPS

The Centre has increased the minimum support price (MSP) for wheat for the upcoming rabi season to ₹2,015 per quintal, a 2% hike from the ₹1,975 per quintal rate of last year.

Oilseeds and pulses such as mustard, safflower and masoor dal saw higher MSP increases of up to 8% in a bid to encourage crop diversification, according to a statement on the decision of the Cabinet Committee on Economic Affairs.

MSP

o The MSP is the rate at which the government purchases crops from farmers, and is based on a **calculation of at least one-and-a-half times the cost of production incurred by the farmers.**

o This year, the MSP for bajra was set at 85% above the cost of production, while the MSP for urad and tur will ensure 60% returns. The MSPs for the remaining crops were mostly set around the stipulated 50% above the cost of production.

o **CACP recommends MSP for twenty two (22) crops and Fair & Remunerative Price (FRP) for sugarcane**. Apart from Sugarcane for which FRP is declared by the Department of Food &Public Distribution, twenty two crops covered under MSP are Paddy, Jowar, Bajra, Maize, Ragi, Arhar, Moong, Urad, Groundnut-in-shell, Soyabean, Sunflower, Seasamum, Nigerseed, Cotton, Wheat, Barley, Gram, Masur (lentil), Rapeseed/Mustardseed, Safflower, Jute and Copra.

o In addition, **MSP for Toria and De-Husked coconut** is fixed by the Department on the basis of MSP's of Rapeseed/Mustardseed and Copra respectively.

o Besides, announcement of MSP, the Government also organizes procurement operations of these agricultural commodities through various public and cooperative agencies such as **Food Corporation of India (FCI), Cotton Corporation of India (CCI), Jute Corporation of India (JCI), Central Warehousing Corporation (CWC), National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED), National Consumer Cooperative Federation of India Ltd. (NCCF), and Small Farmers Agro Consortium (SFAC)**.

o Besides, State Governments also appoint state agencies to undertake PSS operations.

TRANSPORT AND MAKETING ASSISTENCE (TMA)

In order to enhance agri exports,the central government has enhanced the scope of Transport and Marketing Assistance (TMA) scheme for specified agriculture products by increasing rate of interest and including dairy products under its purview, and extended the scheme till March 31, 2022.

Enhanced assistance under the revised scheme is expected to help Indian exporters of agricultural products to meet rising freight and logistics costs.

Dairy products, which were not covered under the earlier scheme, will also be eligible for assistance under the scheme. Apart from that, the rates of assistance have been increased, by 50% for exports by sea and by 100% for exports by air.

About TMA

o It was launched in **2019,** for providing financial assistance for the transport and marketing of agricultural products to boost exports of such commodities to certain countries in Europe and North America.

o In the year 2018, the government approved an Agriculture Export Policy with an aim to double the shipments to USD 60 billion by 2022.

o **APEDA (Agricultural and Processed Food Products Export Development Authority)** works towards expanding the export potential of Indian agricultural and food products.

o Under the TMA, the government **reimburses a certain portion of freight charges and provides assistance for the marketing of agricultural produce.**

o The assistance, at notified rates, will be available for export of eligible agriculture products to the permissible countries, as specified from time to time.

o The revised scheme has included dairy products among other agriculture products in its purview and increased the rates of assistance.

o Rates of assistance have been increased, by 50% for exports by sea and 100% through the air.

o TMA would be **reimbursed through the Regional Authorities of DGFT (Directorate General of Foreign Trade).**

Objective

o To provide assistance for the international component of freight and marketing of agricultural produce.

o To mitigate the disadvantage of higher cost of transportation of export of specified agriculture products due to trans-shipment.

o To promote brand recognition for Indian agricultural products in the specified overseas markets.

Agricultural and Processed Food Products Export Development Authority

o APEDA is a non-trading, statutory body established by the Government of India under the Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in December, 1985.

o It functions under the Ministry of Commerce and Industry. The Authority has its headquarters in New Delhi.

o It has been mandated with the responsibility of export promotion and development of the scheduled products viz. fruits, vegetables, meat products, dairy products, alcoholic and non-alcoholic beverages etc.

o It has also been entrusted with the responsibility to monitor import of sugar.

o In 2017, APEDA launched a mobile app- **"Farmer Connect"** to allow farmers to apply online to facilitate their farm registration, tracking the status of application & approvals by State Government and Lab sampling by authorized Laboratories.

PRODUCTION-LINKED INCENTIVE (PLI) SCHEME

The Union Cabinet approved a ₹26,058 crore production-linked incentive (PLI) scheme to accelerate domestic manufacturing of high value advanced automotive technology vehicles as well as components and drones.

The government estimates the scheme will attract ₹42,500 crore in fresh investment in the automobile and auto components industry over five years, spurring incremental production in excess of ₹2.3 lakh crore and helping create more than 7.5 lakh jobs.

What is the Production-Linked Incentive scheme and why it is needed?

o The scheme provides incentives to companies for **enhancing their domestic manufacturing apart from focusing on reducing import bills and improving the cost competitiveness of local goods**.

o PLI scheme offers incentives on incremental sales for products manufactured in India.

o The first three PLI schemes were approved in March last year followed by 10 new schemes which were notified in November of which six were approved later. The scheme for respective sectors has to be implemented by the concerned ministries and departments. According to a Cabinet statement in November last year, savings, if any, from one PLI scheme of an approved sector can be utilised to fund the scheme for another approved sector.

o The Scheme has also been approved for sectors such as automobiles, pharmaceuticals, IT hardware including laptops, mobile phones & telecom equipment, white goods, chemical cells, food processing, etc.

Who is eligible for the scheme?

o Eligibility criteria for businesses under the PLI scheme vary based on the sector approved under the scheme. For instance, the eligibility for telecom units is subject to the achievement of a minimum threshold of cumulative incremental investment and incremental sales of manufactured goods.

o The minimum investment threshold for **MSME** is Rs 10 crore and Rs 100 crores for others.

o **Under food processing, SMEs** and others must hold over 50 per cent of the stock of their subsidiaries, if any. The selection of SMEs is based on "their proposal, uniqueness of the product and the level of product development, etc., according to the Ministry of Food Processing Industries.

o On the other hand, for businesses under **pharmaceuticals manufacturing**, the project has to be a greenfield project while the net worth of the company should not be less than 30 per cent of the total committed investment. Moreover, the proposed Domestic Value Addition (DVA) of the company should be at least 90 per cent in the case of fermentation-based product and at least 70 per cent in the case of chemical synthesis-based product.

What are the incentives involved?

o An incentive of 4-6 per cent was offered last year on mobile and electronic components manufacturing such as resistors, transistors, diodes, etc. Similarly, 10 per cent incentives were offered for six years (FY22-27) of the scheme for the food processing industry.

o SMEs in the four areas such as ready to cook or ready to eat, processed fruits and vegetables, marine products, and mozzarella cheese will also be supported for manufacture innovative and organic products, according to the ministry.

o For white goods too, the incentive of 4-6 per cent on incremental sales of goods manufactured in India for a period of five years was offered to companies engaged in the manufacturing of air conditioners and LED lights.

o During the first five months of the scheme, the companies in electronics manufacturing, which had applied for the scheme, produced goods worth around Rs 35,000 crore and invested around Rs 1,300 crore under the scheme, the Commerce Ministry had said citing the Quarterly Review Reports for the quarter ending December 2020. For companies in white goods, the PLI Scheme is expected to see an incremental investment of Rs 7,920 crore over five years along with incremental production worth Rs 1.68 lakh crore, exports worth Rs 64,400 crore, and direct and indirect revenues of Rs 49,300 crore.

E-SHRAM

The Ministry of Labour and Employment (MOLE) launched the E-Shram, the web portal for creating a National Database of Unorganized Workers (NDUW), which will be seeded with Aadhaar.

o It seeks to register an estimated 398-400 million unorganised workers and to issue an E-Shram card. However, it has come into existence more than a decade after the passage of the Unorganised Workers' Social Security Act in 2008; and if we consider inter-State migrant workers, the portal is a little more than four decades late.

o Workers **stand to gain by registration in the medium to long run**. But the instant benefit of accident insurance upto ₹0.2 million to registered workers is surely not an attractive carrot. The main point of attraction is the benefits they stand to gain during normal and crisis-ridden periods such as the novel coronavirus pandemic now which the Government needs to disseminate properly.

Data security, other issues

o There is also another issue: **why should small employers be incentivised to ask or require their workers to register** even though the government reportedly requires them mandatorily to register their workers.

o One of the vital concerns of e-portals is **data security**, including its potential abuse especially when it is a mega-sized database. The central government would have to share data with State governments whose data security capacities vary. There are also media reports pointing out the absence of a national architecture relating to data security.

o There are several issues concerning the eligibility of persons to register as well as the definitional issues. **By excluding workers covered by EPF and ESI, lakhs of contract and fixed-term contract workers will be excluded from the universe of UW.** Under the Social Security Code (SSC), hazardous establishments employing even a single worker will have to be covered under the ESI, which means these workers also will be excluded. The

NDUW excludes millions of workers aged over 59 from its ambit, which constitutes age discrimination. Given the frugal or no social security for them, their exclusion will hurt their welfare.

o As such, SSC is exclusionary as ESC and EPF benefits will be applicable only to those employed in establishments employing 10 or 20 workers, respectively. Thresholds in labour laws segment the labour market.

o Many workers will not have **an Aadhaar-seeded mobile or even a smartphone**. Aadhaar-seeding is a controversial issue with political overtones, especially in the North-eastern regions. But it is necessary and the Government is right in insisting on it. The extent of definitional and systemic exclusions is vast and there may be other categories of exclusion due to possible procedural deficits.

Complex identities

o The very identity of unorganised workers presents problems thanks to its complexity and ever-changing identities. Many are circular migrant workers and they quickly, even unpredictably, move from one trade to another.

o Many others perform formal and informal work as some during non-office hours may belong to the gig economy, for example as an Uber taxi or a Swiggy employee. They straddle formal and informal sectors.

o The nuances of the unorganised workers' identity are so complex that one wonders whether the mechanical and assumptions-based portal registration will be able to capture the complexities and dynamics involved regarding them. Even though MOLE has included gig workers in this process, it is legally unclear whether the gig/platform worker can be classified first as a worker at all (the other three Labour Codes do not include these workers), and second as organised or unorganised workers — the definition of an "unorganised worker" in the Social Security Code (vide. S.2(86)) does not specifically include them, unless they are declared 'self-employed' or 'wage workers'.

o In fact, the **National Classification of Occupations (NCO) family code** does not specifically include 'gig/platform worker' even though they may be registered under several categories of 'drivers' which will hide their unique identity. Of course, there is an all-inclusive miscellaneous category that will have to be intelligently used to expand the occupational categories.

Other impediments

o The central government will have to depend on the State governments for this project to be successful.

o In many States, the social dialogue with the stakeholders especially is rather weak or non-existent. The success of the project depends on the involvement of a variety of stakeholders apart from trade unions, massive and innovative dissemination exercises involving multiple media outlets of various languages, the holding of camps on demand by the stakeholders and on their own by the Government, efficiency of the resolution of grievance redress mechanisms, micro-level operations, etc.

o There is also the concern of corruption as middle-service agencies such as Internet providers might charge exorbitant charges to register and print the E-Shram cards. Therefore, the involvement of surveillance agencies is crucial. More importantly, the Government must publish statistics at the national and the regional levels of the registrations to assess the registration system's efficiency.

Way ahead

o E-Shram is a vital system to provide hitherto invisible workers much-needed visibility. It will provide the Labour Market Citizenship Document to them.

o It should go one step further to argue for triple linkage for efficient and leakage-less delivery of all kinds of benefits and voices to workers/citizens, viz. One-Nation-One-Ration Card (ONOR), E-Shram Card (especially bank account seeded) and the Election Commission Card.

o Last but not least, registrations cannot be a source of exclusion of a person from receiving social assistance and benefits.

CORPORATE BOND

In a bid to deepen the corporate bond market, the government is working on setting up a 'backstop facility'. the government, in consultation with the Reserve Bank of India (RBI), had raised the foreign investor participation ceiling in corporate bonds from 9% to 15%.

Based on a proposal from markets regulator SEBI, an announcement in the Budget for 2021-22 was made with regard to the creation of a 'backstop facility' that would purchase investment-grade debt securities both in stressed and in normal times, and aid the development of the bond market.

What is a corporate bond?

o A **bond is a debt obligation, like an IOU**. Investors who buy corporate bonds are lending money to the company issuing the bond. In return, the company makes a legal commitment to pay interest on the principal and, in most cases, to return the principal when the bond comes due, or matures.

o To understand bonds, it is helpful to compare them with stocks. When you buy a share of common stock, you own equity in the company and will receive any dividends declared and paid by the company. When you buy a corporate bond, you do not own equity in the company.

o You will receive only the interest and principal on the bond, no matter how profitable the company becomes or how high its stock price climbs. But if the company runs into financial difficulties, it still has a legal obligation to make timely payments of interest and principal. The company has no similar obligation to pay dividends to shareholders.

o In a bankruptcy, bond investors have priority over shareholders in claims on the company's assets. like all investments, bonds carry risks. one key risk to a bondholder is that the company may fail to make timely payments of interest or principal. If that happens, the company will default on its bonds. this "default risk" makes the creditworthiness of the company—that is, its ability to pay its debt obligations on time—an important concern to bondholders.

What are the basic types of corporate bonds?

o Companies use the proceeds from bond sales for a wide variety of purposes, including buying new equipment, investing in research and development, buying back their own stock, paying shareholder dividends, refinancing debt, and financing mergers and acquisitions.

o Bonds can be **classified according to their maturity**, which is the date when the company has to pay back the principal to investors. Maturities can be short term (less than three years), medium term (four to 10 years), or long term (more than 10 years). Longer-term bonds usually offer higher interest rates, but may entail additional risks.

o Bonds and the companies that issue them are also classified according to their **credit quality**. Credit rating agencies assign credit ratings based on their evaluation of the risk that the company may default on its bonds.

o Credit rating agencies periodically review their bond ratings and may revise them if conditions or expectations change. Based on their credit ratings, bonds can be either investment grade or non-investment grade. Investment grade bonds are considered more likely than non-investment grade bonds to be paid on time. non-investment grade bonds, which are also called high-yield or speculative bonds, generally offer higher interest rates to compensate investors for greater risk.

o **Bonds also differ according to the type of interest payments they offer**. Many bonds **pay a fixed rate of interest throughout their term.**

o Interest payments are called **coupon payments,** and the **interest rate is called the coupon rate**. With a fixed coupon rate, the coupon payments stay the same regardless of changes in market interest rates. other bonds offer floating rates that are reset periodically, such as every six months. these bonds adjust their interest payments to changes in market interest rates.

o **Floating rates are based on a bond index or other benchmark.** For example, the floating rate may equal the interest rate on a certain type of treasury bond plus 1%

WTO AGRICULTURE PACT

The Agreement on Agriculture at the WTO is riddled with deep imbalances, which favour the developed countries and have tilted the rules against many developing countries.

o Commerce Minister of India said this while addressing the **G-33 Virtual Informal Ministerial Meeting**. Out of a total of 47 G-33 members, representatives from 21 countries, including India, took the floor to make the brief intervention.

o He said that G-33 must strive for positive outcomes on a permanent solution to public stockholding for food security purposes, which was of utmost importance, finalisation of a special safeguard mechanism (SSM) quickly, and a balanced outcome on domestic support.

o The Minister urged the members to work collectively to retain the cohesion of the G-33 coalition and strengthen it further by reaching out to other like-minded developing groups to secure their support for a fair, balanced and development-centric outcome on agriculture at the 12th conference in Geneva.

o The meeting concluded with the adoption of the G-33 joint ministerial statement reaffirming commitment for expeditious resolution of the WTO's mandated issues in agriculture.

o **The G33 (or the Friends of Special Products in agriculture)** is a coalition of developing countries, established prior to the **2003 Cancun ministerial conference,** that have coordinated during the Doha Round of World Trade Organization negotiations, specifically in regard to agriculture.

WTO on Agriculture

o Trade and markets for food and farm goods matter to us all — whether we are consumers of these products, or also produce, transform and trade them.

o To address government policies that distort markets and restrict trade, WTO members concluded the **Agreement on Agriculture, which came into force in 1995.**

o This initiated reductions in subsidies and trade barriers to make markets fairer and more competitive. It also provided for members to continue negotiations for further reform, taking into account concerns such as food security and the environment. These ongoing talks led in 2015 to a historic decision to abolish agricultural export subsidies and new rules for other forms of farm export support.

o The WTO's Agriculture Committee oversees implementation of the Agreement and provides a forum for members to address related concerns.

The Agreement covers

o **Market access** — the use of trade restrictions, such as tariffs on imports

o **Domestic support** — the use of subsidies and other support programmes that directly stimulate production and distort trade

o **Export competition** — the use of export subsidies and other government support programmes that subsidize exports.

o Under the Agreement, WTO members agree to "schedules" or lists of commitments that set limits on the tariffs they can apply to individual products and on levels of domestic support and export subsidies.

Agriculture negotiations

o Agricultural trade reform did not end with the birth of the Agriculture Agreement. WTO members are continuing to negotiate agricultural trade reform.

o WTO members adopted important decisions on agriculture at the **2015 WTO Ministerial Conference in Nairobi, Kenya**. These include a commitment to abolish subsidies for farm exports as well as decisions on public stockholding for food security purposes, on a special safeguard mechanism for developing countries, and on trade rules for cotton.

o At the **2013 WTO Ministerial Conference in Bali, Indonesia**, ministers also agreed on a package of issues in agriculture.

- o **Cotton:** Cotton is discussed at the WTO on two tracks: 1) the trade reforms needed to address subsidies and high trade barriers for cotton, and 2) the assistance provided to the cotton sector in developing countries.
- o **Food security:** The WTO Agreement on Agriculture explicitly recognises the need to take account of food security — both in the commitments that WTO members have made, and in ongoing negotiations.

SOCIETY

(Social Issues and Social Justice)

⬇ HATE SPEECH

A speech by a Bishop belonging to the Syro-Malabar Church in Kerala has caught attention for the wrong reasons. The Bishop coined the term 'narcotic jihad'.

He accused a few Muslim groups of giving Catholic girls narcotics or wooing them with the aim of religious conversion or of taking them to terrorist camps abroad. The speech aimed at a particular religion has a divisive tone.

Understanding hate speech

o This controversy has occasioned intriguing questions about hate speech regulation. It is important to consider — philosophically and morally — what justifies prohibiting hate speech.

o In **Chaplinsky v. New Hampshire (1942),** the U.S. Supreme Court held that their Constitution does not protect "insulting or 'fighting' words — those which, by their very utterance, inflict injury or tend to incite an immediate breach of the peace." This is the core principle behind hate speech prohibition.

o It is **important to think why liberal democracies prohibit some types of speech on grounds that they are 'injurious'**.

An important answer is based on the dignity and equality of individuals. Every person is entitled to basic human dignity and decent treatment.

o **Lord Bhikhu Parekh**, a British academic, said: "(Hate speech) views members of the target group as an enemy within, refuses to accept them as legitimate and equal members of society, lowers their social standing, and... subverts the very basis of a shared life. It creates barriers of mistrust and hostility between individuals and groups, plants fears, obstructs normal relations..., and... exercises a corrosive influence on the conduct of collective life."

o In **Pravasi Bhalai Sangathan v. Union of India (2014),** the Supreme Court of India quoted from the Canadian Supreme Court's decision in Saskatchewan v. Whatcott (2013). It said that hate speech "impacts a protected group's ability to respond to the substantive ideas under debate, thereby placing a serious barrier to their full participation in our democracy."

o This idea resonates well in India's political context. Being a minority in an aggressively Hindu majoritarian political climate, Muslims are left defenceless against a rhetoric of hatred against them. This rhetoric has not only led to a climate of fear for Muslims, but to cases of violence carried out solely on the basis of their identity. Relentless accusations have successfully sidelined the real concerns of the community, including social and educational backwardness.

The Indian legal position

o **Section 153-A of the Indian Penal Code (IPC)** prohibits "promoting enmity between different groups on grounds of religion, race, place of birth, residence, language, etc. and doing acts prejudicial to maintenance of harmony". The very genesis of the provision indicates that emphasis was given to societal integrity which the law thrives to preserve. The provision in its erstwhile form was incorporated by way of the **Penal Code Amendment Act of 1898**.

o The law, in contemporary politics, suffers from disuse and misuse. This is an issue at the operational level, i.e., how the law is implemented and enforced. On the one hand, remarks with tendencies towards hatred and violence, are ignored. On the other, vague references against the majoritarian agenda are often charged under this provision.

o The Kerala incident, unfortunately, is not an isolated one. In a national scenario where hate has become an ideology and its impact on society is fatal, we need to think about countering it with political and jurisprudential means.

o In India, hate speech is not defined under the Constitution or in the penal statutes. There is no specific legislation on it. It is not easy to design an accurate anti-hate speech law, due to its inherent potential for misuse. This is why we need a political and pedagogical solution to the menace.

o The Constitution's ideas of equality, liberty and fraternity must be made topics of continuing public education. Whenever hate speech thrives, the state should invoke the existing law judiciously in appropriate cases. It must also take a secular stand based on the rule of law and educate the masses.

MARITAL RAPE

*In 2017, the Supreme Court, in **Independent Thought v. Union of India**, refused to delve into the question of marital rape of adult women while **examining an exception to Section 375 (rape) of the Indian Penal Code (IPC)** which allows a man to force sex on his wife.*

Recent rulings by High Courts have been contradictory — one backed marital rape as a valid ground for divorce, while another granted anticipatory bail to a man while concluding that forcible sex is not an "illegal thing".

The approach of the courts

o The **Kerala High Court** held that acts of sexual perversions of a husband against his wife amounted to (mental) cruelty and was therefore a good ground to claim divorce (since marital rape is not a punishable offence).

o The Court said that in modern social jurisprudence, spouses are treated as equal partners and a husband cannot claim any superior right over his wife either with respect to her body or with reference to her individual status.

o The **Chhattisgarh High Court**, while discharging the accused husband, held that the charge of rape framed under Section 376 of the IPC was erroneous and illegal as it was covered under **Exception 2 to Section 375 and the wife was not under 18 years of age**.

o As the law on marital rape stands today, both the High Courts were right in their approach but the Kerala High Court was appreciated more for being progressive in its outlook.

o The **Justice Verma Committee report of 2013** stated that the notion that a wife is no more than a subservient chattel of her husband has since been given up in the U.K.

o The **European Commission of Human Rights** has held that "a rapist remains a rapist regardless of his relationship with the victim".

o Marital rape is a criminal offence in South Africa, Australia, and Canada, among other countries. After due deliberations, the Committee recommended that the exception for marital rape be removed, but this suggestion was not accepted by the government.

Earlier, in 1983, the Andhra Pradesh High Court, in **T. Sareetha v. T. Venkata Subbaiah,** held restitution of conjugal rights under the Hindu Marriage Act of 1955 to be unconstitutional as its decree could be misused by a husband for enforcing sexual intercourse with his wife. However, the Supreme Court overruled it by declaring that the institution of marriage stood for much more than mere sexual congress.

A partnership of equals

o A section of society feels that once marital rape is criminalised, it may lead to filing of false charges against husbands. It also thinks that it will be very difficult for the police to prove such cases beyond reasonable doubt. The first apprehension is unfounded in the absence of any empirical data. Further, there are legal provisions to deal with false cases. If found ineffective, legal remedies may be revised suitably.

o Similarly, the **difficulty of proof cannot be a criterion for not notifying deviant behaviour as an offence**. Like most other sexual offences, the prosecution may establish the case with relevant facts and circumstances. Moreover, doing away with Exception 2 would show complete non-tolerance by the state with respect to rape.

o While decriminalising adultery, the Supreme Court in **Joseph Shine vs. Union of India (2018)** said that a legislation that perpetuates stereotypes in relationship and institutionalises discrimination is a clear violation of the fundamental rights guaranteed by the Constitution.

o It is undisputed that marriage in modern times is regarded as a partnership of equals. It is an association of two individuals, each of whom has separate integrity and dignity.

o The **violation of bodily integrity of a woman is a clear violation of her autonomy**.

o Any provision of law that is not reasonable, just and fair, and is against the spirit of Article 21 of the Constitution, is discriminatory and arbitrary and therefore must be declared unconstitutional. It is now only a question of time that exemption of liability from marital rape shall be declared unconstitutional and individual's dignity recognised in full.

HOUSEWORK AND THE ECONOMY

In recent past, the manifestos for Assembly elections have promised various forms of payment to homemakers, thus putting the spotlight on the unpaid domestic work done by women. From a monthly assistance to women family heads in Tamil Nadu to an enhanced Orunodoi scheme in Assam, pension for housewives in Kerala and income support to female heads of households in West Bengal, various proposals for 'empowerment' have been put forward by various parties to reach out to women voters. The promises have sparked a debate on the issue of care work and possible solutions to address the disparities therein.

Housework and the economy

o **Unpaid care work,** according to the OECD, refers to all unpaid services provided within a household for its members, including care of persons, housework and voluntary community work.

o These activities are considered work because **theoretically one could pay a third person to perform them**.

o **Standard measures of economic activity do not take into account a large portion of this wo**rk, much of which is done by women and girls.

o The gender inequalities in the time allocated to this work are glaring, with **McKinsey estimating that women do 75% of the world's total unpaid care work**.

o In India, women spend 299 minutes a day on unpaid domestic services while men spend 97 minutes, according to the 2019 NSS report on time use. This inequality has a direct correlation with participation in the formal economy.

Current picture

o India has slipped **28 places to rank 140th among 156 countries in the World Economic Forum's Global Gender Gap Report 2021.** Among the drivers of this decline is a decrease in women's labour force participation rate, which fell from 24.8 per cent to 22.3 per cent.

o It also estimated that earned income of women in India is only one-fifth of men's, which puts the country among the bottom 10 globally on this indicator.

o The **economic contribution of women is 17% of India's GDP** — less than half the global average.

o The Covid-19 pandemic has, by many accounts, exacerbated the situation. By November 2020, while most men got their jobs back, women had a much tougher time. About 49% of total job losses by that time were of women, CMIE has estimated.

Concern

o Going by the numbers, therefore, women's economic participation is very poor. However, as the time use survey shows, women spend a disproportionate amount of time (compared to men) on unpaid domestic work, which is ironically the '**hidden engine' that keeps economies, businesses and societies running** and **contributes significantly to individual well-being.**

o While this work is foundational for societies, it is mostly invisible, undervalued and unaccounted worldwide.

o The **ILO estimates that if such services were to be valued on the basis of an hourly minimum wage, they would amount to 9 per cent of global GDP (US$11 trillion).**

o According to an **ILO report** on 'Care work and care jobs for the future of decent work', unpaid care work is the main barrier preventing women from getting into, remaining and progressing in the labour force.

o Therefore, policies should address the rising need for care and tackle the huge disparity between women's and men's care responsibilities. This is especially true for India, given that a major challenge on the economic front is getting more women into the formal workforce.

Measuring and monetising care work

o The efficacy of classic economic indicators like GDP and unemployment rates in measuring living standards and social progress is increasingly being called into question.

o These indicators also do not take into account the allocation of labour and time resources by households and their impact on livelihoods and well-being.

o Measuring unpaid care work is thus key to arriving at more inclusive socio-economic indicators, and in formulating policies to address the gender gap.

o The **value of unpaid work can be estimated by calculating the amount of time spent on it** – through time use surveys – and then putting a price on it by calculating the opportunity cost or replacement cost, or by measuring the labour inputs that go into the activity. But this has its own challenges.

o According to an Oxfam survey, care work is often not considered 'work' and done 'automatically', hence respondents are less likely to report time spent on care. It is also difficult to capture the whole spectrum of care work as multitasking is common. For example, women might look after children while cooking or engaging in farm work. Variation and seasonality of work is also difficult to capture.

o Another issue that arises is **accounting for unpaid work in national accounts, and its international harmonisation**. The **System of National Accounts (SNA) puts unpaid labour in the category of 'own-account services'**, and excludes it from the activities in the production account.

Wages for housework

o In 1972, the International Wages for Housework Campaign was launched in Italy and spread to the UK, while Wages for Housework Committees were formed in various US cities.

o Selma James, a founder of the International Wages for Housework Campaign, now coordinates Global Women's Strike, a movement that seeks recognition for all household work and justice for women's unacknowledged contribution to the labour force.

o However, wages for housework is not a central demand in these movements because it is perceived to reinforce gendered division of labour, apart from being difficult to implement.

o In India, an application by the **National Housewives Association** seeking recognition as a trade union in 2010 was rejected by the deputy registrar of trade unions on the ground that housework is not a trade or an industry.

o In 2012, the then Minister for Women and Child Development Krishna Tirath had said that the government was considering mandating a salary for housework to women from husbands, the aim being to financially empower women. However, the proposal never materialised.

o There are **instances of cash transfer schemes for women** – such as Goa's Griha Aadhar scheme and Assam's Orunodoi scheme – but they are positioned as financial support rather than payment for housework.

o Apart from questions of implementation – who pays, in what form, who gets it and how much –payment for housework raises other issues regarding social implications and unintended consequences – whether it would further perpetuate patriarchal and caste inequalities.

o The issue has political resonance, hence its emergence in pre-election discussions. According to many experts, such a step is a beginning as it recognises glaring inequities, but more needs to be done to address the underlying issues.

Way ahead

o The **first step** in **addressing the inequalities in unpaid care work is to recognise its value**. This requires data, especially on time-use. More data will make more unpaid care work visible and help frame targeted policies and enable better monitoring of the impact of policies and investments.

o The 'NSS Report- Time Use in India 2019' was the first such countrywide survey to be conducted in India.

o The next step would be **reducing unpaid care work by investment in physical infrastructure** like clean water and sanitation, energy and public transport, and in social infrastructure such as care and health services and education. According to an Oxfam report, in households with access to the government's National Rural Drinking Water Programme (NRDWP), women spent 22 minutes less per day on average on care work and 60 minutes per day more

on paid work. The results for households that had begun using LPG gas cylinders for cooking under the Pradhan Mantri Ujjwala Yojana were similar — 49 minutes less spent on care work and an hour more on paid work.

o **Finally, redistribution of care work between men and women**, and between families and the state will encourage positive social norms and economic development.

o Investments in and expansion of care services for children and childhood education, for example, have the potential to generate jobs, many of which could be taken up by women. More equitable childcare and maternity policies could help reduce the 'motherhood penalty'.

o This approach would help address discriminatory social institutions, encourage awareness and 'de-feminise' care work.

o The importance of unpaid care work in addressing gender issues is **delineated under the Sustainable Development Goal 5,** which talks about recognising unpaid domestic work through the provision of public services, infrastructure and social protection policies and promotion of shared responsibility within the household, which will help ensure women's full and effective participation at all levels of decision-making in political, economic and public life.

GLASS CEILING IN JUDICIARY

The recent appointments of three female judges to the top court, and reports that one of them - Justice BV Nagarathna - could one day become India's first female chief justice, is being hailed as a "historic moment".

The appointments are no doubt welcome, as they narrow the gender gap in India's top court. But critics say celebrations are premature until the skewed gender balance across India's judiciary - which a retired female judge recently described as "an old boy's club" - is fixed.

On this, the Chief Justice of India N.V. Ramana backed 50% representation for women in judiciary.

Current Status

o The 25 high courts in the states have 81 women among 677 judges - five of them do not have a single female judge.

o In High Courts, women judges constitute 11.5%. Here in the Supreme Court, we currently have four women Justices out of the sitting 33. That makes it just 12%.

o Of the 1.7 million advocates, only 15% are women. Only 2% of the elected representatives in the State Bar Councils are women.

o There is no woman member in the Bar Council of India. This needs urgent correction.

Female Judges- Integral in Judiciary and courts of Law

o Presence of higher proportion of women judges is more integral as they are more empathetic compares to men. The judiciary, being an integral part of democracy should not stifle female voices. Though the number of females enrolled in undergraduate programme for law is equal to males, not many women lawyers get elevated to senior position. This gender disparity can only be tackled by internalizing gender sensitization and appointing women at all levels of judiciary. This, in no way, suggests that there should be reservation for women. There are many legislations which have provision to uplift women through positive discrimination.

o The female population of India stands at 48.5 per cent. However, the percentage of women judges is merely 29 per cent. There have been significant and tangible improvements in status of women in society in terms of literacy, economic participation, voting rights etc.

o In sharp contrast, we have also witnessed rising rates of crime against women. This grim scenario calls for a solid representation of women in judiciary. Gender sensitization also provides a diverse perspective to judgments. Justice Indu Malhotra in her farewell speech asserted that justice will be served if gender diversity is found on the bench.

o In a recent case, a Special leave Petition was filed by women lawyers against the order of Madhya Pradesh High court. In this case, the accused was granted bail on the condition of rakhi being tied to him by the victim, thus, nullifying the crime. Grave incidents like these loom as reminders to induct more women in the judiciary. This, by no means, ensure that having women judges would ensure fair judgment but the utter callousness and lack of empathy reflected in the judgements could significantly reduce.

Weighing and analyzing all possibilities

o On the representative side, women have many feats in holding positions of power. Having a woman chief justice of Supreme Court would add to the list of feats and achievements. But are these feats mere tokenism under the garb of equality or empowerment? Or could the women in charge of positions actually help in making decisive changes?

o Simply inducting a woman CJI would not absolve the judiciary from the responsibility and accountability it holds. Reorientation and ground- level changes are required to convert the rosy picture into reality. We should bear in mind that seeing the first Woman Chief Justice would be an overwhelming moment for India. But this should be treated as a beginning to sea changes that must be brought and not as the final goal.

Systemic Change- Need of Hour

o The system presiding over appointment of judges and related affairs must be transparent in its conduct. Back in 2015, NJAC Act was struck down in the judgment of Supreme Court Advocates on Record Association vs Union of India. Through this, the Apex Court detached itself from executive. This guaranteed the transparency.

o In the same judgment, the Apex Court also asked government to frame Memorandum of Procedure laying the guidelines for appointment of judges in High courts and Supreme Courts. However, even after six years there is little to no development on this front. Therefore, the avowed objective of achieving accountability and transparency remains unfulfilled. These are also the prerequisites to ensure equal representation of women justices in selection through collegiums system.

o It is the dynamics prevailing in these courts that are responsible for the lower representation of women.

o The collegium system is filled with male judges.

o One cannot entirely ignore the possibility of embedded patriarchal conditioning, and subconscious prejudices being a significant factor in appointments.

o The people holding positions of power are also a part and parcel of society and are likely to translate the same old societal beliefs and notions. Hence, defining concrete contours of Memorandum of Procedure (MOP) would leave less scope for loophole or individual biases. This would ensure well – informed decisions and policies.

India has witnessed a long history of empty and utopian promises on this issue. Momentous change can only come through revamping the whole system. This demand can be fulfilled by giving due – recognition to women- centric reforms. Our country, as a whole unit should strive for gender parity in judiciary. These small steps would go a long way in the general and overall upliftment of women in India.

FERTILITY RATE DECLINES

o The religious composition of India's population has remained largely stable since Independence as fertility rates have declined across all religious groups, according to a study by the Pew Research Center.

o **Fertility rate is the number of children a woman would have on average in her lifetime**.

o There has been a significant decline in fertility rates across religious groups, with Muslims recording the highest drop.

o As a result, the population growth rates have also declined across all religions.

o The fertility rates of religious groups have, in fact, converged over time. Another recent Pew study suggests that religious conversion had little bearing on the composition of the population.

o 98% said they currently identify themselves with the same religion they were raised in, pointing to the minimal impact of religious conversion.

o The population growth rate of Muslims dropped from 32.7% in 1951-61 to 24.7% in 2001-11. In the same time periods, the population growth rate of Hindus dropped from 20.7% to 16.7%.

o **Drop in fertility levels:** The sharpest fall was recorded among Muslims. Also, the gap in fertility levels between religions has reduced. In 1992, a Muslim woman gave birth to an average of 1.1 more children than a Hindu. However, in 2015, this difference reduced to 0.5.

o **Minimal change in composition:** The chart depicts the change in India's religious composition between 1951 and 2011. There have been only modest changes in the overall religious make-up of the population in the 60-year period.

Religious Group	Percentage of population
Hindus	79.8%
Muslims	14.2%
Christians	2.3%
Sikhs	1.7%
Buddhists	0.7%
Jains	0.4%
Others/Not specified	0.9%

- o **Stable even at 2050:** According to Pew Research Center's demographic projections for 2050, Hindus will form 77% of India's total population (a 2% point decrease from 2020) and the share of Muslims will grow by 3% points to 18% in 2050).

- o **Impact of conversion:** While the fertility rate has been the primary driver of change in the composition of the population, another Pew report study says religious conversion had no impact on demographic change. Only 0.7% of Hindus said they were raised Hindu but identified with some other religion, while 0.8% said they weren't raised Hindu but now identified as Hindu. This suggests that there has been little movement in and out of religious groups.

SELF HELP GROUPS

- o Self-Help Group (SHG) is a small voluntary association of poor people, preferably from the same socio-economic background.

- o They come together for the **purpose of solving their common problems through self-help and mutual help**. The SHG **promotes small savings** among its members.

- o The savings are kept with a bank. This common fund is in the name of the SHG. SHG is a group formed by the community, which has specific number of members like 15 or 20. Usually, the number of members in one SHG does not exceed twenty.

- o The SHG shouldn't have more than one member from a particular family. This allows the inclusion of many families.

- o In such a group, the poorest would come together for emergency, disaster, social reasons, economic support to each other have ease of conversation, social interaction and economic interactions.

- o NABARD introduced **SHG-Bank Linkage Programme in 1992-1993** as a microfinance innovation.

- o SHGs have been an effective mechanism for poor women in the rural areas who usually are unbanked.

Functions of the SHGs

- o **Initiate and maintain savings within the group**: All members must regularly save at least a small amount. These savings allow them to get future credits for their group.

- o **Lending loans to the members**: The savings made by the SHG must be used to provide loans to members of the group. Everything related to the loan must be decided within the group.

- o **Solving common problems**: SHGs mostly consist of individuals who face similar problems. The grouping should essentially help the individual overcome these problems through discussions and interactions within the group and overcoming the problems and finding a common and united solution to the problems.

- o **Bank Loans**: SHGs must work on getting a collective guarantee system so that they can avail loans from official sources.

SAdvantages of SHGs

- o **Combating social evils**: The SHGs play a crucial role in overcoming social evils like alcoholism, drug addiction, gambling, etc.

- o **Women empowerment**: Women SHGs make its members independent from social constraints and allow them to make independent decisions. They can even actively participate in the gram sabha.

o **Active participation in democracy**: SHGs can actively participate in the aspects of local governance. This would mean the inclusion of weaker and marginalised sections of the society in the local governance.

o **Increase employment opportunities in rural India**: It allows for micro-level entrepreneurship within the rural society and reduces too much dependence on agriculture.

o **Easier access to government schemes**: The government schemes are mostly meant for the marginalised sections of the society. The inclusion and identification of these people are highly difficult. If they are grouped together, it is easier for the government to identify those who are in need of assistance quickly and efficiently. It also prevents the exploitation and corruption of the government at the ground level.

o **Improves the standard of living**: The collective team effort by the SHGs for financial inclusion allows for the improvement in the living standard, family planning, healthcare, of the vulnerable sections of the society.

o **Financial discipline**: The members of the SHGs are encouraged to open savings accounts in banks. This assures improved living conditions, increased spending on education, health, etc.

Limitations of SHGs

o **Too much dependence on government and NGOs**: Many SHGs are dependent on the promoter agencies for their survival. In case these agencies withdraw their support, the SHGs are vulnerable to downfall.

o **Lacks qualified facilitator**: The facilitators do not have professional training with regards to organising SHGs.

o **Lacks up-gradation of skills**: Most SHGs are not making use of new technological innovations and skills. This is because there is limited awareness with regards to new technologies and they do not have the necessary skills to make use of the same. Furthermore, there is a lack of effective mechanisms that promote skill developments in rural areas.

o **SHGs are run by non-professionals**: There is no professionalism within the SHGs. This does not promote the expansion and improvement of the SHGs. This does not allow for the increase of wages of the members and improvement in their living conditions. This also leads to error in accounting and mismanagement of the funds.

o **Lacks security**: SHGs are mostly not registered. They are run based on the trust between the members. The savings made by the SHG members may not be safe, which brings in the mistrust between the members.

MANUAL SCAVENGING

o Manual scavenging refers to any practice that involves physically removing human excrement from dry toilets with bare hands, brooms and metal scrappers.

o In Indian contexts manual scavengers include toilet cleaners and caretakers in domestic, public and institutional settings, those who work at faecal waste treatment and disposal sites, those who empty pits and septic tanks and other faecal sludge handlers who clean sewer and manholes.

o Most deaths related to manual scavenging occur on account of asphyxiation due to poisonous gases particularly carbon monoxide poisoning.

o Human faeces and urine carry a number of pathogens including Hepatitis A, E. coli, Rotovirus, Norovirus, and pinworms.

o Repeated handling of human excreta without protection leads to respiratory and skin diseases, anaemia, jaundice, trachoma etc.

Steps to curb Manual Scavenging

o **The Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act 1993** was enacted to ban manual scavenging in India which prohibited employing workers as a criminal offence.

o However, given that manual scavenging is a caste-based profession it continued to be rampant in India.

o Thus in order to extend wider protection to manual scavengers The Prohibition of Employment of Manual Scavengers and Their Rehabilitation Act was enacted in 2013.

o The act intends to eliminate insanitary latrines completely and prohibit employment as manual scavengers and hazardous manual cleaning of sewers and septic tanks.

o Every offence under this Act shall be cognizable and non-bailable.

Supreme Court Directive on Manual Scavenging

o In 2014, a three-judge SC Bench directed all the States to abolish manual scavenging in all forms and take steps for rehabilitation of manual scavengers.

o Accordingly, the court instituted a compensation of Rs. 10 lakh for families of persons who die due to manual scavenging.

o Besides the apex court has also directed the railways to take time-bound strategy to end manual scavenging on the tracks.

Need for the survey

o India being a caste-based society has witnessed the problem of manual scavenging as a caste-based profession from time immemorial.

o For the 1st time in 1993, an act was enacted to ban manual scavenging in India.

o While manual scavenging was rampant in India, it was grossly under-reported.

o To solve the problem of under-reporting, the definition of manual scavenging was widened by The Prohibition of Employment of Manual Scavengers and Their Rehabilitation Act, 2013. However, even after this there is under-reporting of manual scavengers in India.

DRDO TECHNOLOGY CLUSTERS

NAVAL SYSTEMS & MATERIALS (NS & M)

o It comprises of **six laboratories** - Naval Physical & Oceanographic Laboratory (NPOL) at Kochi, Naval Science & Technological Laboratory (NSTL) at Visakhapatnam, Naval Materials Research Laboratory (NMRL) at Ambernath, Defence Metallurgical Research Laboratory (DMRL) at Hyderabad, Defence Materials Stores Research & Development Establishment (DMSRDE) at Kanpur, and Defence Laboratory (DLJ) at Jodhpur.

o The NS & M cluster is headed by the Director General (Naval Systems & Materials), with Headquarters at Visakhapatnam.

o NPOL, NSTL, NMRL, DMRL, DMSRDE and DLJ with DG Headquarters at Visakhapatnam.

o Naval Science & Materials cluster provides cutting edge naval and material solutions for the Armed Forces. The cluster has developed state-of-the-art underwater sensors and surveillance systems; underwater weapons and associated systems; Air Independent Propulsion systems; protection technologies for marine platforms; stealth and camouflage technologies for land, air and naval platforms; advanced metallic, ceramic, polymeric and composite materials for structural and functional application; and nuclear radiation management technologies.

Vision: To provide cutting-edge technologies and systems for the Indian Navy, and a complete materials solution to DRDO and the three services.

Mission: Development of

o State-of-the art underwater sensors & surveillance systems, underwater weapons & associated systems, Air Independent Propulsion systems, and protection technologies for marine platforms.

o Stealth and camouflage technologies for land, air and naval platforms.

o Advanced metallic, ceramic, polymeric and composite materials for structural and functional application.

o Nuclear radiation management technologies.

AERONAUTICAL SYSTEMS

o Aeronautical Systems cluster is engaged in the development of s**tate-of-the-art unmanned Air Vehicles, Aero Gas Turbine Engine Technology, Airborne Surveillance Systems, Parachutes, Decelerators and Lighter-than-Air System**s.

o The cluster comprises of **four labs** – ADE, ADRDE, CABS, GTRE and a centre CEMILAC which provides concurrent airworthiness certification, support to indigenous development to certify upgrades and integration of imported and indigenous systems.

o **Vision:** To be a centre of excellence for design and development of state-of-the-art UAVs, Aero Gas Turbine Engine Technology, Airborne Surveillance Systems, Technologies and Systems related to Parachute, Decelerators and Lighter-than-Air systems for the Services (Armed Forces).

o **Mission:** To design, develop and lead to production of UAVs; key technologies and infrastructure for building indigenous Airborne Surveillance systems; entire range of Parachutes and Lighter-than-Air Systems; design and develop affordable aero gas turbine engine systems and their derivatives to meet the needs of the Services (Armed Forces).

ARMAMENT & COMBAT ENGINEERING SYSTEMS (ACE)

o It focuses on research & development of armaments, explosives, land based combat vehicles & engineering equipment. Labs under this cluster are also involved in the production of systems through Transfer of Technology (ToT).

o Armament labs have achieved high degree of self-reliance in a number of areas, viz., armaments, ammunitions, missiles, gun propellants, high explosives for warheads, pyrotechnics for various applications, synthesis and characterization of new energetic materials, electro explosive devices, high energy materials and pilot plant facilities.

o Combat Engineering labs are engaged in the development of systems / platforms like MBT, bridging systems, launchers for missiles & wheeled as well as tracked vehicles. Technologies developed by the labs include transmission & suspension for tracked vehicles, hydro-pneumatic systems for launchers, accurate forecast & control of avalanches, etc. ACE cluster includes eight labs – ACEM, ARDE, CVRDE, DTRL, HEMRL, PXE, R&DE(E), SASE, VRDE.

Vision: To establish centers of excellence for technology development for realigning State of the Art Armaments, Combat Vehicles & Engineering Systems.

Mission

o Design and Development of State of the Art Technology and Systems in

o Armaments and High Energy Materials

o Armoured Vehicles & Mechanical Equipments

o Mobility & counter-mobility for Combat Equipments

o Intelligence Systems for Trafficability& safe mobility in all Terrain

o Working in Synergy with Academics, national research institutions, Services and through optimal utilization of collaborative efforts.

MISSILES AND STRATEGIC SYSTEMS (MSS)

o MSS Cluster is responsible for the **design and development of state-of-the-art Missiles and Strategic Systems** required for the deterrence and defence of the country.

o The Cluster comprises of **five laboratories** - DRDL, RCI, ASL, TBRL, ITR, and various others centres for testing, integration and analysis of the systems being designed.

o MSS cluster is working on technologies like Aerodynamics and Airframe Design; Solid, Liquid, Ramjet and Scramjet Propulsion; Navigation, Control, Guidance and Homing Systems; On-board Power Supply, Warhead Systems, Launch Systems as well as the Command and Control Systems for missile systems.

Vision: Empower the nation with state-of-the-art indigenous systems and technologies for missile based weapon systems deployable from underwater to outer space.

Mission

o Design, development and leading-to-production of systems and technologies for missile based weapon systems deployable from underwater to outer space.

o Ensure product support, product upgrade and end-of-life replacement.

o Establish critical infrastructure and facilities for design, testing and evaluation.

ELECTRONICS AND COMMUNICATION SYSTEMS

o ECS Cluster has a mandate to design and develop electronic, electro-optical and laser based sensors and systems. The Cluster consists of laboratories DARE, DEAL, DLRL, IRDE, LASTEC, LRDE and the Cognitive Technology Lab.

o The cluster laboratories have developed state of art technologies in the fields of EW Systems, Radars, Electro-optic Equipment, Laser Sources & sensors, Directed Energy Weapon Systems and Communication Systems used in various

Flagship Programmes and platforms of DRDO and ADA viz., Missile programmes, Unmanned Air Vehicles, Airborne Early Warning & Control System, Aerostats, Main Battle Tank, Integrated Coastal Surveillance System and Light Combat Aircraft etc. Apart from this, many of the systems and sensors developed by the Cluster Labs are deployed and are being used by Indian Armed forces and paramilitary services.

o **Vision:** To become a Centre of Excellence in the field of EW, DEW, EO, Laser, Radar and Communication Systems and related technologies.

o **Mission:** Design, Development, Evaluation and ToT leading to Production and Induction of Advanced EW, DEW, EO, Laser, Radar and Communication Systems and to establish self-reliance in these Critical Technologies.

LIFE SCIENCES

o Equipping the Services with the best, cutting-edge weapon systems and platforms do not really achieve their intended purpose until the integral human component of the war machine is also optimized in terms of psychological, physiological and nutritional well-being, with life support systems and protection from all conceivable operational hazards.

o It is in this very theatre that a group of laboratories in the DRDO comprising the Life Sciences (LS) cluster are focusing their R&D efforts.

o Right from the selection of officers and men for various types of jobs in the Armed Forces, promulgating optimized ration scales with provisioning of fresh and processed foods tailored to the Indian dietary habits and operational needs, developing acclimatization schedules for harsh terrain, specialized protective clothing, biomedical devices and protective gear, life support systems in hostile and challenging environments, countering strategies to overcome Chemical, Biological, Radiological and Nuclear(CBRN) threats.

o In addition to their detection, protection, decontamination and medical management of CBRN eventualities, psycho-socio-behavioral methodologies to cope with stresses, alternative systems/ strategies to enhance performance etc., all have been the contributions of these laboratories over the years.

Over the last five decades, the endeavors of Life Sciences Cluster laboratories have been instrumental in:

o Defending against and recovering from CBRN hazards

o Saving lives through life support systems

o Sustaining operations by customized nutrition

o Optimizing performance through human engineering approach

o Reinforcing adaptation through acclimatization processes

o Reducing combat stress by counseling & training

o Creating specialized human capital by selection & training

Vision: To be a leader in optimizing the performance and wellbeing of the man behind the weapon through translational research in life sciences

Mission

o Design and Develop State-of-Art Technologies to Protect the Warfighters

o To Equip the Soldier with High Performance Protective Systems to Enhance Combat Efficiency

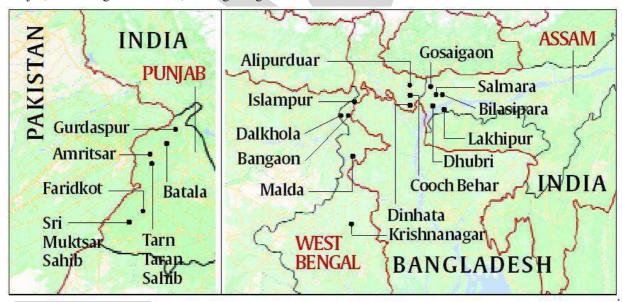# MICRO ELECTRONIC DEVICES, COMPUTATIONAL SYSTEMS & CYBER SYSTEMS (MED & COS)

o The MED & CoS Cluster encompasses two areas viz. **Micro Electronic Devices (MED)** and **Computational Systems & Cyber Systems (CoS).**

o The Micro Electronic Devices (MED) sub-cluster focuses on thrust areas and technologies relating to Microwave Tubes, Solid State Electronics including Micro Electronic Device design and manufacturing.

o This sub-cluster comprises three laboratories namely, Advanced Numerical Research and Analysis Group (ANURAG), Hyderabad, Microwave Tube Research & Development Centre (MTRDC), Bengaluru, and Solid State Physics Laboratory (SSPL), Delhi.

o The Computational Systems (CoS) sub-cluster focuses on systems and technologies relating to Artificial Intelligence, Robotics, Command and Control, Networking, Information and Communication Security, Secure/Trusted Computing Platforms, HPC, Cryptology, Information Security, and Cyber Security leading to development of Mission Critical products for battle field communication and management systems. This sub-cluster comprises Centre for Artificial Intelligence & Robotics (CAIR), Bengaluru and Scientific Analysis Group (SAG), Delhi.

✚ BORDER SECURITY FORCE

o The Ministry of Home Affairs (MHA) has e**xtended the jurisdiction of the Border Security Force (BSF) up to 50 km inside the international borders in Punjab, West Bengal and Assam.**

o The BSF's powers — which include arrest, search and seizure — were limited to up to 15 km in these states. At the same time, the Ministry has reduced BSF's area of operation in Gujarat from 80 km from the border to 50 km.

o The move, announced by a gazette notification, has been criticised by the Punjab and West Bengal governments, which have called it an attack on the federal structure and an attempt to curtail the rights of the state police.

o It amends the schedule of an earlier notification of July 3, 2014 in terms of the BSF's jurisdiction, which it outlines as: "the whole of the area comprised in the States of Manipur, Mizoram, Tripura, Nagaland and Meghalaya and Union Territories of Jammu and Kashmir and Ladakh and so much of the area comprised within a belt of fifty kilometres in the States of Gujarat, Rajasthan, Punjab, West Bengal and Assam, running along the borders of India".

o The government said it was exercising the powers under the Border Security Force Act of 1968.

o In its 2014 notification, the MHA had outlined BSF's jurisdiction as "the whole of the area comprised in the States of Manipur, Mizoram, Tripura, Nagaland and Meghalaya and so much of the area comprised within a belt of eighty kilometres in the State of Gujarat, fifty kilometres in the State of Rajasthan and fifteen kilometres in the States of Punjab, West Bengal and Assam, running along the borders of India".

What kind of powers can the BSF exercise in this jurisdiction?

o Its jurisdiction has been extended only in respect of the powers it enjoys under Criminal Procedure Code (CrPC), Passport (Entry into India) Act, 1920 and the Passport Act, 1967.

o BSF currently has powers to arrest and search under these laws.

o It also has powers to arrest, search and seize under the NDPS Act, Arms Act, Customs Act and certain other laws. Its jurisdiction under these laws has not been changed, meaning its powers under these will continue to be only up to 15 km inside the border in Punjab, Assam and West Bengal, and will remain as far as 80 km in Gujarat.
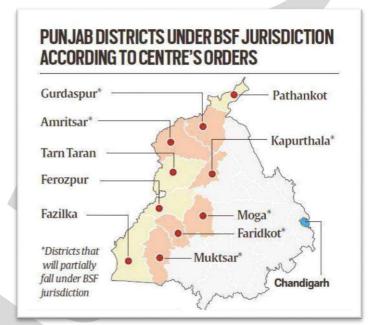
Why and when were these powers given to BSF?

o In 1969, the BSF first got powers to arrest and search under the CrPC with respect to certain laws such as the Foreigners Act, The Passport Act, forex laws and Customs Act. BSF sources said even before 2014, they had a jurisdiction of 15 km inside the border in several states.

o At that time, border areas were sparsely populated and there were hardly any police stations for miles. To prevent trans-border crimes, it was felt necessary that BSF is given powers to arrest. While police stations have now come up near the border, they continue to be short-staffed.

Why has the government extended the jurisdiction?

o Sources said the objective of the move is to bring in uniformity and also to increase operational efficiency.

o Sources said BSF often gets information relating to crime scenes that may be out of their jurisdiction. In West Bengal at times we get information that smugglers have gathered over 100 cows in a village and will take them to the border late in the night. If we act immediately, we can get all the cattle at one place. When they come to the border, they will be scattered and running," an officer said.

o MHA sources said the move was also necessitated due to increasing instances of drones dropping weapons and drugs in Jammu and Kashmir and Punjab. However, the kind of drones spotted so far do not have a range beyond 20 km.

PUNJAB DISTRICTS UNDER BSF JURISDICTION ACCORDING TO CENTRE'S ORDERS

Gurdaspur* — Pathankot
Amritsar* — Kapurthala*
Tarn Taran
Ferozpur
Fazilka — Moga* / Faridkot*
Muktsar*
*Districts that will partially fall under BSF jurisdiction
Chandigarh

o There has been no official explanation for why BSF's jurisdiction has not been increased under the Arms Act, Customs Act and NDPS Act, which cover most of the smuggling offences on the border and deal with far greater offences.

Will it impact police jurisdiction?

At a basic level, the states can argue that law and order is a state subject and enhancing BSF's jurisdiction infringes upon powers of the state government.

o As per government, this is not an attack on the federal structure. Rather this is going to complement the efforts of the local police. It is an enabling provision. It's not that the local police can't act within the jurisdiction of the BSF. It's just that sometimes we don't have enough time and so BSF has been empowered to act till a greater distance and in turn strengthen the hands of the state police.

o There is no conflict with the state police here. In coming days, the state police will feel happy about these changes as they will find their state is more secure.

How will it be implemented?

o Until now, state police and border forces have been working in tandem with minor, occasional differences. Now, with the issue taking political colour, implementation could be tricky if there are difficulties in coordination in future.

o For example, be it the earlier 15 km or the enhanced 50 km, the BSF jurisdiction is not marked on a map. Sources said it is largely based on understanding between police and BSF. "If a problem arises, maybe we will devise a way to mark our jurisdiction. Currently it is a rough estimate as to which village or town is how many kilometres from the border," a senior BSF officer said.

o Another officer, who has served in Punjab, said local police often have poor understanding of the BSF jurisdiction. "Once, in Punjab, smugglers fired upon BSF over 150 m inside the Indian border when intercepted. In retaliatory fire,

the smugglers were killed. The police began arguing why we had killed them when they were inside the border. It had to be explained that jurisdiction of BSF ran much deeper, and it was self-defence," the officer said.

o He said the BSF hasn't even properly utilised its powers within 15 km. "No one goes even that far. No BSF officer wants to take up cudgels with the state police unnecessarily. After all if you can't prosecute, you actually have no power," he said.

INDIA- US UAV PACT

o India and the United States have signed an agreement recently to co-develop air-launched Unmanned Aerial Vehicles (UAV) under the US-India Defense Technology and Trade Initiative, a bilateral defense cooperation mechanism that promotes collaborative technology exchange.

o The agreement is the inaugural co-development project under the **US-India Defense Technology and Trade Initiative**, a bilateral defense cooperation mechanism that promotes collaborative technology exchange, strengthens cooperative research, and enables co-production/co-development of defense systems for sustainment and modernization of military forces.

o The project is valued at more than USD 22 million with costs shared equally, and marks the largest-ever defense Research, Development, Test and Evaluation collaboration between the United States and India.

o The **objectives** are the Design, Development, Demonstration, Test and Evaluation of technologies including physical hardware such as small UAVs, avionics, payload power, propulsion, and launch systems through prototyping that meet the operational requirements of the Indian and US Air Forces.

o The co-development project will be carried out jointly between the **US Air Force Research Lab (AFRL)** and India's **Defence Research and Development Organisation (DRDO)**.

C-295 MW TRANSPORT AIRCRAFT

o The procurement of **56 C-295MW transport aircraft from Airbus Defence and Space S.A., Spain** approved by the Cabinet Committee on Security marks the culmination of a decade-long process by the Indian Air Force (IAF) to replace the ageing Avro aircraft in service, pending signing of the formal contract.

o This is the first project of its kind in which a military aircraft will be manufactured in India under technology transfer by a private company and is expected to cost close to $3bn.

o The deal has become even more critical for the IAF as a separate project to jointly co-develop and produce a Medium Transport Aircraft (MTA) of 20 tonnes with Russia to replace the An-32s in service was scrapped after initial design discussions.

o The IAF has 56 Avro transport aircraft procured in the 1960s and in urgent need of replacement.

o The C-295MW is a transport aircraft of 5-10 tonne capacity and has a rear ramp door for quick reaction and para dropping of troops and cargo. It is powered by Pratt & Whitney PW127 engines, part of the PW100 family. All 56 aircraft will be installed with indigenous Electronic Warfare Suite.

o The project would give a boost to aerospace ecosystem in India wherein several Micro, Small and Medium Enterprises spread over the country would be involved in manufacturing of parts of the aircraft.

o On the project spread, the Ministry said that a large number of detail parts, sub-assemblies and major component assemblies of aero structure were scheduled to be manufactured in India. The programme would act as a catalyst in employment generation in the aerospace ecosystem of the country and was expected to generate 600 highly skilled jobs directly, over 3,000 indirect jobs and an additional 3,000 medium skill employment opportunities with more than 42.5 lakh man hours of work within the aerospace and defence sector of India.

o During the process of manufacturing in India, it is expected that all the suppliers of Tata Consortium who will be involved in special processes will gain and maintain globally recognised National Aerospace and Defence Contractors Accreditation Program accreditation. It will involve development of specialised infrastructure in form of hangars, buildings, aprons and taxiway.

INDIA AND AUSTRALIA NAVY TALKS

o India and Australia inked the terms of reference (ToR) for the conduct of navy to navy talks under the framework of **'Joint Guidance for the India-Australia Navy to Navy Relationship'**.

o The document would be pivotal in consolidating the shared commitment to promote peace, security, stability and prosperity in the Indo-Pacific region.

o The ToR set out the broad objective of achieving deeper mutual understanding, trust and transparency, improved goodwill and understanding of each other's concerns and future directions, and provides detailed guidance for the conduct of the bilateral talks. They also provide flexibility for implementation of separate agreements based on the specific outcomes of the talks.

o This is the **first such document signed by the Indian Navy with any country**.

o The 'Joint Guidance' document sets the Navy to Navy talks as the principal medium for guiding the bilateral relationship.

o Noting that India and Australia have grown closer since the first Navy to Navy talks in 2005, the statement highlighted the Comprehensive Strategic Partnership, Mutual Logistics Support Agreement, conduct of trilateral Maritime Security Workshop and the Australian Navy's participation in **Exercise MALABAR** as milestones of the bilateral defence relations between the two nations.

o With over a decade of bilateral talks, they remain more committed than ever to strengthen and deepen this important Navy to Navy relationship.

HISTORY AND CULTURE
(Ancient; Medieval and Modern)

ROCK CUT CAVE TEMPLES

✤ MASROOR CAVE TEMPLES, HIMACHAL PRADESH

- Also known as Himalayan Pyramid, **Masroor Rock Cut Temple** is a complex of 15 monolithic rock-cut monuments. Each of them is carved in a traditional Indo Aryan style that is very exclusive for the northern part of India.
- There is a lake near this temple complex that is known as Masroor Lake and reflection of the temple can be seen in this lake.

✤ VARAHA CAVE TEMPLES, TAMIL NADU

- Situated in Mamallapuram of Tamil Nadu, Varaha Cave Temples is a gorgeous example of **Pallava architecture** that dates back to 7th century.
- The temple is one of the finest testaments to the ancient **Vishwakarma Sthapathis**.
- The most eminent statue in the cave temple is of Lord Vishnu, which incarnated in the form of a Varaha or boar elevating earth from the sea. Many other mythological figures are also carved in this temple.

✤ KANHERI CAVES, MAHARASHTRA

- Kanheri Caves are also the group of caves and rock-cut monuments sliced into a huge basalt projection in the Sanjay Gandhi National Park.
- These caves feature Buddhist sculptures along with relief carvings, paintings and inscriptions dating back to the 1st century BCE to the 10th century CE.
- Kanheri comes from the **Sanskrit Krishnagiri, which means Black Mountain**.

✤ BADAMI CAVE TEMPLES, KARNATAKA

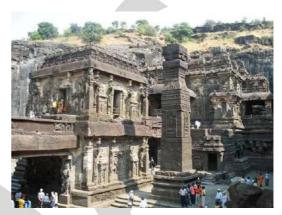- Badami Cave Temples are the complex of four majestic temples in the northern part of Karnataka.

o This temple structure dates back from 6th century and is undoubtedly an epitome of Indian rock-cut architecture, mainly **Badami Chalukya architecture**.

o The Badami cave temples stand for several previously recognized examples of Hindu temples. It is situated on the west bank of an artificial lake.

ELLORA CAVES, MAHARASHTRA

o Located in Aurangabad district of Maharashtra, Ellora Caves is one of the rock-cut architectural marvels of India.

o This archaeological site was constructed by **Rashtrakuta dynasty** and comprised of 34 caves.

o The most exclusive aspect of these cave temples is that they signify an ideal combination of Hindu, Jain, Buddhist rock-cut temples.

AJANTA CAVES

o Ajanta Caves are among the **UNESCO World Heritage Site.**

o It is a **Buddhist temple complex** that comprised of 30 rock-cut Buddhist cave monuments.

o These caves feature amazing paintings and finest sculptures, which are supposed to be the best existing examples of Indian art. This incredible temple complex is being visited by a huge number of tourists every year.

ELEPHANTA CAVES, MAHARASHTRA

o Elephanta Caves are the network of beautifully carved caves located on Elephanta Island of Maharashtra.

o These are mainly two groups of caves, including **five Hindu caves and two Buddhist caves**.

o In Hindu caves, one can see wonderful rock cut stone sculptures of Lord Shiva.

UDAYAGIRI CAVES, MADHYA PRADESH

o Located in Vidisha, Madhya Pradesh, Udayagiri Caves consists of some of the most ancient Hindu Cave Temples.

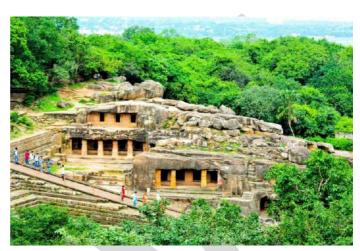o The site is noteworthy for the sculpture of **Lord Vishnu's incarnation of Varaha**.

o The cave complex is comprised of 20 caves, including 1 of Jainism and 19 of Hinduism.

UDAYAGIRI AND KHANDAGIRI CAVES, ORISSA

o A blend of natural and artificial caves, Udayagiri and Khandagiri Caves in Orissa are known for their archaeological, historical and religious significance.
o The caves are located on two nearby hills called Udayagiri and Khandagir. Udayagiri has 18 caves and Khandagiri has 15 caves. Various religious inscriptions are done on these caves.
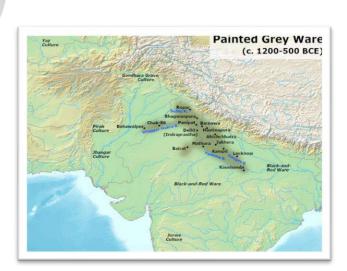
THE PANCHA RATHAS, MAHABALIPURAM

o This Pancha Rathas Monumental Complex is home to several temples, rathas and other historic monuments that have led it to be listed into UNESCO World Heritage Sites.
o This complex has the most amazing rock-cut temple called the **Pancha Rathas.** The Pancha Rathas features five monolith rock-cut temples, which are carved from a single stone.
o Each of these Ratha is named after the Pandavas and Draupadi, including Draupadi Ratha, Arjuna Ratha, Bhima Ratha, Nakula Sahadeva Ratha and Dharmaraja Ratha.

PAINTED GREY WARE

o It is an **Iron Age Indian culture** of the **western Gangetic plain and the Ghaggar-Hakra valley** in the Indian subcontinent, conventionally dated **1200 to 600–500 BCE**
o It is characterized by a **style of fine, grey pottery painted with geometric patterns in black.**
o PGW culture is associated with village and town settlements, domesticated horses, ivory-working, and the advent of iron metallurgy
o Pottery generally has a red surface and is wheel thrown although handmade ones too exist
o Polished wares were well
o Most of the pottery is **polychrome** meaning more than two colours are used to colour the pottery.
o Most of the pottery is such that they usually have flat bases
o **Geometrical design** along with paintings depicting flora and fauna are observe
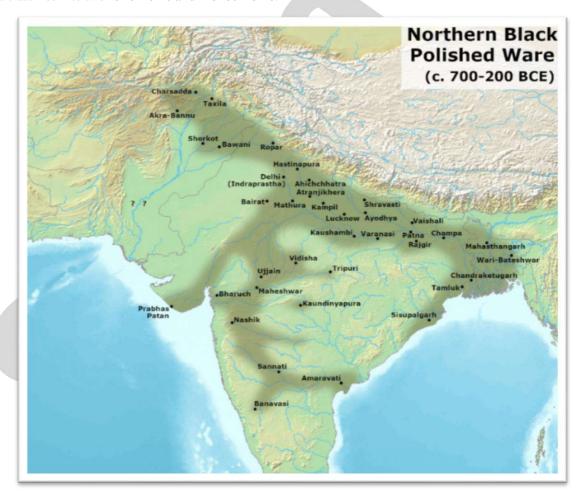o **Perforated pottery** was also found may be used for straining liquor.

o Pottery throughout the civilization was uniform (mass thrown) revealing some form of control and leaving less space of individual creativity

o Presence of luxurious pottery obtained from certain sites reveals economic stratification in the society.

✦ NORTHERN BLACK POLISHED WARE (NBPW)

o It is an urban Iron Age Indian culture of the Indian Subcontinent, lasting c. 700–200 BCE (proto NBPW between 1200 and 700 BCE).

o It developed beginning around 700 BCE, in the **late Vedic period, and peaked from c. 500–300 BCE**, coinciding with the emergence of 16 great states or **Mahajanapada** in Northern India, and the subsequent rise of the Mauryan Empire.

Some notable NBPW sites in India are-

o Charsada (ancient Pushkalavati) and Taxila, in Pakistan

o Delhi or Indraprastha

o Hastinapura, Mathura, Kampil/Kampilya, Ahichatra, Ayodhya, Sravasti, Kausambi, Varanasi, all in Uttar Pradesh

o Vaishali, Rajgir, Pataliputra, and Champa in Bihar

o Ujjain and Vidisha in Madhya Pradesh

o It is a glossy shiny type of pottery

o It is made of fine fabric and served as tableware for richer class. It is considered as deluxe pottery only found with the elites revealing societal stratification which was a result of Brahmanical hegemony.

o It is classified into two- **bi-chrome and monochrome**.

o Monochrome pottery has a fine and thin fabric. Potted on fast wheel and have a strikingly lustrous surface. 90% of this type is jet black, brownish black and bluish black and 10% have colours like pink, golden, brown among others.

o Bi-chrome pottery is found less. It shows all the features of monochrome except that it shows combination of two colours.

OCHRE COLORED POTTERY (OCP)

o It is a **Bronze Age culture** of the Indo-Gangetic Plain, generally dated 2000-1500 BCE, extending from **eastern Punjab to northeastern Rajasthan and western Uttar Pradesh.**

o Artefacts of this culture show similarities with both the **Late Harappan culture and the Vedic culture**.

o As its name implies, its main distinguishing feature is its ochre colour, which gives the appearance of being badly fired.

o Its other characteristic feature is a porous texture and a weathering out of the edges of sherds (broken piece of ceramic material)

o It was sometimes decorated with black painted bands and incised patterns. It is often found in association with copper hoards, which are assemblages of copper weapons and other artifacts such as anthropomorphic figures.

THAMIRABARANI CIVILISATION

o The Thamirabarani civilisation in Tamil Nadu is at least **3,200 years old,** retrieved from archeological excavations in Sivakalai, Thoothukudi district.

Significance of the Findings:

o It could lead to evidence that there was a city civilisation (Porunai River (Thamirabarani) civilization) in south India as long back as 3,200 years ago, the later part of the Indus Valley Civilisation.

o In the first phase, studies would be undertaken at the ancient port of **Muziris, now known as Pattanam**, in Kerala, to establish the ancientness and culture of the Chera empire.

o Research would be conducted at Quseir al-Qadim and Pernica Anekke in Egypt, which were once part of the Roman empire, as well as in Khor Rori in Oman, to establish the Tamils' trade relations with these countries. Potsherds bearing Tamil scripts have been found in these countries.

o Studies would also be conducted in Southeast Asian countries, such as Indonesia, Thailand, Malaysia and Vietnam, where King Rajendra Chola had established supremacy.

o The three ruling houses of Tamil India, the Pandyas, Cheras, and Cholas, fought for supremacy of southern India and Sri Lanka. These dynasties promoted early literature on the Indian subcontinent and built important Hindu temples.

o Sangam literature, which was written over a period of six centuries (3rd BCE – 3rd CE) contains references to various Chola, Chera and Pandya kings.

Thamirabarani River

o The shortest river in the state (Tamil Nadu). 128 Km in length.

o the Thamirabarani starts in Pothigai hills of the Western Ghats in the Ambasamudram taluk, flows through Tirunelveli and Thoothukudi districts and empties at Korkai (Tirunelveli district) into the Gulf of Mannar (Bay of Bengal).

MULTIPLE CHOICE QUESTIONS
(100 MCQs)

Q1. Which of the following countries does not border Caspian Sea?

(a) Uzbekistan   (b) Kazakhstan

(c) Azerbaijan   (d) Iran

Q2. Aral Sea lies at the border of which of the following countries?

(a) Uzbekistan and Turkmenistan

(b) Kazakhstan and Uzbekistan

(c) Uzbekistan and Kyrgyzstan

(d) Tajikistan and Kyrgyzstan

Q3. Syr Darya and Amu Darya drain into the

(a) Caspian Sea   (b) Lake Balkash

(c) Aral Sea   (d) Lake Baikal

Q4. Match the following:

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

Code:

(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

Q5. Which of following statements is/are correct?

1. Aleutian Islands lie in Russian Federation.
2. Kuril Islands lie in Alaska.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q6. Parcel Islands lie in the

(a) Philippine Sea   (b) East China Sea

(c) South China Sea   (d) Sulu Sea

Q7. Consider the following statements:

1. Ryukyu Islands lie in the Philippines.
2. Cambodia and Vietnam border Gulf of Thailand.

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

Q8. Which of following statements is/are correct?

1. The South Asian Association for Regional Cooperation (SAARC) was established with the signing of the SAARC Charter in Dhaka.
2. The Headquarters and Secretariat of the Association are at Kathmandu, Nepal.

Choose the correct code:

(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 following statements is/are correct?

1. Lake Van lies in Turkey.
2. Ankara is the financial centre of Turkey.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q11. Match the following:

	Island		Country
A.	Reunion	1.	Australia
B.	Socotra	2.	France
C.	Agalega	3.	Yemen
D.	Cocos	4.	Mauritius

Code:

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

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

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

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

Q12. Karbi Anglong district lies in which of the following states?

(a) Mizoram (b) Assam

(c) Manipur (d) Tripura

Q13. **Which of the following statements is/are correct?**

1. The eight core sector industries have a combined share of 40.27 per cent in the Index of Industrial Production (IIP).
2. Electricity generation has the highest percentage of weightage in the eight core sector industries.

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

1. The bank credit is categorized into food credit and non-food credit.
2. The food credit indicates the lending made by banks to the Food Corporation of India (FCI) mainly for procuring foodgrains.

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 the following statements is/are correct?**

1. WTO officially commenced operations on 1 January 1995, pursuant to the 1994 Marrakesh Agreement, thus replacing the General Agreement on Tariffs and Trade (GATT).
2. The WTO is headquartered in Genoa.

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

Q16. **Which of following statements is/are correct?**

1. The Chambal River acts as a state boundary between Uttar Pradesh, Madhya Pradesh and Rajasthan.
2. Red-crowned Roofed Turtle are found in the Chambal river.

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. Kadiri-2 and Kadiri-3 are the varieties of Mustard in India.
2. Rajasthan is the largest producer of Rapeseed and Mustard.

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. 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

Q19. **Which of following statements is/are correct?**

1. Nipah virus infection is a zoonotic illness that is transmitted to people from animals.
2. Fruit bats of the Pteropodidae family are the natural host of Nipah virus.

Choose the correct code:

(a) 1 only (b) 2 only

(c) Both 1 and 2 (d) Neither 1 nor 2

Q20. **Which of following statements is/are correct?**

1. Protozoa are microscopic worms that live around or inside the plant.
2. Nematodes are larger microbes that love to consume and be surrounded by bacteria.

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:**

1. IAEA was established independently of the United Nations.
2. IAEA reports to both the United Nations General Assembly and Security Council.

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

Q22. **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.

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

Q23. Consider the following statements:

1. The Jallianwala Bagh protest was against the arrest of pro-Indian independence leaders Dr. Saifuddin Kitchlu and Dr. Satya Pal.

2. The responses on Jallianwala Bagh massacre polarised both the British and Indian people.

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

Q24. Which of the following is not a landlocked country?

(a) Laos   (b) Jordan

(c) Kazakhstan   (d) Peru

Q25. Winter Olympic 2022 will be hosted by

(a) Montreal   (b) Milwaukee

(c) Oslo   (d) Beijing

Q26. Which of the following countries does not border Russia?

(a) Armenia   (b) Georgia

(c) Belarus   (d) Kazakhstan

Q27. Arrange the following rivers from east to west:

(a) Ob - Yenisei - Lena – Volga

(b) Lena– Ob – Yenisei - Volga

(c) Ob- Lena– Yenisei - Volga

(d) Lena – Yenisei – Ob - Volga

Q28. Arrange the following seas from west to east:

(a) Norwegian Sea– Kara Sea – Barents Sea- Laptev Sea

(b) Norwegian Sea – Laptev Sea- Barents Sea – Kara Sea

(c) Norwegian Sea – Barents Sea – Kara Sea – Laptev Sea

(d) Norwegian Sea –Kara Sea – Laptev Sea- Barents Sea

Q29. Which of following statements is/are correct?

1. Lake Baikal lies to the east of Lake Balkash.

2. Aral Sea lies to the west of Lake Balkash.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q30. Which of following statements is/are correct?

1. The Pamir Mountains are a mountain range between Central Asia, South Asia, and East Asia.

2. Much of the Pamir Mountains lie in Turkmenistan.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q31. Which of following statements is/are correct?

1. Guinea lies in West Africa.

2. Liberia is a bordering country of Guinea.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q32. Which of the following is a landlocked country?

(a) Togo   (b) Mali

(c) Benin   (d) Ivory Coast

Q33. Which of following statements is/are correct?

1. Iran is an observer state in Shanghai Cooperation Organisation.

2. Regional Anti-Terrorist Structure (RATS) is part of BRICS.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q34. Which of following statements is/are correct?

1. Article 323A of the Constitution empowers Central Government to set-up by an Act of Parliament Administrative Tribunals.

2. Article 323B of the Constitution provides that the appropriate Legislature may, by law, provide for the adjudication or trial by tribunals of any disputes, complaints, or offences with respect to all or any of the matters specified to which such Legislature has power to make laws.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q35. Which of following statements is/are correct?

1. The SC collegium is headed by the CJI and comprises four other senior most judges of the court.
2. The Second Judges Case (1993) ruling gave the Executive primacy over the Judiciary in judicial appointments.

Choose the correct code:

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

Q36. Which of following statements is/are correct?

1. Minimum Support Prices are announced by the government on the recommendations of Cabinet Committee of Economic Affairs.
2. Rabi crops are the summer season crops.

Choose the correct code:

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

Q37. Dimapur district lies in which of the following states?

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

Q38. Which of the following statements is/are correct?

1. Disinvestment refers to the mechanism in which the Government loses a part of its ownership of the PSUs through the sale of shares.
2. The Disinvestment as a policy was adopted by the Government post 1991 LPG Reforms.

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

Q39. Which of the following statements is/are correct?

1. Anchorage Infrastructure Investment Holding (AIIH) Ltd. is a firm incorporated to invest in the country's infrastructure.
2. AIIH can facilitate the implementation of National Monetisation Plan.

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

Q40. Which of the following statements is/are correct?

1. Oil bonds are, in essence, promissory notes of deferred payment of subsidies that the government owes to oil marketing companies.
2. Taxes and duties account for nearly 30 percent of the price that the consumer pays at a petrol pump.

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

Q41. Which of following statements is/are correct?

1. National Edible Oil Mission-Oil Palm (NMEO-OP) has been launched to rapidly boost exports of edible oil from India.
2. Under NMEO-OP, ₹11,000 crore will be invested in the edible oil ecosystem.

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. Transport and Marketing Assistance (TMA) scheme is introduced by the Government of India for MSMEs manufactured goods.
2. The TMA Scheme is included in the Foreign Trade Policy (2015-20) and was introduced on 01.03.2019.

Choose the correct code:

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

Q43. Which of following statements is/are correct?

1. Hydrogen energy has highest energy content by weight and lowest energy content by volume.
2. Sea water needs to be desalinised before it becomes feasible for electrolysis to produce Hydrogen.

Choose the correct code:

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

Q44. Which of following statements is/are correct?

1. Kuhls, found in Ladakh, are small tanks that collect melting glacier water.
2. Zings are surface water channels found in the mountainous regions of Himachal Pradesh.

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. Fragile X syndrome (FXS) is a genetic disorder.
2. People who have FXS make excessive FMRP protein.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q46. **Consider the following statements:**

1. The C-295MW is a transport aircraft of 5-10 tonne capacity.
2. The C-295MW is purchased by India from France.

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

Q47. **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

Q48. **Consider the following statements:**

1. In IUCN Red list, African elephants are listed as Vulnerable.
2. In IUCN Red list, Asian elephants as Endangered.

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

Q49. **Consider the following statements:**

1. The Mekong River forms the border of Myanmar and Laos.
2. The Mekong River forms the border of Thailand and Laos.

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

Q50. **Asian Games 2022 will be hosted by**

(a) Doha   (b) Kuala Lumpur

(c) Almaty   (d) Hangzhou

Q51. **Which of following statements is/are correct?**

1. Great Australian Bight lies to the north of Australia.
2. Gulf of Carpentaria touches the state of Victoria.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q52. **Arrange the following deserts from north to south:**

(a) Great Sandy Desert – Gibson Desert – Great Victoria Desert

(b) Gibson Desert – Great Sandy Desert - Great Victoria Desert

(c) Great Victoria Desert - Great Sandy Desert – Gibson Desert

(d) Great Victoria Desert - Gibson Desert – Great Sandy Desert

Q53. **Arrange the following mountain ranges from west to east:**

(a) Great Dividing Range – Macdonnell Range– Hammersley Range

(b) Great Dividing Range – Hammersley Range – Macdonnell Range

(c) Hammersley Range – Macdonnell Range– Great Dividing Range

(d) Macdonnell Range– Hammersley Range – Great Dividing Range

Q54. **Which of following statements is/are correct?**

1. Tasman Strait separates Tasmania from Victoria.
2. Mt. Kosciusko lies in the state of Victoria.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q55. **Which of following statements is/are correct?**

1. Adelaide is the capital of New South Wales.
2. Launceston is a city in Tasmania.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q56. **Which of following statements is/are correct?**

1. Cambrian Mountain lie in Wales.
2. Pennines Mountains lie in England.

Choose the correct code:

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

Q57. Which of following statements is/are correct?

1. Isle of Man lies in the Celtic Sea.
2. North Sea lies to the east of Prime Meridian.

Choose the correct code:

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

Q58. Which of following statements is/are correct?

1. England is larger in area than Scotland.
2. Northern Ireland is larger in area than Wales.

Choose the correct code:

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

Q59. The UNGA also makes key decisions for the UN, including:

1. appointing the Secretary-General on the recommendation of the Security Council.
2. electing the non-permanent members of the Security Council.
3. approving the UN budget.

Choose the correct statement/s:

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

Q60. Which of following statements is/are correct?

1. Duman River serves as part of the boundary between China, North Korea and Russia.
2. Duman River flows into Yellow Sea.

Choose the correct code:

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

Q61. Mon and Peren districts lie in which of the following states?

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

Q62. Which of the following statements is/are correct?

1. Net-zero is a state in which a country's emissions are compensated by absorption and removal of greenhouse gases from the atmosphere.
2. Net-zero, which is also referred to as carbon-neutrality, does not mean that a country would bring down its emissions to zero.

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

Q63. Which of the following statements is/are correct?

1. Methane is the simplest hydrocarbon, consisting of one carbon atom and four hydrogen atoms.
2. Burning methane in the presence of oxygen releases carbon dioxide and water vapor.

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

Q64. Which of the following statements is/are correct?

1. Methane is emitted during the production and transport of coal, natural gas, and oil.
2. Nitrous oxide is emitted during agricultural, land use, industrial activities, combustion of fossil fuels and solid waste.

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

Q65. 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

Q66. Which of following statements is/are correct?

1. The Agreement on Agriculture consists of three pillars—domestic support, market access, and export subsidies.
2. WTO Agreement on Agriculture negotiated in the Uruguay Round (1986–1994) includes the classification of subsidies by "boxes".

Choose the correct code:

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

Q67. Which of following statements is/are correct?

1. A corporate bond is debt issued by a company in order for it to raise capital.
2. A corporate bond cannot be traded in the secondary market.

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

Q68. **Which of following statements is/are correct?**

1. E-Shram portal has been launched for the registration of unorganised sector workers.
2. Candidates who register for E Shram will get a Unique Identification Number (UAN) Card.

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

Q69. **Which of following statements is/are correct?**

1. Container Corporation of India Limited (CONCOR) is under the Ministry of Road Transport and Highways.
2. CONCOR operates three core businesses: cargo carrier; terminal operator, warehouse operator & MMLP operation.

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

Q70. **Consider the following statements:**

1. Income Tax Appellate Tribunal (ITAT) was set up in 1941.
2. ITAT was the first experiment in tribunalisation in the history of India.

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

Q71. **Bishnupur and Chandel districts lie in which of the following states?**

(a) Manipur   (b) Jharkhand
(c) West Bengal   (d) Tripura

Q72. **Consider the following statements:**

1. Latakia is a sea port in Syria.
2. Jordan is a landlocked country.

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

Q73. **Consider the following statements:**

1. Gulf of Aqaba lies between Syria and Turkey.
2. Gulf of Suez lies between Egypt and Saudi Arabia.

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

Q74. **Consider the following statements:**

1. Strait of Hormuz connects Persian Gulf and Gulf of Oman.
2. Qatar shares land border with UAE.

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

Q75. **River Euphrates empties into**

(a) Gulf of Oman   (b) Persian Gulf
(c) Gulf of Aqaba   (d) Caspian Sea

Q76. **Which of following statements is/are correct?**

1. Appalachian Mountains lie in the western USA.
2. Rocky Mountains pass through the states of Louisiana and Mississippi .

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

Q77. **Arrange the following lakes from east to west:**

(a) Ontario –Michigan - Huron – Superior
(b) Ontario – Huron – Michigan - Superior
(c) Ontario – Superior - Huron – Michigan
(d) Ontario – Superior– Michigan - Huron

Q78. **Arrange the following landforms from west to east:**

(a) Cascade Range – Columbia Plateau– Rocky Mountains – Great Plains
(b) Cascade Range – Rocky Mountains – Columbia Plateau–Great Plains
(c) Rocky Mountains – Cascade Range – Columbia Plateau–Great Plains
(d) Rocky Mountains – –Great Plains - Cascade Range – Columbia Plateau

Q79. **Which of following statements is/are correct?**

1. Rio-Grande River forms the boundary between USA and Mexico.

2. Yellow Stone National Park is in the state of Oregon.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q80. Which of following statements is/are correct?

1. Columbia Plateau lies to the north of Colorado Plateau.

2. Edwards Plateau lies to the east of Colorado Plateau.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q81. Which of following statements is/are correct?

1. River Chindwin is the tributary of Yangtse River.

2. Shan Plateau lies in eastern Myanmar.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q82. Which of following statements is/are correct?

1. Salween and Chindwin Rivers are in Myanmar.

2. Chin Hills lie to the south of Naga Hills.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q83. Which of the following countries does not border Myanmar?

(a) China   (b) Thailand

(c) Laos   (d) Cambodia

Q84. Which of the following statements is/are correct?

1. Philippine Sea lies to the east of Taiwan.

2. Luzon Strait lies to the north of Taiwan.

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

Q85. Champhai and Mamit districts lie in which of the following states?

(a) Mizoram   (b) Meghalaya

(c) Manipur   (d) Nagaland

Q86. Which of the following statements is/are correct?

1. Mizoram borders both Bangladesh and Myanmar.

2. Mizoram borders Manipur and Tripura.

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

Q87. Which of the following statements is/are correct?

1. Ease of doing business was an index published by the World Bank.

2. Indicators in Ease of doing business included construction permits, registration, getting credit, tax payment mechanism etc.

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

Q88. Which of following statements is/are correct?

1. Castor and Linseed are widely grown edible oilseeds in India.

2. The diverse agro-ecological conditions of India are favourable for growing 9 annual oilseed crops.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q89. Which of following statements is/are correct?

1. First Ministerial Conference on Asian Economic Cooperation held by the United Nations Economic Commission for Asia and the Far East in 1963 set the vision for Asian Development Bank (AD(B).

2. ADB is headquartered in Singapore.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q90. Which of following statements is/are correct?

1. LIC is a statutory Organisation established in 1956.

2. LIC is under Ministry of Finance.

Choose the correct code:

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

Q91. Which of following statements is/are correct?

1. Himalayas are younger than Western Ghats.
2. High montane forest ecosystems of Western Ghats have negligible influence on the Indian monsoon weather pattern.

Choose the correct code:

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

Q92. Which of following statements is/are correct?

1. The Western Ghats traverse through five states.
2. Western Ghats are recognized as one of the world's eight 'hottest hotspots' of biological diversity along with Sri Lanka.

Choose the correct code:

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

Q93. Consider the following statements:

1. World Rhino Day is observed on 12th September.
2. World Rhino Day was first announced by the World Wildlife Fund (WWF) - South Africa in 2010.

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

Q94. Consider the following statements:

1. Indian rhino is the largest of the rhino species.
2. In Dudhwa National Park both tigers and rhinos can be spotted.

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

Q95. Consider the following statements:

1. Dudhwa Tiger Reserve is a protected area in Uttar Pradesh located on the India-Nepal border.
2. The Kishanpur Wildlife Sanctuary is a part of the Dudhwa Tiger Reserve.

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

Q96. Consider the following statements:

1. The heat source involved in the Indian summer monsoon resides over the Pamir Knot.
2. The primary cause of monsoons lies in different warming trends over land and sea.

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

Q97. Consider the following statements:

1. Eco-Sensitive Areas (ESAs) are located within 10 kms around Protected Areas, National Parks and Wildlife Sanctuaries.
2. ESAs are notified by the MoEFCC under Wildlife Protection Act 1972.

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

Q98. Which of the following sequences correctly represents the order of countries from west to east?

(a) Cambodia–Vietnam-Myanmar-Thailand
(b) Myanmar-Thailand-Cambodia-Vietnam
(c) Myanmar-Thailand-Vietnam-Cambodia
(d) Myanmar-Vietnam-Cambodia-Thailand

Q99. Which of the following is false about quantum technology?

(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.

Q100. Which of the following is the nearest port to Chabahar?

(a) Gwadar   (b) Bandar Abbas
(c) Muscat Port   (d) Kandla

➕ ANSWERS

1	2	3	4	5	6	7	8	9	10
a	b	c	d	d	c	b	c	b	a
11	12	13	14	15	16	17	18	19	20
a	b	a	c	a	c	b	c	c	d
21	22	23	24	25	26	27	28	29	30
c	b	c	b	d	a	d	c	c	a
31	32	33	34	35	36	37	38	39	40
c	b	a	c	a	d	b	c	c	a
41	42	43	44	45	46	47	48	49	50
b	b	c	d	a	a	d	c	c	d
51	52	53	54	55	56	57	58	59	60
d	a	c	d	b	c	b	a	d	a
61	62	63	64	65	66	67	68	69	70
b	c	c	c	a	c	a	c	b	c
71	72	73	74	75	76	77	78	79	80
a	a	d	a	b	d	b	a	a	c
81	82	83	84	85	86	87	88	89	90
b	c	d	a	a	c	c	b	a	c
91	92	93	94	95	96	97	98	99	100
a	b	b	c	c	b	a	b	d	a