

ECONOMY

❖ **GDP Growth**

➤ **Context:** India's GDP growth accelerated to 6.1% in the January to March 2023 quarter, lifting the economy's uptick in 2022-23 to 7.2% from the 7% estimated earlier, according to the provisional national income data released by the National Statistical Office (NSO) on Wednesday.

➤ The Gross Value Added (GVA) in the economy is reckoned to have risen 7% in 2022-23, compared to 8.8% in 2021-22, with manufacturing GVA growth sliding to just 1.3% from 11.1% a year ago, despite a 4.5% rebound in the final quarter after six months of contraction.

➤ **Agriculture & services growth:**

- The farm and services sector buoyed economic outcomes as just three of eight broad economic activity segments recorded a higher GVA growth than in 2021-22.
- The agricultural GVA grew 4%, up from 3.5% in the previous year. The financial, real estate and professional services sectors saw their GVA grow 7.1%, compared to 4.7% in 2021-22. The GVA of the trade, hotels, transport, and communication sectors, as well as services related to broadcasting grew 14%, marginally faster than in the previous year.

➤ **Revised GDP, GVA**

- The NSO also revised GDP and GVA numbers lower for the first half of last year, but bumped up the third quarter figures slightly. The first quarter's GDP growth in 2022-23 is now pegged at 13.1%, followed by a 6.2% rise in the second quarter and 4.5% growth in the third, up from the 4.4% estimated in February.
- In GVA terms, the final three months of 2022-23 recorded a three-quarter high of 6.5%. The growth estimates for the first and second quarters were pared to 11.9% and 5.4% respectively, while the third quarter GVA growth was revised higher to 4.7%, from the 4.6% reckoned earlier.

➤ **'Muted consumption growth'**

- As per the RBI's consumer confidence survey "While growth in private final consumption expenditure witnessed a slight uptick to 2.8% in Q4 from 2.2% in Q3, it remained muted, belying the uptick in consumer sentiments,"
- The higher-than-expected GDP growth last year could also temper growth expectations for this year, which the government and central bank expect to be around 6.5%. Amid a global slowdown, maintaining growth over 6% will be challenging, he reckoned.

➤ **'Evenly balanced risks'**

- Chief Economic Advisor (CEA) V. Anantha Nageswaran was more optimistic and said the growth momentum continued across agriculture, industry and services sectors in the fourth quarter. India's 6.1% GDP growth was the fastest among major economies in the fourth quarter, he asserted, adding that prospects look better for this year than they did four months ago.

➤ **Economic resilience**

- Prime Minister Narendra Modi said that the 2022-23 GDP growth figures underscored the resilience of the Indian economy amidst global challenges.
- Exports of goods and services accounted for 23.5% of GDP, the highest since 2014-15, while private consumption hit the highest level since 2006-07 at 58.5% and gross fixed capital formation, reflecting a sustained increase, is at the highest point since 2013-14 at 34% of GDP.
- GVA from the employment-intensive construction sector grew 10% in 2022-23, from 14.8% in 2021-22. Mining and quarrying GVA growth slowed to 4.6% from 7.1%. Electricity, gas, water supply and other utility services' GVA rose 9%, only slightly slower than 9.9% in 2021-22. Public administration, defence and other services' GVA grew 7.2% in 2022-23, compared to 9.7% in the previous year.

Slow expansion

India's quarterly gross domestic product growth accelerated to 6.1% in the first three months of 2023, from 4.5% in the preceding quarter, while yearly economic growth for 2022-23 was 7.2%, compared with 9.1% in 2021-22, according to data released by the National Statistical Office



SCIENCE & TECHNOLOGY

❖ **Is India missing the graphene bus?**

➤ **Context:** What Artificial Intelligence (AI) is to software and quantum computing is to computers, graphene is to materials. These three emerging technologies will disrupt the existing human-machine interface in the

next couple of decades. While India is among the leaders in AI and a potential challenger in quantum computing, it needs to catch up in the area of graphene.

➤ **About Graphene :**

- Graphene is the world's thinnest, strongest, and most conductive material of both electricity and heat. It conducts electricity better than copper. It is 200 times stronger than steel but six times lighter. It is almost perfectly transparent as it absorbs only 2% of light. It is impermeable to gases, even those as light as hydrogen and helium.
- It has the potential to revolutionise electricity, conductivity, energy generation, batteries, sensors and more. Also, when added to other materials, graphene even in small quantities produces composite materials with dramatically transformed qualities.

➤ **Application:**

- Graphene composites are used in aerospace, automotive, sports equipment and construction.
- It is used for high-performance batteries and super-capacitors, touchscreens, and conductive inks.
- Graphene-based sensors are used for environmental monitoring, healthcare and wearable devices.
- Graphene oxide membranes are used for water purification and desalination.
- Graphene-based masks were made during COVID.

➤ **Application in Defence Sector:**

- Graphene is important for defence and aerospace as well. Its exceptional strength makes it promising material for armour and ballistic protection.
- Graphene has the potential to absorb and dissipate electromagnetic waves, making it valuable for developing stealth coatings and materials that reduce radar signatures and electromagnetic interference.
- Graphene is highly sensitive to environmental changes, which makes it an excellent candidate for sensing chemical and biological agents, explosives, radiation, and other hazardous substances. Besides, graphene-based materials can also protect us against chemical and biological attacks. Better energy storage and electronics properties make graphene attractive in defence and aerospace as well as in civil and commercial applications.

➤ Never has one material had such an impact on so many sectors. Materials define an age — the stone age, iron age, plastic age and silicon age. There are reasons to believe that we are entering the graphene age. According to the Grand View Research, the global graphene market size was valued at \$175.9 million in 2022 and is expected to grow at a CAGR of 46.6% between 2023 and 2030.

➤ Although graphene was discovered in 2004, it was difficult to produce high-grade large-scale graphene. However, things are changing fast. As per a report, at least one graphene-enhanced product was launched every week in 2022. Over 300 companies are now producing graphene or its derivatives.

➤ Among the leading countries in graphene research are China, the U.S., the U.K., Japan, South Korea, Russia, and Singapore. Till 2012, graphene-related patent filing was dominated by the U.S. From 2013 to 2016, South Korea and China matched the U.S. After 2017, China surged ahead. In 2018, China filed 218 patents while the other leading countries together filed 79. India had eight filings.

➤ China and Brazil are global leaders in the commercial production of graphene. At the Beijing Graphene Institute, set up in 2018, several companies produce industry-grade graphene products. India produces about one-twentieth compared to China and one-third compared to Brazil.

➤ **India's progress**

- But India's progress has been better than many nations. The Centre for Nano Science and Engineering at IISc Bangalore along with KAS Tech produced a graphene-based system several years ago. Some start-ups and foreign subsidiaries have started graphene or graphene derivatives in India.
- Notably, Tata Steel has succeeded in growing graphene (about 50 micrometers large domains) using annealing and extracting atomic carbon from steel surface. It has also mixed graphene with used plastic products to recycle them as new. India's niche is going to be innovation using graphene. It figured out how graphene oxide-based wrappers loaded with preservatives can increase the shelf life of fruits and vegetables.
- The IIT Roorkee-incubated Log 9 has patented a technology for graphene-based ultracapacitors, and the IIT Kanpur-incubated RF Nanocomposites has developed EMI shielding and stealth technology using graphene-based nanotubes. But this trickle needs to be converted into a torrent.
- A laudable step in this direction was the setting up of the India Innovation Centre for Graphene in Kerala. It is being implemented by the Digital University Kerala in partnership with Tata Steel and C-MET, Thrissur. The Centre needs to become the nodal point to spur large-scale innovation activity around graphene.

➤ Governments have a crucial role to play. China declared graphene a priority in its 13th Plan. Europe set up the Graphene Flagship, with a budget of €1 billion in 2013. Can India not have a national graphene

mission? A nodal Ministry needs to be entrusted with this responsibility; else the subject will fall through the cracks.

- India needs to be among the leaders in graphene because we may experience the ‘winner takes the most’ situation here. Given the high cost-to-volume ratio for high-grade graphene, its production may get concentrated in a few locations in the world, as in the case of semiconductors. India missed the semiconductor bus in the mid-1990s. The time to step on the graphene pedal is now.

SURVEY & INDEX

❖ **Global Slavery Index 2023**

- **Context:** According to the Walk Free Foundation’s Global Slavery Index 2023, 50 million people are living in conditions of modern slavery – a 25% rise over the last five years.
- According to it, the Group of 20 (G20) nations are contributing to this increase, as their trade operations and global supply chains allow for human rights abuses. Among the G20 nations, India tops the list with 11 million people working as forced labourers, followed by China, Russia, Indonesia, Turkey and the U.S.
- The Global Slavery Index 2023 shows the world’s 20 richest countries account for more than half the estimated 50 million people living in ‘modern slavery’

➤ **About The Global Slavery Index:**

- The Index is released by Rights group Walk Free Foundation.
- It is an assessment of modern slavery conditions in 160 countries.
- The index uses data released by the International Labour Organisation (ILO), Walk Free, and the International Organisation for Migration (IOM) last year to illustrate how “modern slavery is hidden in plain sight”.
- The data gains significance as India holds the G20 presidency this year, with a focus on sustainable development and climate change mitigation.

➤ **Highlights of the Global Slavery Index 2023:**

Most prevalent

The countries estimated to have the highest prevalence of modern slavery tend to be conflict-affected, have state-imposed forced labour, and have weak governance.

	Rank	Prevalence Rate*	# of People
North Korea	1	104.6	2,696,000
Eritrea	2	90.3	320,000
Mauritania	3	32.0	149,000
Saudi Arabia	4	21.3	740,000

Least prevalent

The countries with the lowest prevalence of modern slavery are those with strong governance and strong government responses to modern slavery.

	Rank	Prevalence Rate*	# of People
Switzerland	160	0.5	4,000
Norway	159	0.5	3,000
Germany	158	0.6	47,000
Netherlands	157	0.6	10,000

- Estimates show that 50 million people were living in conditions of modern slavery on any given day in 2021.
- **Definition of modern slavery:-** it includes practices of forced labour, forced marriage, debt bondage, commercial sexual exploitation, human trafficking, slavery-like practices, and the sale and exploitation of children — any situation where threats, violence, coercion and deception prevent a person from refusing or leaving.
- The practice has become more prevalent over the last five years, the report shows, as climate change, armed conflict, weak governance and health emergencies like COVID-19 worked to remove a person’s freedom.
- G20 nations in particular account for more than half of all people living in modern slavery: imports worth \$468 billion of at-risk products, including electronics, textiles, palm oil and solar panels, have been shipped from countries with weak worker protection, thus worsening forced labour conditions.
- While world leaders in 2015 adopted a goal to end modern slavery, forced labour and human trafficking by 2030, “the significant increase in the number of people living in modern slavery and stagnating government action highlight that this goal is even further from being achieved”, the report said.
- The increase of 10 million people is due to compounding crises — “more complex armed conflicts, widespread environmental degradation, assaults on democracy in many countries, a global rollback of women’s rights and the economic and social impacts of the COVID-19 pandemic”. Forced labour exists in all countries and is “deeply connected to demand from higher-income countries”.
- Today G20 countries are collectively importing \$148 billion worth of apparel goods and \$13 billion worth of textiles at risk of being produced by forced labour every year.

- The Walk Free report recommends implementing stronger measures and legislations that prevent governments and business from sourcing goods and services linked to modern slavery. Other suggestions include embedding anti-slavery measures in climate change sustainability plans, providing primary and secondary education to children and tightening regulations around forced and child marriage.
- **India's stance on modern slavery:**
 - India passed the Bonded Labour Abolition Act of 1976 that prohibits the practice of bonded and forced labour, and identifies responsibilities of State Governments to form vigilance committees. The Act was amended in 1985 to include contract and migrant workers. India also has a Central scheme for Rehabilitation of Bonded Labour, one part of which includes providing financial assistance to the rescued individual (the 2016 amendment increased the amount of funds).
 - The Supreme Court has previously ruled that non-payment of minimum wages amounts to “forced labour” under Article 23 of the Constitution.
 - However, activists have noted problems with implementation of laws due to corruption, apathy, legal loopholes and lack of political will. The 1976 Act, for instance, is used to criminalise offenders but is “neither the best way to address exploitation nor to achieve SDG 8.7 [ending forced labour and modern slavery] as it often ends up hurting the very poor and vulnerable sections of society that it is meant to protect”

Strong legislations and accountability of G20 nations must be balanced with empowering the “protagonists of vulnerable communities” who live and work in precarity, says Mr. Chachra. The road to preventing forced labour goes through “rights of access to public goods which include food, shelter, education and health and the right to access to global commons and decent work”.

PRELIM FACTS

1. **CITIIS 2.0**

- **In News:** The government on Wednesday approved the second phase of the **City Investments to Innovate, Integrate and Sustain (CITIIS)** project, a programme under the ambit of the Smart Cities Mission, which aims to promote integrated waste management and climate-oriented reform actions.
 - The CITIIS 2.0 will be implemented in **18 cities** which would be selected based on a competition.
 - The programme, which was approved aims to support competitively selected projects promoting circular economy with a focus on integrated waste management at the city level, climate-oriented reform actions at the state level, and institutional strengthening and knowledge dissemination at the national level.
 - It would span over a period of four years from 2023-2027 and has been conceived and would be implemented in partnership with the French Development Agency (AFD), Kreditanstalt für Wiederaufbau (KfW), the European Union (EU), and National Institute of Urban Affairs (NIUA).
 - The funding for CITIIS 2.0 would include a loan of Rs 1760 crore from AFD and KfW, split equally, and a technical assistance grant of Rs 106 crore from the European Union.
 - The CITIIS 2.0 has three major components which are financial and technical support for developing projects focused on building climate resilience, adaptation and mitigation in up to 18 smart cities, support to all states and Union Territories on a demand basis and interventions at all centre, state and city levels to further climate governance in urban India through institutional strengthening, knowledge dissemination and capacity building.
 - The first phase of CITIIS had a total outlay of Rs 933 crore. It was launched in July 2018 with projects in 12 cities namely Agartala, Amaravati, Amritsar, Bhubaneswar, Chennai, Dehradun, Hubballi-Dharwad, Kochi, Puducherry, Surat, Ujjain and Visakhapatnam.

2. **UAE withdraws from U.S.-led maritime coalition**

- **In News:** The United Arab Emirates has withdrawn from a U.S.-led maritime coalition tasked with securing tense Gulf waterways that are vital to the global oil trade.
 - The UAE "withdrew its participation" in the 38-nation Combined Maritime Forces two months ago, a Foreign Ministry statement said, without giving reasons for the move.
- **About Combined Maritime Force (CMF)**
 - Combined Maritime Forces (CMF) is a multinational naval task force that operates in the maritime regions of the Middle East. It is a coalition of naval forces from various countries working together to ensure security, stability, and prosperity in the region.
 - The CMF was **established in 2002 and has its headquarters in Bahrain**. Its primary objective is to promote and maintain maritime security in three key areas: the Arabian Gulf, the Gulf of Oman, and the Red Sea. These regions are strategically important due to their significant maritime traffic, including commercial shipping and oil transportation.
 - The CMF operates under the framework of international law, including the United Nations Convention on the Law of the Sea (UNCLOS), to deter and counter threats such as piracy, terrorism,

smuggling, and illicit activities. By maintaining a visible presence and conducting maritime patrols, CMF contributes to the protection of global maritime trade and ensures the free flow of goods and energy resources through these vital waterways.

- The task force comprises naval assets and personnel from over 30 nations, including the United States, the United Kingdom, Australia, France, Saudi Arabia, and many others. The participating countries contribute their naval forces, aircraft, and expertise to conduct maritime security operations. These operations include maritime surveillance, interdiction of illegal activities, search and rescue missions, and providing assistance and support to merchant vessels in distress.
- CMF operates with a multinational command structure, with leadership positions rotating among the contributing nations. This collaborative approach allows for the sharing of information, resources, and operational responsibilities among the participating countries, enhancing the effectiveness of maritime security efforts in the region.
- In addition to its security role, CMF also focuses on building regional and international partnerships. It conducts various training exercises, workshops, and engagement programs to enhance cooperation, interoperability, and information sharing among the participating nations and other stakeholders. This collaborative approach strengthens regional security and fosters stability in the maritime domain.
- Overall, Combined Maritime Forces play a vital role in ensuring the safety and security of maritime trade routes in the Middle East region. Through multinational cooperation and coordinated efforts, CMF contributes to safeguarding the global economy, promoting regional stability, and countering maritime threats in this strategically important area.

3. **Maharashtra's Ahmednagar to be renamed Ahilyanagar:**

➤ **In News:** Marking the 298th birth anniversary of Maratha queen Ahilyabai Holkar on May 31, Maharashtra Chief Minister Eknath Shinde announced that his government would rename Ahmednagar after her. The Western Maharashtra city will now be known as Ahilyanagar.

➤ **How did the city of Ahmednagar first get its name?**

- In the Medieval period, the region was ruled over by the Rashtrakuta Dynasty, the Western Chalukyas, and then the Delhi Sultanate. In the last case, the rule was not direct, and a revolt by Afghan soldier Alladin Hasan Gangu led to the establishment of the Bahmani kingdom in the Deccan. In the following years, Ahmednagar, then known as Nizamshahi, became one of the five independent kingdoms to emerge from that empire.
- In 1486, Malik Ahmad Nizam Shah assumed the position of the Bahmani Sultanate's prime minister. He successfully defeated the king of the Bahmani Kingdom, who tried to dislodge him from power, in 1490. Four years later, he laid the foundation of a city close to where he had defeated the army, on the left bank of Sina river. This city was named after him: Ahmednagar.
- Jawaharlal Nehru, in his book A Discovery of India (1946), wrote of him, "Ahmad Nizam Shah, the founder of Ahmadnagar in 1490, was the son of Nizam-ul-Mulk Bhairi, a minister of the Bahmani kings. This Nizam-ul-Mulk was the son of a Brahmin accountant named Bhairu... Thus the Ahmednagar dynasty was of indigenous origin."

➤ **About Ahilyabai Holkar:**

- Ahilyabai was born in Chondi village of Ahmednagar to the village head Mankoji Shinde, who ensured that his daughter received an education, which was quite rare at that time.
- It is believed that Malhar Rao Holkar, the army commander to Peshwa Bajirao, spotted eight-year-old Ahilyabai at a temple service in Chondi. Impressed by her devotion and character, he decided to get his son, Khande Rao, married to her.
- After her husband's death in the Battle of Kumbher against the king of Bharatpur in 1754, Ahilyabai took control of Malwa. She excelled at administrative and military strategies under the guidance of her father-in-law, who believed she should lead her people, and not die by Sati after Khande Rao passed away. After the death of her father-in-law and son a few years later, she petitioned the Peshwa to become the ruler, backed by the support of her army.

4. **Gongadi shawl**

➤ **In News:** Recently, Telangana's woollen gongadi shawls has been refashioned into shoes for farmers by alumni of the National Institute of Design, Ahmedabad.

➤ **About Gongadi Shawl:**

- Gongadi, (known also as Kambal) is the traditional woolen blanket woven by the indigenous Kuruma pastoralist communities from wool of the indigenous Deccani sheep (known locally as Nalla gorrae) breed found in the Deccan Plateau region including the Indian state of Telangana.
- The famous blanket has once served the Indian Armed Forces to beat harsh winters at the borders.

➤ **Features:**

- ✓ The unique gongadi is not only the symbol of rich diverse traditional weaving culture of the Deccan region but also the pride and identity of the local indigenous pastoralist communities.
 - ✓ The coarse woolen blanket is famous for its durability and versatility.
 - ✓ The tough gongadi usually lasts for more than a decade and acquires this unique quality from the craft of hand weaving.
 - ✓ One of the unique natures of gongadi is that it does not fade but grows darker in time.
 - ✓ The indigenous Kuruma weavers say that gongadi is so strong that you can lift a fully grown bull off the ground with it.
- The traditional gongadi is produced organically, without using any dyes either natural or synthetic. Sizing of the strings is done using the paste of soaked and cooked tamarind seeds
- 5. Purana Qila**
- In News: A recent round of excavations at the site of Delhi's Purana Qila or Old Fort has uncovered evidence of the continuous history of the city since the pre-Mauryan era.
- About Purana Qila:
- It is located on the South Eastern part of the present city of New Delhi.
 - It is one of the oldest forts in Delhi and built on the banks of river Yamuna.
 - The present citadel at Purana Qila started its construction in the reign of Humayun and was completed by Sher Shah Suri ('The Lion King').
 - The Qila was inspired by Jama Masjid, which was established 15 years before the reconstruction of Qila.
- Architecture:
- It is rectangular in shape and is spread over an area of 1.5 kilometers.
 - Another amazing feature of the Purana Qila are the three gates that are a display of a happy blend of Hindu and Muslim styles of architecture. – Bara Darwaza or the Big Gate facing west, the Humayun Gate facing south, and the Talaqqi Gate, which is often referred to as the forbidden gate.
 - All of the gates are double-storeyed and comprise of huge semi-circular bastions flanking either of their sides.
 - These bastions are equal in frequency, except for in the westward wall, where they are built at a distance of 73 meters from each other.
 - The eastern and western walls of the Qila are the tallest, which were specifically designed for safeguarding the Kings residing within the four-walls.
 - All the walls surrounding the Qila are 0.33 meters thick and supported by bastions.

ANSWER WRITING

Q. Elaborate upon the impact of the rising sea level on the coastal regions of India. Also, mention the measures taken by the Government of India to mitigate the repercussions of this sea-level rise.

Rising sea levels are a global phenomenon that is caused by various factors such as climate change, melting of polar ice caps, and thermal expansion of ocean water. The possibility of sea level rise in the next ten years is about 3.2 cm in the north Indian Ocean if the sea level acceleration remains similar to 3.2 mm per year. The coastal regions of India, which are home to millions of people, are particularly vulnerable to the effects of this phenomenon.

The overall impact of rising sea levels on the coastal regions in India can be multidimensional and multi-faceted like,

Socio-Economic Impact:

- Climate-change-induced displacement: Coastal erosion due to rising sea levels has led to the displacement of thousands of people living in low-lying areas along the coast. According to the United Nations Refugee Agency (UNHCR), Nearly 50 lakh people in India were internally displaced due to climate change and disasters in 2021.
- Impact on Fisheries Sector: This displacement has resulted in the loss of livelihoods for fishermen and other coastal communities, who are heavily dependent on the sea for their sustenance. This would lead to an overall downturn in the Marine and fisheries sector.
- Coastal tourism, which is a major contributor to the economy of many coastal states, has also been adversely affected due to beach erosion and flooding caused by rising sea levels.
- Economic loss: The destruction of infrastructure and property due to flooding and erosion has resulted in significant economic losses for the affected communities.
- Impact on Agriculture: Increased saltwater intrusion into groundwater reserves has impacted agriculture, leading to lower yields and increased irrigation costs.
- Could widen existing socio-economic disparities: The impact of rising sea levels on coastal areas can also exacerbate existing socio-economic disparities, as poorer communities are often more vulnerable to the effects of climate change.

Environmental Impact:

- **Impact on Coastal Ecosystem:** Rising Sea levels have resulted in the loss of important coastal ecosystems, including mangroves and coral reefs, which serve as breeding grounds for marine life and help protect coastal communities from storms and floods. For example - Hazardous living conditions were caused by unusually high tides post the Indian Ocean tsunami in 2004 When water displaces natives from the "sinking island" of Kerala.
- **Impact on Habitat:** Increased flooding and erosion have also led to the destruction of habitats for several endangered species of flora and fauna. The loss of coastal ecosystems can have a cascading effect on marine biodiversity, which in turn can have significant implications for fisheries and other industries dependent on the sea.
- **Impact on freshwater ecosystems:** The melting of glaciers due to rising temperatures is also contributing to rising sea levels, which could have a significant impact on freshwater ecosystems, particularly in the Ganges-Brahmaputra delta.
- **Loss of freshwater habitat:** Increased salinity in groundwater can also lead to the loss of important freshwater habitats, which can impact terrestrial ecosystems as well.

Measures taken by the Government:

- **National Coastal Zone Management Program (NCZMP):** It was launched by the Ministry of Environment, Forest and Climate Change in 2015 to promote sustainable coastal development and adaptation to climate change.
- **Coastal Protection Infrastructure:** The government has constructed several coastal protection structures, such as seawalls, groynes, and breakwaters, to reduce the impact of waves and erosion on coastal areas.
- **Disaster Preparedness:** The National Disaster Management Authority has developed guidelines for coastal states to prepare for and respond to disasters related to climate change, including sea-level rise.
- **Integrated Coastal Zone Management (ICZM):** The Ministry of Environment and Forests and Climate Change (MoEFCC) has been implementing an Integrated Coastal Zone Management (ICZM) Plan for India instead of a uniform Coastal Regulatory Zone (CRZ) framework. This has led to better preparedness of India's coasts to deal with sea level rise.
- **India's National Action Plan on Climate Change (NAPCC) -** It outlines a strategy that aims to enable the country to adapt to climate change and enhance the ecological sustainability of our development path.
- **Updated NDCs:** In August 2022, India updated its NDC according to which India has an enhanced target to reduce the emissions intensity of its GDP by 45 per cent by 2030 from the 2005 level, and achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030. India aims to reach net zero by 2070.

To address these impacts, we need to effectively implement the Climate Disaster Resilient initiative and the updated NDCs of the Paris Agreement. As rising sea level is a global phenomenon thus governments, businesses, and communities must work together towards developing sustainable coastal development strategies and towards increasing resilience to climate change.

MCQs

1. India is going to host SCO Summit 2023. Consider the following countries with reference to SCO.
 1. Ukraine
 2. Pakistan
 3. India
 4. Turkmenistan
 5. Uzbekistan

How many of the above countries are members of Shanghai Cooperation Organisation (SCO)?

a) Only two **b) Only three** c) Only four d) Only five
2. Gongadi shawl is a traditional woolen blanket was in news. It is related to which of the following State?

a) Haryana b) West Bengal c) Gujarat **d) Telangana**
3. Consider the following statement regarding Graphene
 1. Graphene is the world's thinnest, strongest, and most conductive material of both electricity and heat.
 2. Graphene is 200 times stronger than steel but six times lighter.
 3. China and Brazil are global leaders in the commercial production of graphene.

Select the correct statement using the codes below

a) 1 & 2 b) 1 & 3 c) 2 & 3 **d) 1, 2 & 3**
4. Which one of the following statements are correct with reference to Tele-Law Programme?
 1. It comes under the Department of Justice, Ministry of Law and Justice.
 2. It builds an interface for online hearing of Supreme Court and High Court cases.

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
5. Consider the following statements regarding Purana Qila:
1. It is one of the oldest forts in Delhi and built on the banks of river Yamuna.
2. The present citadel at Purana Qila started its construction in the reign of Aurangzeb.
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
6. A rare Indian mouse deer or spotted Chevrotain was recently spotted in the Kanger Valley National Park. The National Park situated in which of the following states?
a) Gujarat
b) Madhya Pradesh
c) **Chhattisgarh**
d) Karnataka
7. Consider the following statement regarding Global Greenhouse Gas Watch (GGGW)
1. It is a new greenhouse gas (GHG) monitoring initiative of the World Meteorological Organisation (WMO).
2. GGGW will fill critical information gaps, providing an integrated, operational framework under all space-based and surface-based observing systems under one roof, along with modelling and data assimilation capabilities.
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
8. Which among the following best describes 'Stolpersteine', recently seen in the news?
a) It is a Viral disease.
b) **It is a Holocaust memorial.**
c) It is multidrug resistant bacteria.
d) It is a malware.
9. Consider the following statements with respect to Joint Child Malnutrition Estimates (JME) 2023
1. It is jointly released by UNICEF, WHO and World Bank.
2. According to this estimate, Prevalence of overweight children decreased in India in 2022 compared to 2012.
3. According to this estimate, India continues to show a reduction in stunted children under 5 years in 2022 compared to 2012.
Which of the statement(s) given above is/are correct?
a) Only one
b) **Only two**
c) All three
d) None
10. Geologists have recently discovered a never-before-seen volcano at the bottom of the Barents Sea. Consider the following statements regarding Barents Sea:
1. It is a marginal sea of the Arctic Ocean.
2. It is a shallow sea and faces a subarctic climate.
3. It is located along the northern coasts of Norway and Russia and divided between Norwegian and Russian territorial waters.
Which of the statements given above is/are correct?
a) 1 and 2 only
b) 1 and 3 only
c) 2 and 3 only
d) **1, 2 and 3**