

Q-1- How do the tectonic processes and geological features of the eastern Mediterranean region contribute to the occurrence of earthquake and related hazards? Explain.

Approach

A simple straightforward question where candidates need to write about how tectonic and geological features of eastern Mediterranean region contribute to the occurrence of earthquake and related hazards in the region.

Introduction

The tectonic processes in the eastern Mediterranean region are complex and include the interactions between several major tectonic plates, including the African, Eurasian, and Arabian plates. The region is characterized by numerous active faults, including both strike-slip faults and subduction zones, which can lead to earthquakes and related hazards.

Body

- The eastern Mediterranean region is located at the intersection of the African, Eurasian, and Arabian plates, making it a highly active tectonic zone.
- The complex interactions between these plates result in significant geological features such as mountain ranges, basins, and faults, and contribute to the occurrence of earthquakes and related hazards.
- One of the major features of the eastern Mediterranean region is the Hellenic arc, which is a series of subduction zones located between the Aegean Sea and the eastern Mediterranean.
- Subduction zones occur when one tectonic plate is forced beneath another, which can result in large earthquakes and tsunamis.
- The Hellenic arc is one of the most active subduction zones in the world, and is responsible for numerous earthquakes and associated hazards such as landslides, tsunamis, and volcanic eruptions.
- The region is also characterized by several major transform faults, including the North Anatolian Fault and the Dead Sea Transform, which are responsible for some of the largest earthquakes in the region.
- These faults are associated with the tectonic movement of the Arabian plate against the Eurasian plate, which causes stress and tension to build up in the earth's crust.
- When this stress is released, it can result in large earthquakes that can cause significant damage and loss of life.
- In addition to the tectonic processes, the geological features of the eastern Mediterranean region can also contribute to the occurrence of earthquakes and related hazards.
- The region is home to numerous active volcanoes, such as Mount Etna in Italy and Mount Olympus in Greece, which can produce seismic activity and trigger

landslides and other hazards. The region is also characterized by several sedimentary basins, which can amplify seismic waves and increase the intensity of earthquakes.

- In addition to earthquakes, the eastern Mediterranean region is prone to a variety of other natural hazards.
- These hazards can be both geologic and atmospheric in nature and can cause significant damage and loss of life. Some of the most significant hazards in the region include,
- Landslides: The steep topography of the region, as well as the presence of active faults and seismic activity, can contribute to the occurrence of landslides.
- These landslides can be triggered by earthquakes, heavy rainfall, or other factors, and can result in significant damage
- In addition to earthquakes, the eastern Mediterranean region is also prone to a variety of other natural hazards, including:
- Severe storms: The region can experience severe storms, including tropical storms and hurricanes, which can cause significant damage to coastal areas and infrastructure.
- Flooding: Heavy rainfall can cause flash flooding, which can be particularly dangerous in areas with steep topography and narrow valleys. Coastal flooding can also occur during storms and hurricanes.
- Drought The region is susceptible to drought, which can cause water shortages in the region.

Conclusion -

The complex tectonic processes and geological features of the eastern Mediterranean region contribute significantly to the occurrence of earthquakes and related hazards. The region is highly active and prone to seismic activity, which can result in significant damage and loss of life. It is therefore essential for the region to be well-prepared for earthquakes and related hazards through effective risk management and disaster planning.

2. What are the key strengths and weaknesses of India's defence manufacturing industry, and what measures can be taken to leverage its potential as a global player in this sector? Discuss.

Approach

Candidates can start the answer with basic idea of indigenisation of defence sector and discuss strength and weakness of emerging Indian defence sector.

Introduction

The Defence Sector in India is identified as an important area with an ocean of opportunities for self-reliance. With large-scale modernisation requirements of the

Indian Armed Forces, India's vision for Atma Nirbhar Bharat has provided further impetus to realise the goal of indigenisation of Defence Sector.

Body

- India's defense manufacturing industry has made significant strides in recent years, with the country now ranking as the world's third-largest defense importer.

However, the industry still faces some significant challenges that need to be addressed.

Strengths:

- **Large domestic market:** India has a large domestic market for defense equipment, which provides a stable source of demand for defense manufacturers.
- **Skilled workforce:** India has a large pool of skilled engineers and technicians, which can be leveraged to develop high-quality defense products.
- **Growing private sector participation:** India's defense industry has seen growing participation from the private sector, which has helped to bring in new ideas and innovation.
- **Strong research and development capabilities:** India has several public and private research and development institutions, which can help to develop cutting-edge defense technologies.
- **Favorable policy environment:** India's government has taken several steps to promote the growth of the defense manufacturing industry, including the introduction of the Defense Production Policy and the Make in India initiative.

Weaknesses:

- **Over-reliance on imports:** Despite efforts to promote domestic manufacturing, India still relies heavily on imports for its defense needs, which hampers the growth of the domestic defense industry.
- For instance, amid the Russia-Ukraine war, India is awaiting the delivery of the S-400 Air Defence Systems under a deal signed in 2018.
- In addition, several new deals are in line including 12 Sukhoi-30MKI aircraft and 21 MiG-29 fighter jets for the Indian Air Force.
- **Narrow Private Participation:** Private sector participation in the defence sector is constrained by the lack of a conducive financial framework, that means our defence production is unable to benefit from modern design, innovation, and product development.
- **Lack of Critical Technology:** Lack of design capability, inadequate R&D investment, inability to manufacture major subsystems and components hamper indigenous manufacturing.
- Also, the relationship between R&D institutions, production agencies (public or private) and end-users is extremely fragile.
- **Limited innovation:** India's defense industry has traditionally focused on manufacturing and assembly rather than innovation, which has limited the development of cutting-edge technologies.

- Inadequate infrastructure: India's defense industry faces significant infrastructure challenges, such as a lack of modern testing and certification facilities.
- Bureaucratic hurdles: India's defense procurement process can be slow and bureaucratic, which can deter foreign and domestic investors.
- Limited collaboration between public and private sectors: India's public and private defense sectors have limited collaboration, which can lead to duplication of efforts and inefficiencies.
- Lack of Nexus Between Stakeholders: India's defence manufacturing capability is hindered by overlapping jurisdictions between the Ministry of Defence and the Ministry of Industrial Promotion.

Conclusion

Indigenized India's defense sector would further strengthen the economy by generating employment opportunities and saving the exchequer by reducing the import burden. Also, Self-sufficiency in defense will fundamentally lead to India's strategic independence.

3. How can the G-20 foster greater inclusivity and responsiveness to the needs of emerging economies and vulnerable populations, and what role can India play in shaping a more equitable and sustainable global order? Analyse.

Approach

Candidates can start the answer with basic idea of G20 also highlight how G20 brings the inclusivity and how can India with G20 can work for equitable and sustainable world.

Introduction

The G-20 (Group of Twenty) is an international forum consisting of 19 countries and the European Union (EU). The G-20 is made up of the world's leading economies, representing about two-thirds of the global population and more than 80% of the world's GDP.

Body

The G-20 has the potential to foster greater inclusivity and responsiveness to the needs of emerging economies and vulnerable populations by taking several measures. Some of the key ways that the G-20 can promote inclusivity are:

- Prioritize the needs of emerging economies: The G-20 must acknowledge the unique challenges faced by emerging economies and take steps to address

them. This could involve prioritizing infrastructure development, providing access to financing, and promoting inclusive economic growth.

- Address the concerns of vulnerable populations: The G-20 must take into account the needs of vulnerable populations such as women, children, and marginalized communities. This could involve promoting policies that foster inclusive growth and reduce inequality.
- Increase transparency and accountability: The G-20 should increase transparency and accountability in decision-making processes, ensuring that all member countries have a say in shaping global policies.

Here are some ways that India can contribute to a more equitable and sustainable global order:

- Champion the needs of emerging economies: India can use its position in the G-20 to advocate for the needs of emerging economies, especially those in South Asia, Southeast Asia, and Africa.
- Promote inclusive economic growth: India can push for policies that foster inclusive economic growth and reduce inequality, such as investments in social infrastructure and healthcare.
- Advocate for climate change mitigation and adaptation: India can promote policies that address climate change and promote sustainable development. As a country that is vulnerable to the impacts of climate change, India can play a key role in shaping global climate policies.
- Strengthen transparency and accountability: India can push for greater transparency and accountability in decision-making processes at the G-20, ensuring that all member countries have an equal say in shaping global policies.
- Promote technology transfer: India is home to a thriving technology industry and has a wealth of experience in developing innovative solutions to some of the world's most pressing problems. India can promote the transfer of technology to other G20 members, especially those in developing and emerging economies, to help them to grow and develop sustainably.

Conclusion

India can contribute to this goal by championing the needs of developing and emerging economies, promoting inclusive growth, advocating for climate change mitigation and adaptation, strengthening transparency and accountability, and promoting technology transfer. By working together with other G20 members, India can help to build a more equitable and sustainable world for all.