

MCN301 DISASTER MANAGEMENT

SHORT QUESTIONS (3 Marks)

MODULE I

1. Explain the relevance and adverse effects of greenhouse gases.

Greenhouse gases, such as carbon dioxide and methane, trap heat in the atmosphere, leading to climate change. Their relevance lies in driving global warming, impacting ecosystems, weather patterns, and sea levels. Adverse effects include extreme weather events, biodiversity loss, and health issues, ultimately threatening food security and human livelihoods

2. Discuss the two types of monsoon in Indian subcontinent.

The Indian subcontinent experiences two primary monsoons.

- a) **The southwest monsoon**, occurring from June to September, brings heavy rainfall from the Arabian Sea, crucial for agriculture.
- b) **The northeast monsoon**, from October to December, affects southeastern regions like Tamil Nadu, providing vital moisture but often leading to flooding and landslides.

3. State the composition of lithosphere?

The lithosphere comprises the Earth's outer layer, consisting of the crust and the uppermost part of the mantle. It is primarily composed of silicate rocks, including minerals such as quartz, feldspar, and mica, along with various metals and organic materials. This rigid layer is vital for tectonic activity and landforms.

4. Define the term "biosphere" and describe the three main components that constitute it.

The biosphere refers to the global ecosystem, encompassing all living organisms and their interactions with the environment. Its three main components are: **lithosphere** (land), which includes soil and rocks; **hydrosphere** (water), covering oceans, rivers, and lakes; and **atmosphere** (air), providing gases necessary for life, including oxygen and carbon dioxide.

5. What are disasters? What are their causes?

Disasters are sudden, catastrophic events that cause significant disruption, destruction, and harm to communities, ecosystems, or economies. They can be natural, such as earthquakes and floods, or man-made, like industrial accidents and terrorist attacks. Causes include environmental factors, human activities, and systemic vulnerabilities, often exacerbated by climate change and poor planning.

6. Describe the role of the ozone layer in the Earth's atmosphere and its significance for life on the planet.

The ozone layer, located in the stratosphere, absorbs and filters harmful ultraviolet (UV) radiation from the sun. Its role is crucial for protecting living organisms, as excessive UV exposure can lead to skin cancer, cataracts, and harm ecosystems. The ozone layer thus plays a vital role in maintaining life on Earth.

7. Explain the greenhouse effect and its impact on global climate. Provide examples of greenhouse gases.

The greenhouse effect is the process by which certain gases in the Earth's atmosphere trap heat, preventing it from escaping into space. This natural phenomenon keeps the planet warm, but human activities, like burning fossil fuels, have increased greenhouse gas concentrations, intensifying this effect. Key greenhouse gases include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The enhanced greenhouse effect leads to global warming, causing climate change, rising sea levels, extreme weather, and disruptions to ecosystems and agriculture.

8. List the types of rocks in lithosphere.

The lithosphere consists of three main types of rocks: **igneous rocks**, formed from cooled molten material (e.g., granite and basalt); **sedimentary rocks**, created from the accumulation and compaction of minerals and organic matter (e.g., limestone and sandstone); and **metamorphic rocks**, which arise from the alteration of existing rocks under heat and pressure (e.g., marble and schist).

9. List the types of soils in lithosphere.

The lithosphere contains various soil types, including **sand soil**, characterized by coarse particles and good drainage; **clay soil**, known for its fine particles and poor drainage; **silt soil**, which retains moisture well; **loamy soil**, a balanced mix of sand, silt, and clay ideal for agriculture; and **peat soil**, rich in organic matter.

10. List the different layers of atmosphere.

The atmosphere is divided into several layers, each with distinct characteristics:

1. **Troposphere**: The lowest layer, where weather occurs and life exists, extending up to about 8-15 km above the Earth's surface.
2. **Stratosphere**: Located above the troposphere, it contains the ozone layer and extends from about 15 km to 50 km.
3. **Mesosphere**: Above the stratosphere, this layer extends from about 50 km to 85 km and is where temperatures decrease with altitude.
4. **Thermosphere**: Ranging from 85 km to about 600 km, this layer experiences high temperatures and is where the auroras occur.
5. **Exosphere**: The outermost layer, extending from about 600 km to 10,000 km, where the atmosphere transitions into outer space

11. Explain disaster and hazard.

A disaster is a significant, often sudden event causing widespread destruction, disruption, and loss, impacting communities and ecosystems. A hazard, on the other hand, refers to a potential threat or dangerous condition that can lead to a disaster, such as earthquakes, floods, or industrial accidents, when triggered by specific events.

12. Explain capacity and resilience in disaster management.

Capacity in disaster management refers to the ability of individuals, communities, and institutions to prepare for, respond to, and recover from disasters. Resilience is the capacity to absorb shocks and adapt to challenges, ensuring long-term recovery and reducing vulnerability. Together, they enhance preparedness and effective response to disasters.

13. Explain disaster preparedness and disaster prevention.

Disaster preparedness involves planning and training to ensure effective responses during emergencies, including developing evacuation plans, conducting drills, and educating communities. Disaster prevention focuses on reducing the likelihood of disasters occurring through risk assessment, land-use planning, infrastructure improvement, and implementing safety measures, ultimately minimizing potential damage and loss of life.

14. Explain disaster mitigation, disaster response.

Disaster mitigation refers to strategies aimed at reducing the impact and likelihood of disasters through planning, engineering, and community education, such as building codes and risk assessments. Disaster response involves the immediate actions taken to address the effects of a disaster, including search and rescue operations, medical aid, and resource distribution.

15. Explain the need for crisis counselling in disaster management.

Crisis counseling is vital in disaster management as it offers emotional support to individuals affected by traumatic events. It helps survivors process their experiences, cope with stress, and reduce the risk of mental health issues. This support fosters resilience, promotes recovery, and aids in rebuilding community strength after disasters.

