Q.1. Multiple Choice Questions

1. Which of the following best defines a disaster?

a) A minor event with no long-term impact

b) A sudden event causing widespread damage and disruption

c) A predictable natural occurrence

d) A routine emergency

2. Which of the following is NOT a component of disaster management?

a) Mitigation b) Prevention

c) Hazard Creation d) Response

3. What does vulnerability in disaster management refer to?

a) The probability of a hazard occurring

b) The ability of a community to recover from a disaster

c) The susceptibility of a community to the impact of a hazard

d) The speed of disaster response

4. Which phase of the disaster management cycle focuses on reducing the impact of future disasters?

a) Response b) Recovery

c) Mitigation d) Reconstruction

5. Which of the following is an example of a natural disaster?

a) Industrial explosion b) Nuclear radiation leak

c) Landslide d) Chemical spill

6. What type of disaster is an earthquake?

a) Hydrological b) Meteorological

c) Geological d) Biological

7. Which Indian seismic zone is considered the most earthquake-prone?

a) Zone I b) Zone II

c) Zone III **d) Zone V**

8. Which of the following is a man-made disaster?

a) Tsunami b) Avalanche

c) Oil spill d) Drought

9. Which term refers to the likelihood of a disaster occurring in a specific area?

a) Hazard **b) Risk**

c) Vulnerability d) Resilience

10. Which of the following is NOT a type of disaster?

a) Technological b) Environmental

c) Psychological d) Biological

Q.2. Short Answer Type Questions

1. Define disaster and explain its key characteristics.

Ans:- The term disaster owes its origin to the French word “Desastre” which is a combination of two words ‘des’ meaning bad and ‘aster’ meaning star. Thus the term refers to ‘Bad or Evil star’.

➔ A disaster can be defined as “A serious disruption in the functioning of the community or a society causing wide spread material, economic, social or environmental losses which exceed the ability of the affected society to cope using its own resources”.

Key Characteristics of a Disaster:

1. Sudden Onset:
    - Most disasters occur suddenly without warning (e.g., earthquakes, explosions).
    - Some have a slow onset but still lead to severe consequences (e.g., drought, epidemics).
2. Widespread Impact:
    - Disasters affect large numbers of people and areas, disrupting normal life and infrastructure.
    - They often damage essential services like power, water supply, and communication systems.
3. Loss of Life and Property:
    - Disasters typically result in significant human casualties and destruction of property, homes, crops, and infrastructure.
4. Resource Overwhelm:

- The impact of a disaster often exceeds the local capacity to respond and recover, requiring external aid and support.

5. Social and Economic Disruption:
    - Disasters disturb social routines, displace populations, disrupt education, healthcare, and economies.
    - Long-term consequences may include poverty, unemployment, and health issues.
6. Need for Emergency Response:
    - Disasters demand immediate rescue, relief, and recovery operations from government, non-government, and international agencies.
7. Environmental Impact:
    - Many disasters lead to environmental degradation, such as deforestation, pollution, or destruction of ecosystems.
8. Vulnerability-Dependent Damage:
    - The extent of damage caused by a disaster depends on the vulnerability of the area or community (e.g., poorly built structures suffer more during earthquakes).

2. What are the main components of the disaster management cycle?

Ans :- Disaster Risk Management includes sum total of all activities, programmes and measures which can be taken up before, during and after a disaster with the purpose to avoid a disaster, reduce its impact or recover from its losses. The three key stages of activities that are taken up within disaster risk management are:

(i) Pre-disaster

(ii) Disaster occurrence

(iii) Post disaster

Pre-disaster (Before a disaster):

It includes the activities taken to reduce human and property losses caused by a potential hazard. For example carrying out awareness campaigns, strengthening the existing weak structures, preparation of the disaster management plans at household and community level etc. Such risk reduction measures taken under this stage are termed as mitigation and preparedness activities.

Disaster occurrence (During a disaster):

It includes the initiatives taken to ensure that the needs and provisions of victims are met and suffering is minimized. Activities taken under this stage are called emergency response activities.

Post-disaster (After a disaster):

It includes the initiatives taken in response to a disaster with a purpose to achieve early recovery and rehabilitation of affected communities, immediately after a disaster strikes. These are called as response and recovery activities.

3. Differentiate between hazard and disaster with examples.

Difference between disaster and hazard?

Hazard	Disaster
A hazard is a situation where there is a threat to life, health, environment or property.	A disaster is an event that completely disrupts the normal ways of a community. It brings on human, economical, and environmental losses to the community which the community cannot bear on its own.
Hazard are occurred at the place which has less population	Disasters are mainly occurred at over populated area.
Hazard is caused by negligence	Disaster is a results of differential behavior of nature due to many conditions.
Hazards are natural or manmade phenomenon that are a feature of our planet and cannot be prevented.	These hazards are termed as disasters when they cause widespread destruction of property and human lives.
In their dormant state, hazards just pose a threat to life and property.	Once a hazard becomes active and is no longer just a threat, it becomes a disaster.

4. Explain the concept of vulnerability in disaster management.

Ans :- Vulnerability may be defined as “The extent to which a community, structure, services or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrains or a disaster prone area.”

Vulnerabilities can be categorized into:

1. Physical vulnerability

2. Socio-economic vulnerability

Physical Vulnerability: It includes notions of who and what may be damaged or destroyed by natural hazard such as earthquakes or floods. It is based on the physical condition of people and elements at risk, such as buildings, infrastructure etc; and their proximity, location and nature of the hazard. It also relates to the technical capability of building and structures to resist the forces acting upon them during a hazard event.

Socio-economic Vulnerability: The degree to which a population is affected by a hazard will not merely lie in the physical components of vulnerability but also on the socioeconomic conditions. The socio-economic condition of the people also determines the intensity of the impact. For example, people who are poor and living in the sea coast don’t have the money to construct strong concrete houses. They are generally at risk and lose their shelters whenever there is strong wind or cyclone. Because of their poverty they too are not able to rebuild their houses.

5. List any four types of man-made disasters with examples.

Ans :- 1.Industrial Accidents

Example: Bhopal Gas Tragedy (India, 1984) – A toxic gas leak from a pesticide plant caused thousands of deaths and injuries.

2. Nuclear Disasters

Example: Chernobyl Nuclear Disaster (Ukraine, 1986) – A reactor explosion released radioactive material, affecting health and the environment for decades.

3.Terrorist Attacks

Example: 9/11 Attacks (USA, 2001) – Coordinated airplane hijackings and crashes caused massive loss of life and destruction.

4. Fires (Urban or Forest)

Example: Uphaar Cinema Fire (India, 1997) – A fire in a movie theater due to electrical faults led to the deaths of 59 people.

Q.3. Long Answer Type Questions

1. Discuss the various types of natural disasters with suitable examples.

Ans:- 1. Earthquakes

- Definition: A sudden shaking of the Earth's surface caused by the movement of tectonic plates.
- Effects: Ground rupture, building collapse, landslides, tsunamis.
- Example:
    - *2015 Nepal Earthquake* – Magnitude 7.8, caused over 8,000 deaths and massive destruction.

2. Floods

- Definition: Overflow of water submerging land that is usually dry.
- Causes: Heavy rainfall, river overflow, dam failure, snowmelt.
- Effects: Property damage, waterborne diseases, loss of crops and livestock.
- Example:
    - *2018 Kerala Floods* in India – Caused by excessive rainfall during monsoon season.

3. Cyclones / Hurricanes / Typhoons

- Definition: Intense circular storms originating over warm ocean waters, called differently in various regions:
    - *Cyclones* (Indian Ocean)
    - *Hurricanes* (Atlantic Ocean)
    - *Typhoons* (Pacific Ocean)
- Effects: Strong winds, heavy rain, storm surges, coastal flooding.
- Example:
    - *Cyclone Fani (2019)* – Affected eastern India, especially Odisha.

4. Droughts

- Definition: A prolonged period of abnormally low rainfall, leading to water shortage.
- Effects: Crop failure, famine, water scarcity, economic loss.
- Example:
    - *2015–16 Drought in Maharashtra*, India – Severely impacted agriculture and water supply.

5. Landslides

- Definition: The downward movement of rock, soil, and debris on a slope due to gravity.

- Causes: Heavy rainfall, earthquakes, deforestation, construction.
- Effects: Blocked roads, buried structures, loss of life.
- Example:
    - *Malin Landslide (2014)* in Maharashtra, India – Buried an entire village.

6. Tsunamis

- Definition: Series of huge sea waves caused by underwater earthquakes or volcanic eruptions.
- Effects: Coastal flooding, massive destruction, loss of life.
- Example:
    - *2004 Indian Ocean Tsunami* – Triggered by a 9.1 magnitude earthquake, affected multiple countries and killed over 2 lakh people.

7. Volcanic Eruptions

- Definition: Explosion of molten rock (magma), gases, and ash from a volcano.
- Effects: Lava flows, ash clouds, air pollution, climate effects.
- Example:
    - *Mount Vesuvius Eruption* (Italy, 79 AD) – Destroyed Pompeii.
    - *Mount Merapi Eruption* (Indonesia, 2010).

8. Heatwaves and Coldwaves

- Heatwave: A prolonged period of excessively hot weather.
- Coldwave: A prolonged period of excessively cold weather.
- Effects: Health issues (heatstroke, hypothermia), stress on power supply and agriculture.
- Example:
    - *India Heatwave (2015)* – Over 2,000 deaths across states.

2. Explain the phases of the disaster management cycle and their significance.

Ans:- Disaster Risk Management includes sum total of all activities, programmes and measures which can be taken up before, during and after a disaster with the purpose to avoid a disaster, reduce its impact or recover from its losses. The three key stages of activities that are taken up within disaster risk management are:

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3. Describe the impacts of disasters on the environment, economy, and society, with reference to specific case studies.

Ans:- 🌍 1. Environmental Impacts

Disasters often lead to widespread environmental degradation, affecting ecosystems, wildlife, and natural resources.

- 🔹 Examples & Effects:
  - 2004 Indian Ocean Tsunami:
    - Impact: Saltwater intrusion damaged agricultural land, coastal ecosystems, and mangroves.
    - Result: Long-term soil infertility and habitat destruction.
  - 2010 Haiti Earthquake:
    - Impact: Triggered landslides, increased deforestation, and improper waste disposal due to emergency shelters.
    - Result: Deterioration of fragile ecosystems.
  - Australian Bushfires (2019-2020):
    - Impact: Destroyed over 12 million hectares of forest, killed or displaced nearly 3 billion animals.

- Result: Severe biodiversity loss and air quality decline.

💸 2. Economic Impacts

Disasters severely disrupt economic activities, destroy infrastructure, and increase poverty and unemployment.

🔹 Examples & Effects:

- 2015 Nepal Earthquake:
  - Impact: Caused damage worth over $7 billion, including heritage sites, roads, and buildings.
  - Result: Slowed GDP growth, tourism losses, and job cuts.
- Kosi Floods (2008), Bihar, India:
  - Impact: Damaged thousands of homes and vast agricultural land.
  - Result: Loss of livelihood, massive relief and rehabilitation cost.
- Hurricane Katrina (2005), USA:
  - Impact: Estimated $125 billion in damages.
  - Result: Shutdown of oil refineries and ports, high recovery cost.

👥 3. Social Impacts

Disasters affect people's lives through loss, displacement, and disruption of education, healthcare, and social order.

🔹 Examples & Effects:

- Cyclone Fani (2019), India:
  - Impact: Displaced over 1.2 million people in Odisha.
  - Result: Temporary breakdown of healthcare, education, and public services.
- 2013 Uttarakhand Floods, India:
  - Impact: Thousands killed or missing, villages swept away.
  - Result: Psychological trauma, loss of family members, and mass migration.
- COVID-19 Pandemic (2020 onwards):
  - Impact: While not a natural disaster in the traditional sense, it had disaster-like effects on society.
  - Result: Massive disruption to education, job loss, mental health issues, and increased inequality.