Chapter 9: Disaster Management

Question. 1. Fill in the blanks:

(1) Earthquakes cause **seismic** waves leading to movements of the earth's surface.

(2) The central point of earthquake is the point above the **epicentre** on the earth's surface.

(3) The accentuation of earthquake is measured in **'Ritcher Scale'**.

(4) If there is earthquake at the bottom of ocean, it may create **tsunami** waves.

(5) **Stirrup pump** is the best device to put off small fires.

(6) **Displacement** of waterfalls occurs due to landslides.

Question. 2. State whether the following statements are True or False:

(1) Every year nearly 2,400 to 4,000 earthquakes occur on the earth. **False**

(2) Potassium, sodium and calcium are the metals that react with water at high room temperature. **False**

(3) A fire caused due to electrical components is extinguished by fire extinguishers like carbon dioxide are used. **True**

(4) Indiscriminate cutting of the trees results in improvement of soil quality. **False**

(5) Landslide results in loss of plant life. **True**

Question. 3. Match the column:

[1] Column 'A'	**Answer**	**Column 'B'**
(1) Class A fire	Solid substances	**(a) Electrical components**
(2) Class B fire	Liquid substances	**(b) Gaseous substances**

(3) Class C fire	Gaseous substances	**(c) Chemical substances**
(4) Class D fire	Chemical substances	**(d) Liquid substances**
(5) Class E fire	Electrical components	**(e) Solid substances**

[2] Column 'A'	**Answer**	**Column 'B'**
(1) Earthquake	Change in the level of groundwater-table	**(a) Formation of artificial water reservoir**
(2) Tsunami	Loss of coastal regions	**(b) Wildlife lost**
(3) Forest fire	Wildlife lost	**(c) Loss of coastal regions**
(4) Landslide	Formation of artificial water reservoir	**(d) Change in the level of groundwater-table**

Question. 4. Answer the following questions in one sentence:

(1) Which is the instrument or machine that records the intensity of earthquake?

Answer: The instrument that records the intensity of earthquakes is called a seismograph.

(2) Which is the most common and effective solution for extinguishing fire?

Answer: The most common and effective solution for extinguishing fire is water.

(3) Which institutes have launched a program to forecast the landslides and its effects?

Answer: Institutes like the Indian Meteorological Department (IMD) and Geological Survey of India (GSI) have launched programs to forecast landslides and their effects.

Question. 5. Give scientific reasons:

(1) It is safer to find shelter under things like a bed, table at the time of earthquake.

Answer: It is safer to find shelter under things like a bed or table during an earthquake because these objects can provide protection from falling debris and collapsing structures, which are common hazards during seismic activity.

(2) Don't use lifts at the time of earthquake.

Answer: You should avoid using lifts during an earthquake since elevators can become stuck between floors if the power goes out or if the building experiences significant movement, leaving occupants trapped and unable to escape.

(3) The foundation of earthquake-proof building is separated from lower land.

Answer: The foundation of earthquake-proof buildings is designed to be separated from the lower land to allow for independent movement during seismic events, reducing the risk of structural damage and increasing overall stability.

(4) In monsoon, don't take shelter near hillside.

Answer: In the monsoon, it is advised not to take shelter near hillsides because heavy rainfall can trigger landslides, which can occur suddenly and pose significant danger to anyone in the vicinity.

Question. 6. Write short notes:

(1) Types of fire.

Answer:

1. Class A Fire (Solid Substances): Involves solid materials like wood and paper, which can be extinguished with water.
2. Class B Fire (Liquid Substances): Caused by flammable liquids such as petrol and oil, which cannot be extinguished with water.
3. Class C Fire (Gaseous Substances): Involves flammable gases like propane, requiring specific extinguishing methods that do not involve water.

4. Class D Fire (Chemical Substances): Caused by combustible metals such as sodium, which can react violently with water and need special extinguishing agents.
5. Class E Fire (Electrical): Arises from electrical equipment and requires turning off the power before using non-conductive extinguishing agents like carbon dioxide.

(2) Disaster relief - planning.

Answer:

1. Assessment of Risks: Identifying potential hazards in the area (earthquakes, floods, etc.) and their impacts on communities.
2. Resource Allocation: Planning the distribution of resources, including food, water, medical supplies, and shelter.
3. Community Training: Educating the community about disaster preparedness, evacuation routes, and emergency procedures.
4. Coordination with Agencies: Collaborating with government bodies, NGOs, and local organizations for an effective response and recovery.
5. Regular Drills and Updates: Conducting regular disaster response drills and updating plans based on changing risks and community feedback.

Question. 7. Answer the following questions:

(1) What are the specifications of an earthquake-proof building?

Answer:

1. Flexible Structure: Designed to absorb and dissipate seismic energy.
2. Deep Foundation: Anchored into stable soil or bedrock for stability.
3. Reinforced Materials: Uses strong materials like reinforced concrete and steel.
4. Base Isolation: Allows the building to move independently from ground motion.
5. Symmetrical Shape: Ensures even weight distribution to minimize torsional effects.

(2) Is there any relation between dam and earthquake? Explain.

Answer:

1. Seismic Activity: Large dams can induce earthquakes due to their weight.
2. Water Pressure: Changing water levels can affect stress on geological faults.
3. Case Studies: Historical events, like the Koynanagar dam incident, show a link between dams and seismic activity.

(3) What are the different ways to extinguish fire? Write briefly about them.

Answer:

1. Water: Cools down and removes heat from Class A fires (solid materials).
2. Foam: Cuts off oxygen supply for Class B fires (flammable liquids).
3. Carbon Dioxide: Displaces oxygen in Class E fires (electrical fires).
4. Dry Chemical Powder: Interrupts the fire's chemical reaction for multiple classes.
5. Fire Extinguishers: Portable devices for quick fire suppression.

(4) What are the safety measures and precautions to stop the fire?

Answer:

1. Install Smoke Detectors: Regular checks to ensure functionality.
2. Create Fire Escape Plans: Establish escape routes and conduct drills.
3. Store Flammable Materials Safely: Keep away from heat sources.
4. Use Fire Extinguishers: Ensure accessibility and train on their use.
5. Maintain Electrical Systems: Regular inspections to prevent electrical fires.

(5) Explain the effects of landslide.

Answer:

1. Property Damage: Destroys homes, roads, and infrastructure.
2. Loss of Life: Can trap and kill people suddenly.
3. Environmental Impact: Disrupts local ecosystems and wildlife.
4. Water Contamination: Pollutes water sources with debris.
5. Transportation Disruption: Blocks roads and railways, complicating rescues.

(6) Explain the relation between continuous rains and landslide. Give reasons.

Answer: Relation between continuous rains and landslides:

1. Continuous rain makes the soil wet and heavy, causing it to slide.
2. Rain weakens the soil, making it easier to slip down.
3. The extra water adds pressure to the slopes, leading to landslides.
4. Slopes can collapse after long rains, triggering a landslide