

14. Earthquake

Answers to Exercises

- A.
1. Volcanic activity and nuclear explosions carried out underground may cause earthquakes.
 2. The point of origin of an earthquake is called the seismic focus, or hypocentre.
 3. The extent of damage depends on the strength of the vibrations or the energy associated with them, density of population, the way buildings are constructed and the nature of the soil.
 4. Earthquakes below the sea can cause tsunamis. The waves are usually not very high in the deep sea, where they originate. But when they reach the coast, they rise high like massive walls of water. They sweep over the land, submerging everything in sight within a very short time.
 5. Two earthquake-prone regions in India are the Himalayan region and the Ganga-Brahmaputra basin.

- B.
1. There are two ways of protecting buildings—strengthening them or allowing them to move with the vibrations of the ground. One way of strengthening buildings is to divide the walls into rectangular areas and insert diagonal pieces in them. This stops the walls from getting 'squashed' when a sideways force acts on them. The best way to allow buildings to move is to place bearings between the foundation and the bottom of a building.
 2. When indoors during an earthquake, one should stay away from windows, glass objects, mirrors and things that can fall, like book cases and cabinets. Crawl under a table or bed or crouch near an inner wall or doorway and protect your head and face with your arms. Hold on to something that is unlikely to fall.

Basic Science: for Classes 6, 7 and 8



- C.
1. The crust of the earth consists of large blocks called tectonic plates which float on the pastelike mantle. The heat inside the earth sets up a current in the mantle, keeping it in constant motion. This makes the plates of the crust move continually, like rafts on a gentle ocean. The movement sometimes causes the edges of the plates to grind against each other with a lot of force. They may then get deformed, displaced, crushed or fractured. They may also slide under each other or move apart. Such changes in the plates send a tremor or set up vibrations through the crust, causing an earthquake.
 2. Most earthquakes last less than a minute, but they can bring down entire cities and kill thousands in a matter of moments. The tremors during an earthquake can make buildings collapse. They can twist railway tracks, destroy bridges, open up cracks in the ground and damage dams. They can start up fires and cause floods and landslides. The collapse of buildings is usually the cause of death and injuries, though floods and fires (caused by earthquakes) have also been known to cause great human suffering.

- D.
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| 1. tectonic | 2. mantle | 3. faults | 4. seismograph | 5. Richter | 6. epicentre |
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- E.
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| 1. (b) | 2. (a) | 3. (c) | 4. (b) | 5. (c) |
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