An Earthquake

Essay No. 01

So far, no foolproof method has been devised to predict an approaching earthquake. Scientist have created artificial earthquakes in the laboratories to apprise the people of their various aspects. But it is not essential that the earthquakes should always occur in the same manner. Some earthquakes are said to start from 32 to 100 kilometers below the surface of the earth and others from 100 to 650 kilometers below it.

A violent earthquake shook the city of Bam, 1285 km southeast of Teheran in I ran at 5.28 a.m (07.28 IST) on 26 December 2003. The earthquake was of the magnitude of 6.3 on the Richter scale. Its epicenter was outside Bam, about 1000 km southeast of Tehran. The quake hit the city when most of the people were in bed.

The city had a population of 80,000 and death toll was high. The citadel of Bam was destroyed. Telephone links with Bam were severed and the authorities were in contact with the city area through radio and satellite phone links. More than 90 percent buildings in the city were demolished.

The international community came to the rescue of the Iranian people and tents, blankets, canned food, bread, clothing and medicines were donated liberally by some countries and sent to affected area.

Another quake rock South Asia. Jammu & Kashmir and Pakistan are badly hit by the killer quake raising the death tool to 80000 in Pakistan and more than 1500 in Batalik village of Jammu & Kashmir. India extended her hands for help of earthquake victims Pakistan also.

Essay No. 2

An Earthquake

Earthquake means earth's crust shaking suddenly and violently. An earthquake happens when the surface or crust of the earth begins to shake suddenly and violently. Very large plates make up the earth's crust. Pressure on these plates comes from below the earth's surface. The pressure builds up over many years and finally may cause the plates of the crust to move, creating an earthquake.

Not all earthquakes cause damage or injury. Most are very mild. About 1,50,00 earthquakes occur each year; but only about one hundred are very destructive. Every part of the world has earthquakes, but in most places, they are not strong. For example, in the north eastern part of the United States there is almost never a strong earthquake. If we mark on a world map, the places where earthquake often occur, our marks will form two large belts, the pacific belt and the Mediterranean belt.

The earthquake shakes a building and loosens the bricks in a chimney or wall. The bricks fall, injuring someone or damaging other property. Earthquakes may also break water pipes, cut electric lines and damage gas mains. Among the worst calamities in India, on 30th September 1992 more than 50 villages around an area of about 70 sq. km on both sides on the Terna river in Latur and Osmanabad districts were wiped off the face of the earth by the earthquake. Seismic activity had registered 6.4 on the Richter scale.

Earthquakes are generally looked upon as disasters which strike without warming. However recent advances have enabled scientists to identify earthquake- prone areas on the basis of several indications. A significant part of the Himalayan region and some areas in the surrounding of large dams in Maharashtra can be identified as high-risk areas. Once earthquake – prone areas have been identified, it is important to formulate policies which earthquake strikes.

People should be given clear region – specific instructions about how they should behave when a quake strikes. Instructions should be in simple language which can be easily understood even by illiterate persons. For speaking this awareness, we should use radio, televisions, newspapers and other mediums. If they know what to do when a quake strikes – even the loss of a few seconds can lead to the loss of life at the time of quake – it will be easy to act without any confusion. This can save a large number of lives. A study of rescue effort revealed that 95 per cent of the trapped people were saved by local people. Ordinary villagers should be trained in rescue efforts.

Construction of high dams, nuclear stations and other high – risk industries should not be established in earthquake – prone areas. Maintaining a green cover will also help to reduce the damage. Rats, snakes, crows, dogs, fish and many other animals are helpful by their changed behaviour to inform about earthquakes beforehand. A warning before few minutes of earthquake can save thousands of live when an earthquake strikes.

Essay No. 03

Earthquakes

Mother Nature has created a number of beautiful things on this heavenly earth for man. Earth is not less than heaven if man learns to live the right way Mother Nature had hoped he would live his precious life. But man has always betrayed Mother Nature's trust. But a kind and loving mother as she always has been, she has been continuously ignoring his blunders, his failures and his mistakes as his tantrums that a child always throws up when he is in his mother's lap. But there are times when anger gets the better of her and she unleashes her fury which leaves a trail of havoc and mass destruction, enough devastating for man to realise his mistake.

Earthquakes are a true example of Mother Nature's fury on the human race. Scientifically defined as the displacement of the earth's crust along the lines of weaknesses, an earthquake of medium intensity can cause enough destruction to life and infrastructure, which cannot be rehabilitated properly for a decade to come. Earthquakes are unpredictable, their occurrence in a true sense can never be predicted which makes them even more devastating among other natural calamities. An earthquake can happen at any place and at any time, it never gives its victims a chance to escape.

An earthquake is accompanied by violent shaking of the ground, which is sometimes violent enough to cause even the tallest and toughest skyscrapers to crumble like breadcrumbs. The logic behind an earthquake is even more interesting. The point of origin of an earthquake is called the focus and lies deep within the earth's crust. The point that is vertically above the focus on the surface is called the epicenter and is liable to maximum damage as the intensity of the earthquake at this point is far greater than the surrounding areas. An aqueous layer of molten rocks called the mantle supports the earth's crust. The crust is divided into several plates that drift on this molten layer. This movement of the plates is negligible and causes mild shocks that are even hard to notice. However, a few of them are liable to widespread damage and panic.

Earthquakes vary in intensity. The instrument most frequently used by the seismologists, i.e. the people who study the movement of the earth's crust, is the Richter's scale. An earthquake of intensity on the Richter's generates a force equivalent to hundred times the intensity of the atomic bomb that was dropped on Hiroshima. As the value increases with one on the Richter's scale, the intensity increases hundred times the previous one. Another device is the seismograph that is used to measure earthquakes that are of small intensity and are known as tremors. However, these instruments are only used to measure the aftermaths of the earthquakes, they cannot be used to predict the occurrence of an earthquake.

However, for the sake of distinction, scientists have divided the earth's crust into various seismic zones on the basis of the seismic activity of the respective zone. The most seismically active zone is the most prone to earthquakes. An earthquake

can be avoided, but several precautions can be taken in this respect, Animals can be of utmost use Animals have their senses highly modified and developed as compared to the humans. Animal can sense an earthquake hours before its occurrence and hence respond automatically. In Japan, which is in the earthquake prone zone, people breed a special species of fish that behaves in an unusual manner before an earthquake by jumping out of water and diving in again. Similarly, advanced earthquake- proof constructions can also help in reducing the extent of the damage.

However, nature is not to take the entire blame for the destruction caused by an earthquake. Illegal building constructions are in a way more than responsible for the damage done to life and property. The scene after an earthquake is horrible. Because of the collapsed buildings several people are buried alive under the debris. A majority of the people die not because of the injuries but due to tardy reinforcement work. People are rendered homeless for several days, and a lot of time is wasted in the assessment of the damage. Remote areas are ignored altogether. Casualties don't mount because of the earthquake but because of hunger and diseases. However, in spite of this slow rehabilitation work, the whole nation should face this calamity as one, because without unity nothing is possible, but everything is impossible.

Essay No. 04

Earthquakes

An earthquake is one of the worst natural calamities. As the name itself suggests, earthquake is the quivering or shaking of the surface of the earth, at some point on the earth. Its origin can be traced to the early days of earth formation. The cause of an earthquake is the movement or dislocation of lava and hot gases under the depths of the earth's crust. When an earthquake is about to occur, there is first a mild movement of the mass of the earth as if it is moving as a cradle, such slight movements are usually quite a few in number and they serve as warning signals, that, more and fast movements can be expected in its wake. This slight quiver may or may not be followed by stronger tremors, but, if they do, people on earth in that particular area are in for big trouble.

For many centuries man did not know why earthquakes occur and how they occur and to what extent they would cause damage. He only felt that mother earth was angry with him and so caused the earthquake and he always feared it. It was Aristotle, the great Greek philosopher, who related the phenomenon of earthquake to physical factors. According to Aristotle when the air compressed within the earth escapes, it shakes some part of the land. This emission is called volcanic activity. When the volcano bursts, lots of lava, gas etc., come out of the earth and fallout.

This causes pressure imbalance and results in producing earthquake waves in the surrounding areas. It was thus identified that volcanic activity is one of the reasons for -earthquakes. This volcanic activity results in faultings. To fill in the new faults, the movement of earth takes place. This causes tremor.

The second reason is lsostatic adjustment. The surface of the earth has certain raised up blocks and certain depressed blocks. They keep the balance of the earth, when it moves revolving on units of axis. These raised up blocks are washed down due to various reasons and cause imbalance. Then also the earthquakes occur to regain and maintain that balance.

We could therefore see that earthquakes commonly occur in volcano prone areas and under the feet of hills and mountains, not well settled in Earth. Earthquakes frequently occur in China, Japan, Philippines, southern parts of the Himalayas, volcano prone parts of Europe and western parts of North and South America. They are also likely to occur in Rajasthan in India and Arabian countries. One cannot say that earthquakes do not occur in other places. They may occur in any part of the world at any time. We are not sure of the underground movements of the earth and its pressure points, so one can only identify areas, where they are likely to occur.

Results of these quakes: All earthquakes did not cause severe damage. Those which are of severe intensity are really dangerous. In residential areas the earthquakes cause real damage. Earthquakes may cause changes in the natural environment. It may cause rift in the earth's surface which further results in water fountains which emit a lot of sand. It may change the course of the river which may cause floods. In the hilly areas it results in landslides. It also results in the destruction of man-made buildings, roads, railway tracks, bridges and telephone connections. The earthquakes cause maximum damages in the sky scrapers and densely populated areas.

How to lessen the effects of earthquake: The best way to lessen the consequences of the earthquakes is to keep a vigil on the earthquake frequented areas and to keep the public well informed about its possibilities. The people should be evacuated from the earthquake prone areas well in time. The scientists are now able to study and define the secondary waves and tertiary waves also in earthquakes. Scientists are able to study the underground movements of waves with the help of a machine called seismograph. With its help one can also predict the likely possibility of earthquakes occurrence as to where and when they are likely to occur. In the areas that are more prone to earthquakes, houses are made of lighter material like thatch, bamboo and wood which even when rocked and broken do not injure life.

How to measure the intensity of earthquake: All earthquakes do not cause severe damage. Those which are of severe intensity are really dangerous. There are scales to measure the intensity of the earthquakes. The first one is Mercall's scale. It is a qualitative scale and not a quantitative scale and so not useful to measure the intensity. The second one is Richter scale. Richter scale is measured with the help of a graph which measures the energy that is released from within. It is measured with numbers. If the earthquake measures 7 points on Richter scale, it causes severe damage as it is of severe intensity. Those measuring 5 and less points do not cause much damage.

Earthquakes in India: Looking at near about 1200 earthquakes that occurred in India at various intervals the Meteorological Department has divided the country into five zones.

Zone 1: Dangerous; Zone 2: Less dangerous; Zone 3: Medium danger; Zone 4: Much danger prone zone; and Zone 5: Too much i.e., excessive danger prone.

Near about 55% of the land area in India remains in the grip of earthquakes. But the intensity of the earthquakes is not the same in all the areas. The recent experiences reveal that not even a single area of India is earthquake free. The earthquake prone areas of India are the Himalayan Region, North-eastern India, Kuchh, the Western Coastal Area near Ratnagiri and the Andaman and Nicobar Islands. The more dangerous areas are—The Gangetic plains, the Brahmaputra valley and Western Rajasthan.

Only a few earthquakes have occurred in the Deccan Plateau. The earthquake of 1967 at lcwyna, the earthquake of 1993 at Latur in Maharashtra and the one in Gujarat in 2000 are the latest ones in this area.

In the matter of natural calamities man cannot be a master unless he masters nature completely. That is not possible for man with the limited knowledge of nature he has at his command.