

Lesson at a Glance

- A **cyclone** is a region of low atmospheric pressure. It occurs as a swirling atmospheric disturbance, accompanied by powerful **cyclonic winds** blowing in a clockwise direction in the Northern Hemisphere and in an anti-clockwise direction in the Southern hemisphere.
- The winds travel usually at speeds of over 300 km/h. They are accompanied by heavy rains and enormous waves. The centre of the cyclone is called the **eye of the cyclone**. Cyclones have diameters of several hundred kilometres.
- The **torrential rains** accompanying the cyclones cause flooding in coastal areas. The gales and strong winds uproot trees, destroy telephone lines and electricity poles, thus disturbing the whole civic life.
- Cyclones usually occur in the region between 5–20 degrees latitude (both North and South of the equator).
- The entire eastern coast of India is vulnerable to cyclones. These cyclones originate in the **Bay of Bengal**.
- **Deforestation** and **encroachments** in coastal areas make them more vulnerable to cyclones. Forests help as a shield against the cyclonic winds.
- The **Indian Meteorological Department** (IMD) is responsible for forecasting cyclones and warning people against them.
- During seasons when cyclones are possible, people in coastal areas should always be alert. They should update themselves about approaching waves through TV and radio. Fishermen should avoid going to the sea after warning has been issued. Safe shelters should be identified so that people are ready to evacuate any time. An easily accessible emergency kit is advisable. Adequate food grains should be stored in safe places so that they come of use in times of cyclones.
- After a warning has been issued, doors and windows should be closed securely. Food items should be kept in secure waterproof bags. Warm clothing should be worn. TV and radio should be constantly used for further information.

- After the cyclone, one should wait for official advisories before moving out. Electric appliances should not be used in wet condition.

■ TEXTBOOK QUESTIONS SOLVED ■

I. Read the newspaper article given below :

29 October 1999

Hundreds feared killed as cyclone devastates Orissa coast

Several hundred people were feared killed as the super cyclone with a velocity of more than 260 kmph battered 10 coastal districts of Orissa for more than eight hours today. The state government called in the army and the air force to help carry out relief and rescue operations. "You cannot imagine the devastation. More than 200,000 houses have been destroyed and vast tracts in the coastal areas submerged," Chief Minister Giridhar Gamang told the United News of India on telephone. He also spoke to Defence Minister George Fernandes to send in troops, air force helicopters and transport aircraft. All the 10 affected districts remained cut off from the rest of the country with power supply and telecommunication links cut off.

According to initial reports, heavy damage has been reported in the affected areas. Road links in certain areas have been cut off. The cyclone hit Paradip port this morning at a speed of 260kph. The diameter of the cyclone was very big and all nine coastal districts of Orissa were affected badly. The storm of rare intensity left petrified residents fearing for their lives in the capital and the thickly populated areas along the coast. Massive loss of life and property was feared, but a clear picture will emerge only after the storm abates.

The hardest of trees fell to the ferocity of the gales, which swept away much of what came in their way. Torrential rains continued to lash the capital city, which is about 65 km from the Puri coast. The flat terrain along the coast allowed the strong tidal waves to reach far inland without obstruction. The cyclone

stormed Bhubaneswar at around 0830 IST. The gale speed had touched a howling 260 kmph by 1500 IST. Telephone and electricity poles snapped like matchsticks, leaving the telecommunication network in shambles. Power breakdowns plagued the affected areas with little prospects of early restoration of supply. The air traffic control tower in Bhubaneswar reportedly suffered damage, leaving little scope for early resumption of air traffic. Fallen trees blocked the roads and the highway between Cuttack and Bhubaneswar.

The army moved in to provide immediate relief. Two signal attachments were flown in with INMARSAT terminals to re-establish telecommunication links. Electrical and mechanical engineers of the army are already trying to restore power supply.

Huts and other fragile structures collapsed, forcing the inmates to seek shelter in temples and schools. Tidal waves rose two-storey high, breaking embankments at Talachua in Paradip and Erasama. Large parts were inundated in the coastal areas. But details were not immediately available. Ships had been taken off the harbour. Several buildings, including the state secretariat complex, were damaged. Eyewitnesses said no tall tree was standing in the entire city anymore. Old-timers said they had never seen such devastation.

The building housing the UNI offices in the heart of the city was among the structures damaged. It forced the agency to shut down its computerised news operations. The only means of communication available was the telephone line, which also threatened to go off anytime.

Full details of the havoc wrought by the cyclone are yet to come in, but it was feared to have left a ghastly trail, especially in the coastal areas. Meanwhile, the railways cancelled 14 passenger and mail trains scheduled to run in the cyclone-affected areas.

Source: *United News of India*

Q. 1. *Imagine that you were in Bhubaneswar when the storm struck.... Write down what you experienced and saw around you in a page. Share your experiences with your classmates.*

Ans. I was in Bhubaneswar. It was great disastrous situation when the storm broke. The wind was blowing so fast that the whole world seemed to be flying. Everyone was confused. I was stuck in a house. After four hours of the storm, the wind calmed down. Rescue teams had reached. As I was a trained NCC cadet, I also joined the rescue team. I helped people who were victimised. I brought them to a relief camp. I arranged food and water. I organised my own rescue team with the help of the local boys. We informed the other NGOs and government agencies. I stayed there for fifteen days. It was an unforgettable experience for me.

Q. 2. *In your view, what preventive actions could Orissa have taken to reduce the damage caused when the Super Cyclone struck?*

Ans. Before any cyclone strikes, if an alert is issued, it can help in minimising the damage. If people know beforehand about the impending danger, they can take measures to evacuate themselves in time. The government should have disaster management teams ready for such situations. The meteorological department has the responsibility to sound the warning. After the warning, disaster management teams should get into action and contribute in taking people to safe places. Although we can not prevent cyclones, these measures can help us in reducing the damage.

II. *Make a contingency plan with all the members in your class and conduct a mock cyclone drill following a cyclone warning.*

Ans. Attempt yourself with help from your subject teacher.

III. *How would you increase awareness among your community members about preparedness for cyclones? Make charts and illustrations, showing this.*

Ans. Attempt yourself with help from your subject teacher.

Exercises

Q. 1. *What causes a cyclonic storm?*

Ans. A cyclonic storm is caused by a low pressure zone surrounded by cyclonic winds. Cyclones are caused due to a combination of warm sea temperature, high relative humidity and atmospheric instability.

Q. 2. *What are the hazards associated with cyclones?*

Ans. Hazards associated with cyclones include torrential rains, floods and high tidal waves.

Q. 3. *What is the eye of a cyclone and what are its characteristics?*

Ans. The eye of the cyclone is nothing but the centre of the cyclonic winds. The eye is characterised by a calm zone with a good weather.

Q. 4. *List the steps in preparing for a cyclone.*

Ans. During seasons when cyclones are possible, people in coastal areas should always be alert. They should update themselves about approaching waves through TV and radio. Fishermen should avoid going to the sea after warning has been issued. Safe shelters should be identified so that people are ready to evacuate any time. An easily accessible emergency kit is advisable. Adequate food grains should be stored in safe places so that they come of use in times of cyclones.

Q. 5. *Besides natural causes, what are the man made reasons, which have contributed to increase in the impact of cyclones?*

Ans. Besides natural impact of cyclones, human activities like deforestation and encroachments in coastal areas contribute in increasing its ill-effects, since forests present on coasts help in shielding the communities living in residential areas from the impact of cyclonic winds.

Q. 6. *Which are the cyclone prone areas of our country?*

Ans. Coastal areas of India are cyclone-prone. The eastern coastline is more prone than the western coastline.

