

Chapter-11

Weather and Climate

Q: What is Weather? (2017)

Weather:

Weather is the temporary state of sky and the atmosphere at a certain place. Weather is different in different places and at different time of day.

Q: What is climate?

Climate:

Climate is the change of usual weather pattern in a certain area. It can also be described as the average weather condition of a certain area for a long period of time.

Q: Write a difference between weather and climate. (2018)

Differences between weather and climate

Weather	Climate
1. Weather is the condition of a particular area for short period.	1. Climate is the average result of many years weather of an area.
2. It may change within a short period of time.	2. It does not change suddenly takes many years
3. Weather of nearby places may vary.	3. Climates of certain region are same.
4. Example- There was rain in Faridpur but no rain in Barishal.	4. Example- Climates of Bangladesh, Thailand and west Bengal of India are similar

Q: Describe the relation between weather and climate.

Relation between weather and climate:

Weather and climate are not same, though there is a close relation between them.

Weather is the condition of sky and atmosphere of a place for a short time. Climate is the general condition of weather of a place for many years.

Climatologically, the rainy season of Bangladesh starts in the middle of June and ends in August. The onset date of monsoon rain changes every year. However, we do know the probable time when the rainy season starts from our experience about climate.

Q: What is Climatology?

Climatological: Climatology is the scientific study of climate.

Q: What is air pressure? (2016)

Air pressure:

The force produced by the weight of the air pressing down on the earth. Wind blows from high pressure to low pressure area.

Q: Write the definition of High air pressure and Low air pressure.

High air pressure / High pressure:

Air over the ocean is cooler and heavier so it sinks. As a result, high air pressure develops over the ocean. The wind blows from high pressure to low pressure area.

Low air pressure /Low pressure:

Air that is warmed becomes lighter than the surrounding air, so it rises up. As a result, low pressure develops over the land.

Q: How does low air pressure create? (2017)

Ans: If the temperature of a place is high, the air of that place becomes warmer and lighter, and rises upward. As a result, air decreases there. This is called low pressure. During day time, land remains warmer than the water bodies. The warm land warms the air above. This warm air becomes lighter and rises upward. As a result, low pressure develops over the land.

Q: In Bangladesh how air pressure creates monsoon wind system?

The wind blows from high pressure to low pressure area in order to replace the rising warmer air by the cold air. At night, the land is cooler than the ocean. Therefore, high pressure develops over the land and low pressure develops over the ocean.

In Bangladesh, we experience southwest monsoon wind during rainy season and northeast monsoon wind during winter season. In rainy season June-August, the land of Bangladesh is warmer than the Bay of Bengal. In winter season December- February, the land is cooler than the Bay of Bengal. These seasonal temperature contrasts of the land and the ocean develop high- and low-pressure system. It produces monsoon wind system.

Q: Write the names of 2 weather components. (2018)

Q: Write 3 components of weather and climate. (2018)

Ans: The components of weather and the components of climate are same.

There are six weather components. They are:

- a. Temperature
- b. Humidity
- c. Wind
- d. Cloud
- e. Rain and

f. Air Pressure.

Q: Write three effect of change of weather components. (2018)

Ans: There effect of the change of weather components:

- a. Occurrences of extreme low temperature causes cold waves and extreme high temperature causes heat waves.
- b. Excessive rainfall can cause flood.
- c. Low air pressure can cause cyclone.

Q: What is Humidity?

Humidity:

Humidity is the measure of how much moisture is in the air. The lower the humidity the lesser the moisture in the air.

Q: What is heat wave? Write the effects of heat wave.

Heat Wave:

A heat wave is a prolonged period of excessively hot weather.

Effects of Heat wave:

We experience heat wave every year but we face extraordinary spells of heat wave that may occur only once a century. These severe heat waves cause

- a. catastrophic crop failures.
- b. thousands of deaths of animals including human being

Q: What is cold wave?

Cold Wave:

Occurrences of extreme low temperature in association with incursion of dry cold winds from north into our country are known as cold wave. Severe cold which is intolerable for plants and animals is very rare in Bangladesh.

Q: What is Flood?

Flood:

Flood is an overflow of a large amount of water beyond its normal limit. In every rainy season about one fifth of Bangladesh is flooded, and extreme years, two third of land can be submerged in flood water. It is because of our topography and climate.

Q: What is drought? Write the causes of Drought.

Drought:

A usually long period of dry weather is called as drought. Bangladesh faces drought especially in the northwestern part of country.

Causes of drought:

- a. Abnormally less rainfall
- b. Higher temperature than usual.

Q: Write the definition of Nor 'wester. Write causes of Kal Baishakhi. (2018)

Nor 'wester (Kal-Baishakhi):

Thunderstorms which is common during summer in our country is known as Nor 'wester or Kal-Baishakhi. It grows by surface heating.

Causes of nor 'wester:

- a. It grows by surface heating.
- b. It is more frequent in the late afternoon.
- c. The size of nor 'wester is from several kilometers to 20 km.
- d. It is the vertically grown-up convective cloud called 'Cumulonimbus' that brings thunder and lightning, heavy rain, hail, gusty/squally winds and even tornadoes.

Q: What is Tornado? Write two characteristics of tornado. Write the effects of tornado.

Tornado:

Tornado is a narrow, violent, funnel-shaped column of spiral winds.

Characteristics of Tornado:

- a. The wind extends downward from a cumulonimbus to the ground.
- b. The size of it is usually less than 1 km.

Effects of Tornado:

Tornado can cause various damages such as :-

- a. Removing the roofs.
- b. Collapsing some exterior walls of poorly built structure. It can even destroy well-built structures
- c. Cause sever crop destruction.

Q: What is cyclone? Write the characteristics of cyclone.

Cyclone:

Cyclone is a large low-pressure system and a revolving storm that consists of numerous thunderstorms.

Characteristics of cyclone:

- a. The size of the cyclone is 500-800 km.
- b. It hit our country bringing extremely powerful winds and torrential rain.
- c. Sometime strong surge is created due to cyclone.

Q: Write the causes and effects of cyclone.

Causes of cyclone:

Cyclone are created by getting by heat and water vapor from the warm Indian oceans and the Bay of Bengal.

Effects of cyclone:

Greatest damages during cyclones are:

- a. Devastating inundation caused by storm surge.
- b. Storm surge associated with high tide wash away everything in the coastal areas.

Q: Write the causes of the change of season in 5 sentences. (2016)

Ans: Change of seasons is caused by:

- (a) Changes of humidity can also cause season change.
- (b) Changes of weather components can also cause weather change.
- (c) variation in the angle of the Sun's radiation due to the tilt of the Earth's axis of rotation
- (d) variation of distance of the Earth from the Sun.
- (e) periodic variations in Solar activity

Q: Why is there more rain fall during rainy season? (2016)

Ans: The sun rays hit Bangladesh vertically during the rainy season. That's why, the weather remains hot in Bangladesh then the air pressure remains low. At the time, the air over the Bay of Bengal becomes less warm. So, air pressure remains high there. As a result, the wind blows from the Bay of Bengal to the land which contain much water vapor with it causes more rain fall during rainy season.

Q: How does low air pressure create? (2016)

Ans: If the temperature of a place is high, the air of that place becomes warmer and lighter, and rises upward. As a result, air pressure decreases there. This is called low air pressure. During day time, land

remains warmer than water bodies. The warm land warms the air above. This warm air becomes lighter and rises upward. As a result, low air pressure develops over the land.

Q: From which way does the monsoon wind blow in the winter season? (2016)

Ans: The monsoon wind blows from the north east in the winter season.

Q: Write two reasons causing more rainfall during the rainy season in Bangladesh. (2018)

Ans: Two reasons causing more rainfall during the rainy season in Bangladesh-

- a) The monthly average humidity is higher than other months.
- b) South-west seasonal wind brings much more moisture from the Bay of Bengal during rainy season.

Meaning of some words

Cumulonimbus: Cloud forming a towering mass with a flat base at fairly low altitude and often a flat top, as in thunderstorms.

Surge: A sudden powerful forward or upward movement, especially by a crowd or by a natural force such as the tide

Inundation: Flood.

Assessment Date:

Assessment on this chapter will be held on 11 August, 2020