

Natural Phenomena: Winds, Storms and Cyclones**Exercise – 1****Multiple Choice Questions**

DIRECTIONS: The following questions have four choices (a), (b), (c) and (d) out of which only one is correct. You have to choose the correct alternative.

1. _____ maximum temperature of the day is observed.
(a) At noon
(b) In the afternoon
(c) Either at noon or in the afternoon
(d) None of these
2. _____ causes all the changes in weather?
(a) Wind
(b) Rain
(c) Sun
(d) None of these
3. Air
(a) occupies space
(b) exerts pressure
(c) has mass
(d) All of the above
4. Wind is
(a) air in motion
(b) oxygen in air
(c) Both the above
(d) None of these
5. Increased wind speed is accompanied by
(a) increase in pressure
(b) decrease in pressure
(c) no change in pressure
(d) None of these
6. Air moves from a region of
(a) low pressure to high pressure
(b) high pressure to low pressure
(c) movement of air is independent of pressure
(d) None of these
7. Main cause of movement of air is
(a) uneven heating of the earth
(b) movement of human beings
(c) Both the above
(d) None of these
8. Flow of wind from ocean to land is called
(a) cyclone
(b) typhoon
(c) monsoon
(d) None of these
9. What causes cyclones?
(a) High speed wind
(b) Air pressure difference
(c) High speed wind and air pressure difference
(d) None of these
10. _____ is used to measure wind speed?
(a) Barometer
(b) Manometer
(c) Anemometer
(d) Speedometer
11. In India the agency responsible for study of development and movement of cyclones is
(a) Indian forest department
(b) Indian forensic department
(c) Indian meteorological department
(d) Indian archeological department
12. The pressure is exerted by air in _____
(a) upward direction only
(b) downward direction only
(c) side ways only
(d) All the directions
13. The safest way to protect yourself from lightning is to _____
(a) start running in an open field
(b) keep yourself covered with an umbrella
(c) take shelter under a tree
(d) squat low on the ground
14. A thunderstorm is accompanied by
(a) lightning
(b) sound
(c) lightning and sound
(d) cyclone
15. Which of the following is correct about destruction caused by cyclones?
(a) Severe loss of life and property
(b) Reduces fertility of soil
(c) Both of the above
(d) None of these
16. During a cyclone air moves from
(a) region of high pressure to low pressure
(b) region of low pressure to high pressure
(c) region of low velocity to high velocity
(d) region of high pressure to low velocity
17. On blowing air into balloon, the size of the balloon increases because
(a) air exerts pressure
(b) warm air rises up
(c) air is stronger than balloon
(d) None of these

18. Which of the following is the first sign of an approaching cyclone?
 (a) Rains accompanied by lighting
 (b) High temperature and humidity
 (c) Cool breeze and rains
 (d) Powerful water waves
19. A tornado is
 (a) uneven heating between two regions
 (b) a violent, twisting funnel of wind
 (c) strong circulatory winds in the tropical region
 (d) None of these
20. Pick the odd one out of the following
 (a) Monsoon (b) Typhoon
 (c) Hurricane (d) Cyclone
21. Which of the following is correct?
 (a) Greater the difference in pressure, the faster the air moves
 (b) Air contracts on cooling as also upon heating
 (c) Increased wind speed is accompanied an increase in air pressure.
 (d) All of the above
22. Which of the following help in development of a cyclone?
 (a) Wind speed (b) Wind direction
 (c) Humidity (d) All of the above
23. Typhoon is essentially a
 (a) cyclone (b) thunderstorm
 (c) tornado (d) None of these
24. Why does warm air rise up?
 (a) It is heavier than cold air
 (b) It is lighter than cold air
 (c) Warm air occupies less space than cold air
 (d) None of these
25. This phenomenon is quite frequent in India and it may form within a cyclone. It is a
 (a) cyclone (b) hurricane
 (c) tornado (d) typhoon
26. Suppose you are in a car and it is raining heavily with thunderstorms. Then what is the best way to protect yourself from a possible thunder storm fall?
 (a) Remain in the car
 (b) Get out of the car and take cover under the car
 (c) Run to a nearby tree
 (d) Get out and stand under an electric pole

27. Which of the following plays an important role in the early-warning systems for cyclones?
 (a) Helicopters (b) Submarines
 (c) Satellites (d) Stars
28. High speed winds are accompanied by
 (a) increased pressure (b) reduced pressure
 (c) water vapour (d) static electricity

Match the column

DIRECTION: Match Column-I with Column-II and select the correct answer using the code given below the columns.

29.

Column-I	Column-II
(a) Anemometer	(p) Caused by high speed wind and air pressure differences.
(b) Cyclone	(q) Accompanied by low pressure.
(c) High wind speed	(r) Instrument used to measure wind speed.
(d) Wind movement	(s) Caused by to uneven heating of earth surface.

- (a) (A) → (r), (B) → (q), (C) → (p), (D) → (s)
 (b) (A) → (r), (B) → (p), (C) → (q), (D) → (s)
 (c) (A) → (r), (B) → (s), (C) → (p), (D) → (q)
 (d) (A) → (r), (B) → (q), (C) → (s), (D) → (p)

30.

Column-I	Column-II
(a) Wind carrying water	(p) Thunderstorms
(b) Dark funnel shaped cloud	(q) Tornado
(c) Moving air	(r) Monsoon
(d) Develop in India very frequently	(s) Wind

- (a) (A) → (r), (B) → (q), (C) → (s), (D) → (p)
 (b) (A) → (p), (B) → (q), (C) → (r), (D) → (s)
 (c) (A) → (q), (B) → (r), (C) → (p), (D) → (s)
 (d) (A) → (s), (B) → (p), (C) → (r), (D) → (q)

Passage Based Question

DIRECTIONS: Read the passage given below and answer the questions that follow.

Passage

Take a soft plastic bottle and fill it with boiling hot water. Empty the bottle and cap it tightly. Place the water under running water. You will observe that the plastic bottle becomes distorted.

31. Why does the plastic bottle get distorted?
- (a) Because it is made of soft plastic
 - (b) Because the difference in air pressure inside the bottle and the air pressure outside
 - (c) Both the above
 - (d) None of the above
32. What causes the air pressure inside the bottle to decrease?
- (a) Distillation of steam inside the bottle when water is poured over it.
 - (b) Condensation of steam inside the bottle when water is poured over it
 - (c) Evaporation of steam inside the bottle when water is poured over it
 - (d) All the above
33. Condensation of steam inside the bottle causes:
- (a) increasing the amount of air inside the bottle
 - (b) decreasing the amount of air inside the bottle
 - (c) increasing the pressure of air inside the bottle
 - (d) None of the above

Assertion/ Reason Based Questions

DIRECTIONS: The questions in this segment consists of two statements, one labelled as "Assertion A" and the other labelled as "Reason R ". You are to examine these two statements carefully and decide if the assertion A and reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these questions using codes given below.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

34. **Assertion (A):** Air expands on heating
Reason (R): Air exerts pressure.

35. **Assertion (A):** Warm air is lighter than cold air.
Reason (R): Air moves from a region of high pressure to a region of low pressure.

Statement Based Questions

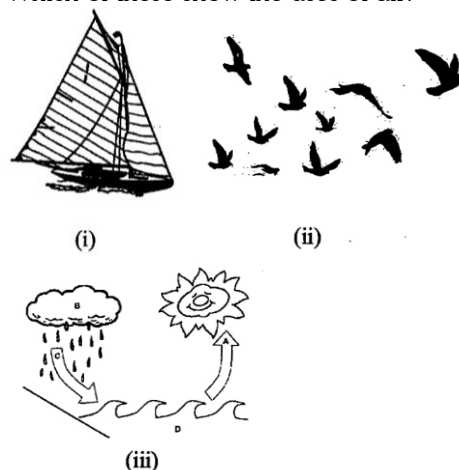
DIRECTIONS: Read the following two statements carefully and choose the correct options.

- (a) Statement (1) is correct while statement (2) is incorrect.
 - (b) Statement (2) is correct while statement (1) is incorrect.
 - (c) Both statements are correct
 - (d) Both statements are incorrect.
36. **Statement 1:** Wind currents are generated due to shape of earth.
Statement 2: High speed wind is accompanied by reduced pressure.
37. **Statement 1:** Anemometer measures speed of wind.
Statement 2: Wind vane measures direction of wind.

Figure Based Questions

DIRECTIONS: On the basis of following diagram/ picture answer the questions given below:

38. Which of these show the uses of air?



- (a) (i) only
- (b) (ii) only
- (c) (i), (ii) and (iii)
- (d) (i) and (ii) only

Exercise – 2

Multiple Choice Questions

DIRECTIONS: The following questions have four choices (a), (b), (c) and (d) out of which only one is correct. You have to choose the correct alternative.

1. Which of the following information is generally not provided in a weather report?
(a) Time of sunrise and sunset
(b) Humidity
(c) Wind direction
(d) Clouds and rainfall
2. What causes differences in air pressure?
(a) Population of the area
(b) Topography of the region
(c) Difference in temperature
(d) None of these
3. Which regions of earth get maximum heat from the sun?
(a) Polar regions
(b) Regions close to equator
(c) Regions between 20-30 degree latitude
(d) None of these
4. What causes air circulation from poles to warmer latitudes?
(a) Air at poles is colder as compared to air at latitudes about 60 degrees.
(b) Air at poles is hotter as compared to air at latitudes of about 60 degrees.
(c) Temperature of air is almost same at poles as at latitudes of 60 degrees.
(d) None of the above
5. _____ is used to measure atmospheric pressure?
(a) Barometer (b) Manometer
(c) Pressure cooker (d) None of these
6. At which place will you find the atmospheric pressure low?
(a) At equator only
(b) At 30° N and S
(c) At the poles
(d) At the equator and at 60°N and S
7. _____ contributes to development of a cyclone.
(a) wind speed (b) temperature
(c) humidity (d) All of the above
8. Typhoon is another name used for cyclone in
(a) India (b) Philippines.
(c) Japan (d) Both (b) and (c)
9. In U.S.A a cyclone is called a :
(a) Typhoon (b) Tsunami
(c) Hurricane (d) None of these
10. Tornadoes are dark funnel shaped clouds that reach from
(a) the sky to the ground
(b) the ground to the sky
(c) any one of (a) or (b)
(d) None of these is correct
11. Roofs are blown off when there is a strong wind because
(a) air in the room is at a lower pressure.
(b) moving air over the roof is at a lower pressure.
(c) moving air over the roof is at a higher pressure.
(d) moving air over the roof is at a lower pressure than the calm air under the roof.
12. Eye of a hurricane is the region of
(a) very high pressure
(b) full of vapor
(c) depression and a calm area
(d) whirling wind
13. The winds from oceans carry water and bring rain are called
(a) cyclone (b) typhoon
(c) monsoon (d) None of these
14. Low atmospheric pressure exists on the earth in which of the following latitudes?
(a) At the equator only
(b) At 30° N and S
(c) At the poles
(d) At the equator and at 60° N and S
15. Select the correct statement.
(a) In winter, the winds flow from the land to the ocean.
(b) The coastline of India is not vulnerable to cyclones.
(c) A cyclone is formed by a very high-pressure area with very high speed winds revolving around it.
(d) None of these

16. High speed winds are accompanied by
(a) increased pressure (b) reduced pressure
(c) water vapour (d) static electricity
17. Wind currents are generated due to
(a) shape of earth (b) sea breeze
(c) thunderstorm (d) cyclone
18. Which of the following will rise the highest?
(a) Air at 10°C (b) Air at 40°C
(c) Air at 20°C (d) Air at -5°C
19. Why are cloudy nights warmer than clear nights?
(a) The clouds do not allow the heat radiating from the earth to escape
(b) Amount of the moisture in the air increases
(c) The clouds result in heavy rainfall at night
(d) Both (a) & (c)
20. Which of the following is correct?
(a) In winter the winds flow from ocean to the land
(b) The coastline is vulnerable to cyclones
(c) In Philippines cyclone is called a hurricane
(d) In U.S.A. a cyclone is called a typhoon.
21. Which of the following is correct?
(a) Winds from the oceans carry water and bring rain. It is a part of the water cycle.
(b) Radars help to monitor cyclones.
(c) Centre of cyclone is a calm area.
(d) All of the above
22. Why does the air in regions close to equator get warmer?
(a) These regions are situated near the equator
(b) These regions get maximum heat of the sun
(c) Both the above are correct
(d) None of these
23. Cooler air from 0 to 30 degree latitudes on either side of the equator moves in towards the equator. These winds blow towards the equator from :
(a) North to south in northern hemisphere
(b) South to north in northern hemisphere.
(c) East to west
(d) West to east
24. It is known as hurricane in U.S.A. and of typhoon in Japan, in Philippines it is known as
(a) Cyclone (b) Typhoon
(c) Tornado (d) None of these

25. How do cyclones decrease the fertility of the soil in the coastal areas?
(a) By flooding the land with saline water
(b) By dissolving soil and rocks
(c) By increasing the water table of the place
(d) By decreasing the water table of the place

Match the column

DIRECTIONS: Match Column-I with Column-II and select the correct answer using the code given below the columns.

26.

Column-I	Column-II
(a) Wind	(p) Wind transporting water
(b) Monsoon	(q) Moving air
(c) Thunderstorms	(r) Dark funnel shaped cloud
(d) Tornado	(s) Swift movement of falling water droplets along with rising air that creates lightning and sound

- (a) (A) \rightarrow (p), (B) \rightarrow (q), (C) \rightarrow (r), (D) \rightarrow (s)
(b) (A) \rightarrow (q), (B) \rightarrow (p), (C) \rightarrow (r), (D) \rightarrow (s)
(c) (A) \rightarrow (q), (B) \rightarrow (p), (C) \rightarrow (s), (D) \rightarrow (r)
(d) (A) \rightarrow (p), (B) \rightarrow (q), (C) \rightarrow (s), (D) \rightarrow (r)

27.

Column-I	Column-II
(a) Hurricane	(p) Created due to difference in temperature
(b) Typhoon	(q) Name of cyclone in U.S.A.
(c) When filled in bicycle tube, keeps it inflated	(r) Alternative name of cyclone
(d) Difference in air pressure in nature	(s) Air

- (a) (A) \rightarrow (p), (B) \rightarrow (q), (C) \rightarrow (r), (D) \rightarrow (s)
(b) (A) \rightarrow (q), (B) \rightarrow (r), (C) \rightarrow (s), (D) \rightarrow (p)
(c) (A) \rightarrow (r), (B) \rightarrow (q), (C) \rightarrow (p), (D) \rightarrow (s)
(d) (A) \rightarrow (s), (B) \rightarrow (r), (C) \rightarrow (q), (D) \rightarrow (p)

Passage Based Questions

DIRECTIONS: Read the passage given below and answer the questions that follow.

Passage – 1

Take a boiling tube and stretch a balloon tightly over its neck. Insert the boiling tube in a beaker containing hot water. Wait for 2-3 minutes and observe the changes that take place in shape of the balloon. Now take out the boiling tube and

allow it to cool to room temperature. When it has cooled down place it in a beaker containing ice-cold water for 2-3 minutes and observe the changes in shape of the balloon.

28. What change do you expect when the tube containing the stretched balloon was kept in a beaker containing hot water?
(a) There will be no change in the shape of the balloon
(b) Balloon gets inflated
(c) Balloon gets deflated
(d) Shape of balloon becomes distorted
29. What changes do you expect when the tube containing the stretched balloon was kept in ice-cold water?
(a) No change is observed
(b) It gets inflated
(c) It gets deflated
(d) None of these
30. What happens to the air when the tube with the stretched balloon is kept in hot water?
(a) The air expands (b) The air contracts
(c) No change (d) None of these

Passage - 2

In nature itself there are situations that can create disasters and pose threat to human, animals and plant life. Two such situations are:

- (i) Thunderstorms and
- (ii) Cyclones.

31. What is the tendency of hot air?
(a) It tends to rise and causes a drop in pressure of atmosphere
(b) It tends to rise and causes an increase in pressure of atmosphere
(c) It tends to rise but does not cause any change in pressure of the atmosphere
(d) None of these
32. A large cyclone
(a) is a violently rotating mass of air in the atmosphere
(b) Has no eye
(c) Both the above
(d) None of these

DIRECTIONS: The questions in this segment consist of two statements, one labeled as "assertion A" and the other labeled as "reason R". You are to examine these two statements carefully and decide if the assertion A and

reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below.

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

33. **Assertion (A):** The leaves of trees flutter when wind is blowing.
Reason (R): Air exerts pressure
34. **Assertion (A):** Cyclones may cause severe loss of life and property.
Reason (R): In Philippines, cyclones are known as tornadoes.
35. **Assertion (A):** Tornadoes may form within cyclones
Reason (R): Most tornadoes are weak

Statement Based Questions

DIRECTIONS: Read the following three statements carefully and choose the correct option.

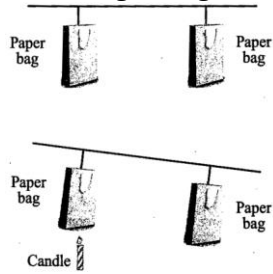
- (a) Statement (1) and (3) are incorrect while statement (2) is correct.
- (b) Statement (1) and (2) are incorrect while (3) is correct.
- (c) All the statements are correct.
- (d) All the statements are incorrect.

36. **Statement 1:** An area of low pressure is most likely to be in the eye of a cyclone.
Statement 2: Cyclone can be predicted in advance.
Statement 3: A typhoon is essentially a cyclone.
37. **Statement 1:** A thunderstorm becomes a cyclone when a very high pressure is accompanied by low speed winds revolving around it.
Statement 2: A gradual rise in air pressure indicates dry weather.
Statement 3: The formation of cyclones depends on the temperature and pressure.

Figure Based Questions

DIRECTIONS: On the basis of following diagram/
picture answer the questions given below:

38. From the given figure we can infer that



- (a) air expands and rises up on heating
- (b) air contracts and falls down on heating
- (c) Both the above
- (d) None of the above

Hints & Solutions

Exercise – 1

Multiple Choice Questions.

1. (b) Maximum temperature of the day is generally observed in the afternoon.
2. (c)
3. (d)
4. (a) Air in motion is called wind.
5. (b) Increased wind speed is accompanied by reduced pressure.
6. (b) Air moves from a region of high pressure to low pressure.
7. (a)
8. (c) Flow of wind from ocean towards land is called monsoon.
9. (c)
10. (c) Anemometer is used to measure wind speed.
11. (c)
12. (d) Air exerts pressure in all the directions.
13. (d)
14. (c)
15. (c)
16. (a)
17. (a)
18. (d)
19. (b)
20. (a)
21. (a)
22. (d)

23. (a) It is the name of cyclone used in Japan.
24. (b) Warm air is lighter than cold air.
25. (c) In India tornadoes are very frequent. A tornado may form within a cyclone.
26. (a)
27. (c)
28. (b)

Match the column

29. (b)
30. (a)

Passage Based Questions

31. (b)
32. (b) Steam (gas) gets condensed to water (liquid).
33. (b)

Assertion/Reason Based Questions

34. (b) Both are correct. Reason R is a not correct explanation of Assertion A.
35. (b)
36. (c)
37. (c)

Figure Based Questions

38. (c)

EXERCISE – 2

Multiple Choice Questions

1. (c) Direction of wind is generally not provided in the weather report of an area.
2. (c) In nature, differences in air pressure are created by difference in temperature.
3. (b) Regions of earth close to equator get the maximum heat of the sun.

4. (a) Warm air at latitudes at about 60 degrees rises up and cold air from Polar Regions rushes in to take its place.
5. (a) Barometer is used to measure atmospheric pressure.
6. (a) The pressure is low at the equator.
7. (d)
8. (d)
9. (c)
10. (a)
11. (d)
12. (c)
13. (c)
14. (a)
15. (a)
16. (b)
17. (a)
18. (b)
19. (a)
20. (b)
21. (d) The centre of the cyclone is a calm area called the eye of the cyclone.
22. (b)
23. (a) These blow from North to South towards equator.
24. (b)
25. (a)
26. (c)
27. (b)
28. (b) It gets inflated.
29. (c)
30. (a) Air expands on heating.
31. (a)
32. (a)
33. (a) Both are correct. Reason R is a correct explanation of Assertion A.
34. (c) Assertion A is true but Reason R is false. In Philippines they are known as typhoons.
35. (b)
36. (c)
37. (b)
38. (a) Hot air is less dense than cold air.