CHAPTER –8

WINDS, STORMS AND CYLONES
OBJECTIVE QUESTIONS

Q.1. Wind is

a. moving water.
b. non-moving water.
c. moving air.
d. non-moving air.

Ans. c
Explanation: Moving air is called wind.

Q.2. Agriculture, transport, communication, and electric supply are

a. affected by cyclones.
b. not affected by cyclones.
c. improved by cyclones
d. the causes of cyclones.

Ans. a
Explanation: Agriculture, transport, communication, and electric supply are damaged by cyclones.

Q.3. Jasmine inflated a balloon with air. The balloon becomes larger in size because

a. of the wind blowing inside the balloon.
b. of the pressure exerted by water particles inside the balloon.
c. of the constituents of air inside the balloon.
d. of the pressure exerted by air inside the balloon on its wall.

Ans. d
Explanation: Air inflated inside the balloon exerts pressure on its wall. This makes the balloon larger in size.

Q.4. It is easier to row a boat when wind is blowing from

a. the left side.
b. the right side.
c. the front.
d. behind.

Ans. d
Explanation: When wind is blowing from behind, it will push on the rower and the boat from behind. This will enhance the speed of the two. Therefore, it is easier to row in such a condition.

Q.5. Let us boil water in a can covered tightly with a lid. If we pour cold water on it with the lid still tightly attached to it,

a. the can will become larger in size.
b. the can will get elongated.
c. the can will get distorted.
d. the lid will get blown away.

Ans. c
Explanation: As water is poured over the can, some steam in the can condenses into water, reducing the amount of air inside. Therefore, the pressure exerted by air inside the can is less than the pressure exerted by the air from outside the can. As a result the can gets compressed.

Q.6. Increased speed winds are accompanied by

a. increased air pressure.
b. reduced air pressure.
c. increased as well as reduced air pressure.
d. increased water pressure.

Ans. b
Explanation: When a region has low air pressure than another region, then wind blows with high speed from the region of higher air pressure to the lower one. This will reduce the air pressure of the region with higher air pressure. Thus, increased speed winds are accompanied by reduced air pressure.

Q.7. Air moves from the region of

a. high air pressure to the region of low air pressure.
b. low air pressure to the region of high air pressure.
c. high water pressure to the region of low water pressure.
d. low water pressure to the region of high water pressure.

Ans. a
Explanation: Air moves from the region of high air pressure to the region of low air pressure.

Q.8. The greater the difference in air pressure,

a. the slower the water vapour moves.
b. the slower the air moves.
c. the faster the air moves.
d. the greater is the tendency of air to be still.

Ans. c
Explanation: Wind is caused by the difference in air pressure. The speed of the wind increases with increase in the difference of air pressure.

Q.9. The difference in air pressure between two regions is caused due to

a. the difference in constituents of air in the two regions.
b. the difference in temperature of the two regions.
c. the same constituents of air in the two regions.
d. the same temperature of the two regions.

Ans. b
Explanation: Hot air rises up as it is lighter than colder air. Therefore, the region with greater temperature will have lower air pressure.

Q.10. Warm air becomes lighter

a. because it expands and occupies more space.
b. because it contracts and occupies more space.
c. because it expands and occupies less space.
d. because it contracts and occupies less space.

Ans. a

Explanation: Warm air expands and occupies more space. When the same thing occupies more space, it becomes lighter.

Q.11. Convection in air is set up due to

a. the difference in temperature in different regions.
b. the same temperature in different regions.
c. the same air pressure in different regions.
d. the difference in constituents of air in different regions.

Ans. a
Explanation: When the temperature of a place is more than that of its surrounding, warm air rises up at that place. The air pressure at that place is lowered. The cold air from the surrounding areas rushes in to fill its place. This sets up convection in air.

Q.12. Warm air

a. is heavier than cold air.
b. moves from hotter place to colder place.
c. does not exert pressure on its container.
d. rises upward.

Ans. d
Explanation: As warm air is lighter than cold air, it rises upward.

Q.13. Convection in air means

a. movement of air from hotter place to colder place.
b. transfer of heat from hotter place to colder place through air.
c. movement of air from the place of higher air pressure to the lower one.
d. movement of air from the place of lower air pressure to the higher one.

Ans. c

Explanation: Warm air rises at a place. The air pressure at that place decreases. The cold air from the surrounding areas rushes in to fill its place. This movement of air from the place of higher air pressure to the lower one is called convection in air.

Q.14. The regions close to the equator is

a. colder than the rest of the earth.
b. hotter than the rest of the earth.
c. smaller than the rest of the earth.
d. larger than the rest of the earth.

Ans. b
Explanation: The regions around the equator are closer to the sun as compared to the rest of the earth. Hence, they receive maximum heat from the sun. So, they are hotter.

Q.15. Air moves from the regions in 0-30 degrees latitude belt on either side of the equator towards the

a. North Pole.
b. South Pole.
c. Equator.
d. North and South Poles.

Ans. c
Explanation: The regions close to the equator get maximum heat from the Sun. The air in these regions gets warm. The warm air rises, and the cooler air from the regions in the 0–30 degrees latitude belt on either side of the equator moves in.

Q.16. The poles of the earth are

a. hotter than the rest of the earth.
b. colder than the rest of the earth.
c. denser than the rest of the earth.
d. lighter than the rest of the earth.

Ans. b

Explanation: The Poles of the earth are farther away from the sun as compared to the rest of the earth. They receive minimum heat from the sun. Hence, they are colder.

Q.17. Air moves to the regions in the 0-60 degrees latitude from the

a. North Pole.
b. South Pole.
c. Equator.
d. North And South Poles.

Ans. d
Explanation: The Poles of the equator are colder than the regions in 0-60 degrees latitude. So, warm air at these latitudes rises up and the cold wind from the regions around the North and South Poles rushes in, to take its place.

Q.18. The direction of wind on the earth is

a. affected by the earth's rotation.
b. unaffected by the earth's rotation.
c. exactly from north to south and vice versa.
d. exactly from east to west and vice versa.

Ans. a

Explanation: The direction of the wind would have been from north to south or from south to north. But due to the rotation of the earth, there is continuous change in the direction of wind.)

Q.19. In summer, near the equator the temperature of the land is

a. lower than that of water in the oceans most of the time.
b. higher than that of water in the oceans most of the time.
c. equal to that of water in the oceans most of the time.
d. close to that of water in the oceans most of the time.

Ans. b

Explanation: Land warms up faster than the water. So, most of the time, in summer land near the Equator is warmer than water in the oceans.

Q.20. In summer, near the Equator

a. wind flows from the land towards the oceans.
b. wind flows from west to east.
c. wind flows from the oceans towards the land.
d. wind flows from east to west.

Ans. c
Explanation: In summer, near the Equator the land warms up faster and most of the time the temperature of the land is higher than that of water in the oceans. The air above the land gets heated and rises. This causes the winds to flow from the oceans towards the land.

Q.21. Monsoon winds are the winds that flows from

a. the land towards the oceans in summer.
b. the oceans towards the land in summer.
c. the land towards the oceans in winter.
d. the oceans towards the land in winter.

Ans. b
Explanation: In summer, near the equator the land warms up faster and most of the time the temperature of the land is higher than that of water in the oceans. The air over the land gets heated and rises. This causes the winds to flow from the oceans towards the land. These winds are called monsoon winds.

Q.22. Monsoon winds bring

a. rain from oceans to land.
b. rain from land to oceans.
c. dust from oceans to land.
d. dust from land to oceans.

Ans. a
Explanation: In summer near the equator, most of the time the temperature of the land is higher than that of the water in the oceans. The warm air over the land rises. This causes the monsoon winds to flow from the oceans towards the land. And these winds are laden with water vapour which cause rain.

Q.23. In winter, near the equator the temperature of the land is

a. higher than that of the oceans most of the time.
b. lower than that of the oceans most of the time.
c. equal to that of the oceans most of the time.
d. close to that of the oceans most of the time.

Ans. b
Explanation: Since water retains heat for longer time than land, most of the time the temperature of the land is lower than that of the oceans in winter.

Q.24. In winter, near the equator

a. wind flows from the land towards the oceans.
b. wind flows from west to east.
c. wind flows from the oceans towards the land.
d. winds flows from east to west.

Ans. a
Explanation: In winter, most of the time ocean water has higher temperature than that of the land. Hence, warmer air above the water raises up and colder air from the land rush towards the ocean.

Q.25. If a storm is accompanied by lightning, we should

a. take shelter under an isolated tree.
b. take shelter under an umbrella with a metallic end.
c. not sit near a window, open garages, storage sheds.
d. take shelter under metal sheds.

Ans. c

Explanation: Lightning can induce opposite charges on an isolated tree, umbrella with a metallic end, a window, open garages, storage sheds, metal sheds, etc. So, it will be attracted towards them. We should, therefore, not take shelter in such places.

Q.26. Thunderstorms usually occur in

a. cold, humid tropical areas.
b. cold, dry tropical areas.
c. hot, dry tropical areas.
d. hot, humid tropical areas.

Ans. d
Explanation: The rising temperatures produce strong upward rising winds. These winds carry water droplets upwards, where they freeze, and fall down again. The swift movement of the falling water droplets along with the rising air creates lightning and sound. Thus, thunderstorms usually occur in hot, humid tropical areas.

Q.27. When water changes its state from liquid state to vapour state,

a. heat is given out.
b. heat is absorbed.
c. heat is given out and then absorbed.
d. there is no exchange of heat between the system and the surroundings.

Ans. b
Explanation: Water requires heat when it changes from liquid to vapour state. When heat is given to it, its molecules gain energy and get converted into steam, which is in vapour state.

Q.28. When water condenses from vapour state to liquid state,

a. heat is given out.
b. heat is absorbed.
c. heat is absorbed and then given out.
d. there is no exchange of heat between the system and the surroundings.

Ans. a
Explanation: When water molecules in vapour state give out heat, they condense into liquid state due to the loss of energy.

Q.29. Cyclones are formed because of the

a. absorbance of heat in the vaporization of water.
b. emission of heat in the condensation of water.
c. absorbance and emission of heat due to inter-conversion of states of water.
d. conduction of wind current.

Ans. c
Explanation: Water takes up heat from the atmosphere to change it into vapour. When water vapour changes back to liquid form as raindrops, this heat is released to the atmosphere. This heat warms the air around, which tends to rise and causes a drop in air pressure. More air rushes to the centre of the storm. This cycle is repeated. A very low-pressure system with very high-speed winds revolving around it is formed. This is called a cyclone.

Q.30. Consequences of cyclones are:

a. they do not cause severe loss of life and property.
b. they increase the fertility of soil by bringing in natural fertilizers.
c. they reduce the fertility of soil.
d. they help in the development of a country.

Ans. c
Explanation: Cyclones are accompanied with strong winds. These strong winds push water towards the shore even if the storm is hundreds of kilometres away. They cause severe loss of life and property. They also reduce the fertility of the soil.

Q.31. A tornado

a. can have diameter as small as a metre and as large as a km, or even wider.
b. has a funnel which does not suck everything near it at the base (due to low pressure).
c. has a funnel which does not throw dust, debris and everything out near the top.
d. cannot have a diameter of the order of 10 metres.

Ans. a

Explanation: The diameter of a tornado can be as small as a metre and as large as a km, or even wider.