Class – 6 Ch – 16 – Air Around Us

Q.1 Very short answer type questions.

A. Give one word for the following.

Q.1 A thick blanket of air surrounding the Earth's surface.

Ans: Atmosphere

Q.2 Process by which plants use carbon dioxide present in the air to make their own food.

Ans: Photosynthesis

Q.3 Tiny pores on the underside of a leaf

Ans: Stomata

Q.4 Tiny holes on the body of insects for respiration

Ans: Spiracles

Q.5 The addition of substances in the environment in quantities that are harmful to living beings.

Ans: Pollution

III. Short answer type questions.

Q.1 Write the composition of air.

Ans: Air is a mixture of gases. It contains about 78% nitrogen, 21% oxygen, and 1% other gases such as carbon dioxide, argon, water vapour, and traces of noble gases.

Q.2 How do wet clothes dry?

Ans: Wet clothes dry because water present in them evaporates into water vapour due to heat from sunlight or air movement. The process of evaporation is faster in warm, dry, and windy conditions.

Q.3 What are stomata? Discuss their function.

Ans: Stomata are tiny pores present on the surface of leaves. They are surrounded by guard cells that open and close the pores.

Functions:

i) Allow exchange of gases (oxygen and carbon dioxide) during respiration and photosynthesis.

ii) Help in the loss of water vapour during transpiration.

Q.4 Why do earthworms come out on the surface during rainy season?

Ans: Earthworms breathe through their moist skin. During heavy rains, the soil gets filled with water and air spaces are reduced. To avoid suffocation, they come to the surface to get enough oxygen.

Q.5 How is the balance of oxygen and carbon dioxide maintained in nature?

Ans: The balance is maintained through photosynthesis and respiration.

i) In photosynthesis, plants take in carbon dioxide and release oxygen.

ii) In respiration, animals and humans take in oxygen and release carbon dioxide.

This continuous exchange keeps the proportion of these gases balanced in the atmosphere.

Long Question and Answers

IV. Long Answer Type Questions

Q.1 Describe an activity to demonstrate the following:

a. Presence of Air in an Empty Bottle

Ans: i) **Aim:** To show that an "empty" bottle contains air.

ii) **Materials Required:** A glass tumbler, water, an empty glass bottle.

Procedure:

1. Take the empty bottle and hold it upside down.
2. Dip the mouth of the bottle straight into a container of water without tilting.
3. Observe what happens.

* **Observation:** The water does not enter the bottle because air inside the bottle prevents it from doing so. When you tilt the bottle, bubbles escape and water enters.
* **Conclusion:** An empty bottle is not truly empty — it contains air that occupies space.

b. Presence of Oxygen in Air

A**ns:** i) **Aim:** To show that oxygen is present in air and is used up during burning.

ii) **Materials Required:** A candle, a shallow dish, water, a glass jar, match box.

Procedure:

1. Fix a candle in the middle of a shallow dish and fill the dish with some water.
2. Light the candle.
3. Cover the burning candle with an inverted glass jar.
4. Observe the flame and the water level inside the jar.

* **Observation:** The candle burns for a short time and then goes out. The water level rises inside the jar after the flame goes out.
* **Conclusion:** Oxygen in the air inside the jar is used for burning. When it is used up, the flame goes out and the water rises to occupy the space left by the used oxygen.

c. Presence of air in Soil

Ans: i) **Aim:** To show that soil contains air.

ii) **Materials Required:** A beaker, dry soil, water, stirring rod.

Procedure:

1. Take some dry soil in a beaker.
2. Pour water slowly into the beaker containing soil.
3. Stir lightly and observe bubbles coming out.

Observation: Bubbles of air escape from the soil when water is poured in.

Conclusion: The spaces between soil particles contain air.

Q.2 Discuss the mechanisms for respiration in insects, earthworm, aquatic animals, and birds.

a) Insects: They breathe through tiny holes on their body surface called spiracles. Spiracles connect to a network of tubes called tracheae which carry oxygen directly to body cells.

b) Earthworm: They breathe through their moist skin. Oxygen from the air dissolves in the moisture on their skin and diffuses into their bloodstream.

c) Aquatic Animals: Many aquatic animals, like fish, have gills. Gills extract dissolved oxygen from water and expel carbon dioxide.

d) Birds: Birds have lungs and also air sacs. Air sacs store extra air and provide continuous oxygen supply even when exhaling, enabling them to fly efficiently.

Q.3 Discuss the causes, effects, and measures to reduce air pollution.

Ans: **Causes of Air Pollution**:

i) Emissions from vehicles and factories. ii) Burning of fossil fuels.

iii) Agricultural activities like stubble burning. iv) Release of harmful gases from industries.

Effects of Air Pollution:

i) Respiratory problems like asthma and bronchitis.

ii) Global warming due to greenhouse gases.

iii) Acid rain damaging soil, water, and buildings.

iv) Harm to animals and plants.

Measures to Reduce Air Pollution:

i) Use public transport, cycle, or walk instead of private vehicles.

ii) Adopt renewable sources of energy like solar and wind.

iii) Plant more trees to absorb carbon dioxide.

iv) Enforce strict emission norms for industries and vehicles.