Section A

1. In which of the following cases evaporation of water will be the slowest?

(a) A tray of water is kept in sunlight.

(b) A kettle of water is kept on a burner.

(c) A glass of water is kept in a room.

(d) A bucket of water was kept on the rooftop.

Answer: (c) A glass of water is kept in a room.

Explanation: As the temperature rises, evaporation rises as well. The room's temperature will be lower than that of the burner, the rooftop, or sunshine. As a result, at room temperature, evaporation will be slower.

2. Transpiration is a process in which plants

(a) Receive water from the soil.

(b) Absorb water vapour from air.

(c) Prepare food from water.

(d) Release water vapour.

Answer: (d) Release water vapour.

Explanation: Transpiration is the loss of water in the form of vapour from the exposed sections of a plant (mostly leaves).

3. Clouds are

(a) Tiny drops of water floating in the air.

(b) Mixture of dust and water vapour.

(c) Particles of water vapour.

(d) Raindrops in air.

Answer: (a) Tiny drops of water floating in the air.

Explanation: Clouds occur when water vapour condenses in the air and creates tiny droplets of water that float high in the air.

4. Wells are fed by

(a) Pond water (b) Lake water (c) Rainwater (d) Groundwater

Answer: (d) Groundwater

Explanation: Some of this water is absorbed by the ground and soil, increasing the level of groundwater. This groundwater becomes the well's source of water.

5. "Catch water where it falls" is the basic idea behind

(a) Recycling of water.

(b) Making dams to store water.

(c) Rainwater harvesting.

(d) Condensation of water vapour.

Answer: (c) Rainwater harvesting.

Explanation: The objective was to gather as much water as possible and store it so that there would be no future water scarcity. To collect pure rainwater, people install tankers, containers, and pipes with filters.

6. Precipitation is the phenomenon of _____.

a) Rising of water drops

b) Falling of water drops

c) Accumulation of water drops

d) Deposition of water drops

Answer: b) Falling of water drops

7. Which of the following best describes condensation?

(i) The conversion of water into its vapour state.

(ii) The process of water changing from a liquid into a gaseous state.

(iii) The formation of clouds from tiny water droplets.

(iv) The conversion of water vapour into its liquid state.

Answer: (iv) The conversion of water vapour into its liquid state describes condensation.

8. Fill in the blanks:

(a) The process of _____ plays an important role in bringing water back to the surface of the earth.

Answer: Condensation

(b) _____ cause extensive damage to crops, domestic animals, property and human life.

Answer: Floods

(c) The amount of water vapor in the air is also known as _____.

Answer: Humidity

(d) _____ machines collect water from _____air to produce _____ water. This is done through _____ of _____ by _____ the air.

Answer: Atmospheric Water Generator (AWG) machines collect water from **humid** air to produce **drinkable** water. This is done through **condensation** of water vapour by **cooling** the air.

(e) The process of conversion of a solid into liquid state is called _____. The process of conversion of liquid into solid state is called _____.

Answer: The process of conversion of a solid into a liquid state is called melting. The process of conversion of liquid into solid state is called freezing.

(f) _____ plays a significant role in the process of bringing evaporated water back to the Earth's surface.

Answer: Condensation plays a significant role in the process of bringing evaporated water back to the Earth's surface.

(g) Evaporation causes _____ effect.

Answer: Evaporation causes a **cooling** effect.

8. Most of the water is found in _____ and _____

Answer: Most of the water is found in oceans and seas.

9. The saline water is not fit for _____, _____, and _____use.

Answer: The saline water is not fit for **domestic, agricultural**, and **industrial** use.

Section B

Reasoning Questions:

Q1. Water droplets appear on the outer surface of a glass full of cold water. Why.

Answer: Water droplets form on the outer surface of the container containing a cold substance due to Condensation. The temperature of the container is cold enough to cool down the water vapour in the surrounding air, so it turns from a gaseous to a liquid state. Therefore, drops form more steadily during warm weather than cold weather.

Q2. State for each of the following whether it is due to evaporation or condensation:

(a) Water drops appear on the outer surface of a glass containing cold water.

(b) Steam rising from wet clothes while they are ironed.

(c) Fog appearing on a cold winter morning.

(d) The blackboard dries up after wiping it.

(e) Steam rising from a hot girdle when water is sprinkled on it.

Answer:

(a) condensation

(b) evaporation

(c) condensation

(d) evaporation

(e) evaporation.

Q3. Name two processes responsible for the formation of clouds.

Ans: Evaporation and transpiration.

Q4.

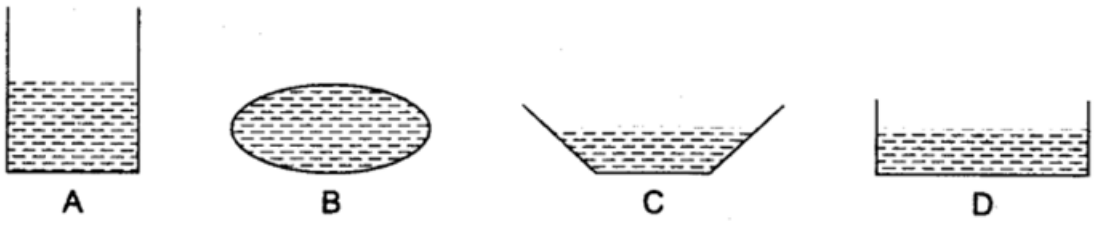


Fig. 14.9

There are 4 containers A, B, C, and D with same amount of water in each. Answer the following based on them.

(a) Name the container in which water will evaporate faster than all others.

(b) Name the container in which water will evaporate very slowly.

Give a reason for your answer.

Answer:

(a) C – The more the exposed surface area, the more will be evaporation of water.

(b) B – As it is closed, no evaporation takes place.

Q5. Clothes dry slowly on rainy days?

Answer: If the amount of water in the air is already high (more **humidity**), water evaporates slowly.

Q6. Why is the water in the earthen pot so cold?

Answer: Through evaporation. The earthen pot is a little porous, so the pot is slightly moistened. As water evaporates form the surface of the pot and the surface of the water. The reason for this is evaporation, and we know that evaporation causes cooling.

Section C

Q7. Write a short note on the water cycle.

Answer: The water cycle describes how water evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation. The water falling on land collects in rivers and lakes, soil, and porous layers of rock, and much of it flows back into the oceans, where it will once more evaporate.

Q8. What happens if it does not rain for a long period?

Answer: If there is no rain for a long period or for many years, then water is scarce in that region. This leads to drought. The lack of adequate precipitation, either rain or snow, can cause reduced soil moisture or groundwater, diminished stream flow, crop damage, and a general water shortage. The soils might dry out and plants can die when there is little or no rain.

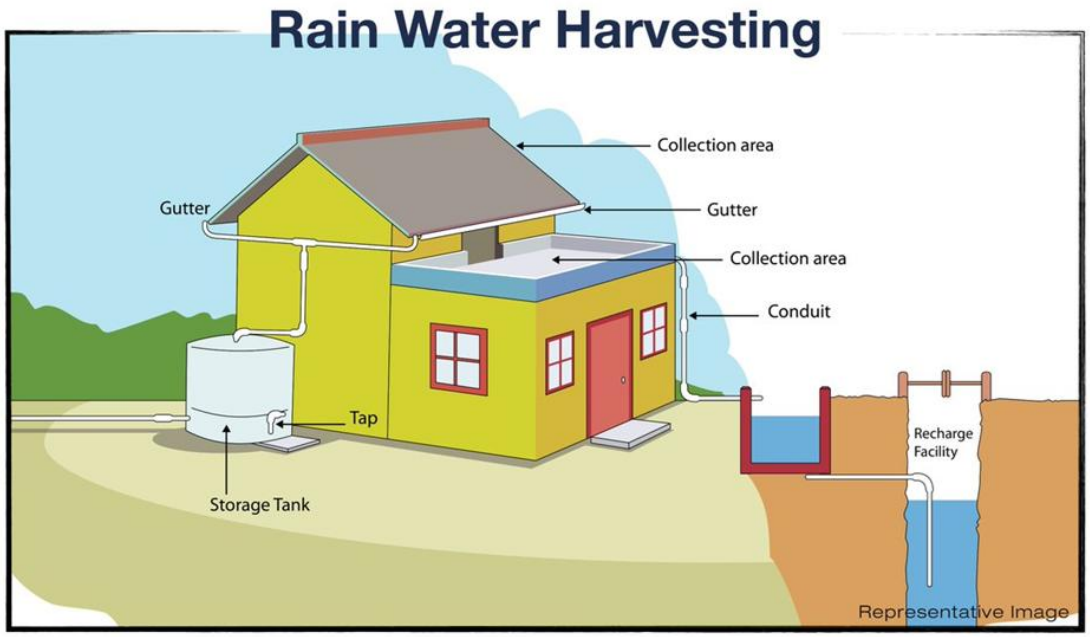
Q9. What is rainwater harvesting? Discuss rooftop rainwater harvesting in detail.

Answer: One way of increasing the availability of water is to collect rainwater and store it for later use. Collecting rainwater in this way is called rainwater harvesting. The basic idea behind rainwater harvesting is “Catch water where it falls”.

Rooftop rainwater harvesting:

1. Rooftop rainwater harvesting is a technique used for the conservation of water.

2. In this technique, the rainwater that has fallen on the roof of houses or buildings is collected in storage or underground tanks through the help of pipes.
3. This also helps us recharge the groundwater levels.



Q10 As our population grows, we will require more water for drinking, washing, and other purposes. Is this having an effect on the water table? Explain.

Answer: Yes, rising population leads to increased consumption, while decreased seepage of water into the ground leads to depletion of the water table.

Q11. How is water present in the solid state in nature?

Answer: Water exists in its solid form in nature as ice, snow, and frost.

Q12. Write factors that affect the rate of evaporation.

Answer: The rate at which water evaporates depends on several factors, including:

- **Temperature**: The higher the temperature of the water and its surroundings, the faster the evaporation rate.
- **Surface area**: The more surface area the water has, the faster it evaporates.
- **Humidity**: The higher the humidity of the air around the water, the slower the evaporation rate.
- **Wind speed**: The faster the wind speed, the faster the evaporation rate.

Q13. Write the source of fresh water on earth.

Answer: The primary source of fresh water on Earth is precipitation from the atmosphere, which falls as rain, snow, or mist and eventually collects in various forms like rivers, lakes, groundwater, and glaciers; with the majority of Earth's freshwater stored in ice caps and glaciers.

Q14. State the causes of water pollution.

Answer:

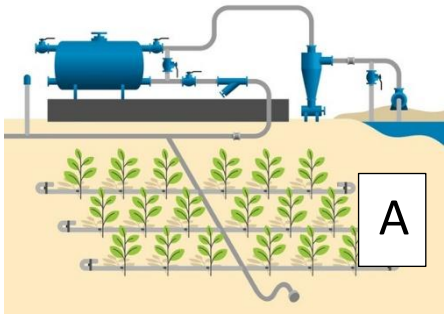
- The discharging of garbage, sewage, and liquid wastes of agricultural lands, households, and factories into the rivers and lakes.
- The dumping of litter like plastic and glass, and other solid wastes into water bodies

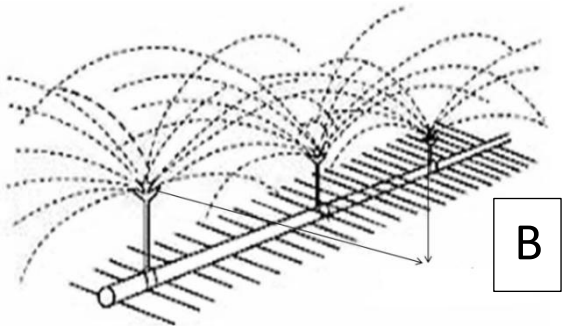
Section D [9.5 M] /

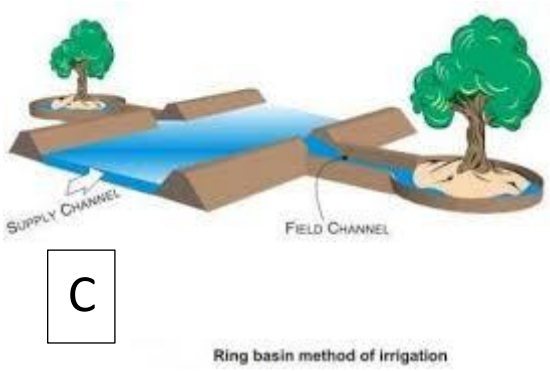
Picture study:

Q1. Label - Cloud, Lake, Ocean, River, Groundwater, Evaporation, Condensation, Rain, Snow in the diagram below

Q2. Identify the diagram below







Identify A, B, and C.

Mention the advantages of A, B, and C

Answer:

A. Drip irrigation
B. Sprinkler irrigation
C. Check dam irrigation

<u>Advantages of drip irrigation:</u>

- save water compared to traditional irrigation methods.
- can help minimize soil erosion
- prevents disease by minimizing water contact with leaves, stems, and fruit. It also reduces evaporation and improves soil quality

<u>Advantages of sprinkler irrigation:</u>

- distribute water evenly over a large area, reaching the root zones of plants
- Can be used to add fertilizers or pesticides to the irrigation water
- areas located at a higher elevation than the source can be irrigated

Advantage of check dam irrigation

- Check Dam construction improves water availability -. As and when waste/ unused water flows out of the farmland, then can be collected and reused later. The same water can be pumped back to the fields when required.
- reduces water flow velocity
- prevent soil erosion