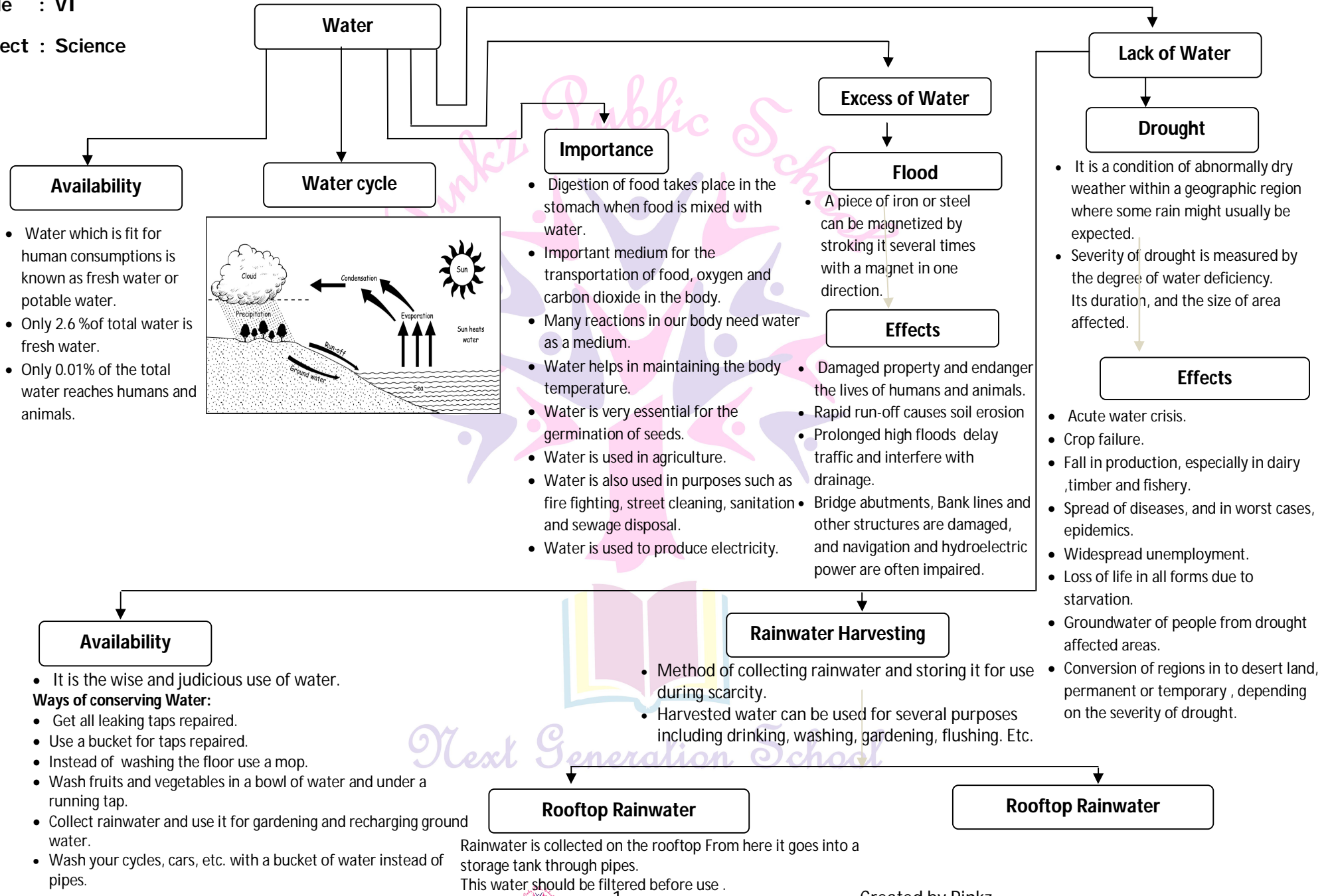


Chapter - 14 : Water

Grade : VI

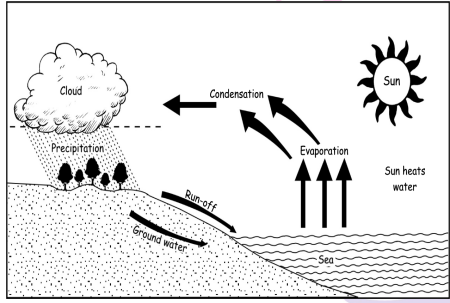
Subject : Science

BASIC CONCEPTS – A FLOW CHART



Availability

- Water which is fit for human consumptions is known as fresh water or potable water.
- Only 2.6 %of total water is fresh water.
- Only 0.01% of the total water reaches humans and animals.



Water cycle

Importance

- Digestion of food takes place in the stomach when food is mixed with water.
- Important medium for the transportation of food, oxygen and carbon dioxide in the body.
- Many reactions in our body need water as a medium.
- Water helps in maintaining the body temperature.
- Water is very essential for the germination of seeds.
- Water is used in agriculture.
- Water is also used in purposes such as fire fighting, street cleaning, sanitation and sewage disposal.
- Water is used to produce electricity.

Excess of Water

Flood

- A piece of iron or steel can be magnetized by stroking it several times with a magnet in one direction.

Effects

- Damaged property and endanger the lives of humans and animals.
- Rapid run-off causes soil erosion
- Prolonged high floods delay traffic and interfere with drainage.
- Bridge abutments, Bank lines and other structures are damaged, and navigation and hydroelectric power are often impaired.

Lack of Water

Drought

- It is a condition of abnormally dry weather within a geographic region where some rain might usually be expected.
- Severity of drought is measured by the degree of water deficiency. Its duration, and the size of area affected.

Effects

- Acute water crisis.
- Crop failure.
- Fall in production, especially in dairy ,timber and fishery.
- Spread of diseases, and in worst cases, epidemics.
- Widespread unemployment.
- Loss of life in all forms due to starvation.
- Groundwater of people from drought affected areas.
- Conversion of regions in to desert land, permanent or temporary , depending on the severity of drought.

Availability

- It is the wise and judicious use of water.

Ways of conserving Water:

- Get all leaking taps repaired.
- Use a bucket for taps repaired.
- Instead of washing the floor use a mop.
- Wash fruits and vegetables in a bowl of water and under a running tap.
- Collect rainwater and use it for gardening and recharging ground water.
- Wash your cycles, cars, etc. with a bucket of water instead of pipes.

Rainwater Harvesting

- Method of collecting rainwater and storing it for use during scarcity.
- Harvested water can be used for several purposes including drinking, washing, gardening, flushing. Etc.

Rooftop Rainwater

Rainwater is collected on the rooftop From here it goes into a storage tank through pipes. This water should be filtered before use .

Rooftop Rainwater



I. Know the Terms

- **Water** : Water is the most common and important substance for survival of life after air.
- **Transpiration**: The loss of water molecules in the form of water vapour through the holes present in the leaves (Stomata) is called transpiration.
- **Water cycle** : The cycle of processes by which water circulates between the earth's oceans, atmosphere, and land involving precipitation as rain and snow, drainage in streams and transpiration.
- **Evaporation** : The process of conversion of water into its vapour on heating.
- **Water vapour**: It is the gaseous form of water formed from liquid state during evaporation.
- **Condensation** : The process in which water vapours is allowed to cool down and change into water droplets.
- **Cloud** : Tiny droplets of water that remain floating in air.
- **Precipitation** : The process by which water vapour present in the atmosphere condenses and falls down as rain snow or hail.
- **Rain** : The water droplets that fall in the form of liquid on the surface of Earth during precipitation.
- **Snow** : The water droplets falling in the form light flakes at low temperature in the atmosphere.
- **Hail** : When precipitation occurs in the form of large frozen water pellets.
- **Dew** : Water droplets that can be seen on the surface of leaves formed due to water vapour present in air.
- **Ground water** : Water that seeps into the ground and accumulates under the ground.
- **Water conservation** : Saving water for use in future.
- **Drought** : A condition that occurs if it does not rain for a long period.
- **Rain water harvesting**: The process of collecting and storing rain water for future use.

I. Multiple choice questions

1. When we spread our wet clothes in the sun, the water :
(a) Transpires (b) Respires (c) Transports (d) Evaporates
2. Colour of water is :
(a) Sky blue (b) White (c) Green (d) Colourless
3. Evaporation of water from the soil surface is due to heat from :
(a) Sun (b) Earth (c) Moon (d) Fire
4. Drought is caused by water :
(a) Excess (b) Scarcity (c) Freezing (d) None of these
5. Flood means :
(a) Excess of water (b) Scarcity of water (c) Food and milk (d) Spilling of milk
6. Water occurs in the atmosphere in how many forms ?
(a) One (b) Two (c) Three (d) Four
7. Water harvesting is a technique of :
(a) Flooding water (b) Farming water (c) Stopping flood (d) Saving rain water
8. Clouds are formed by :
(a) Water drops (b) Air (c) Gases (d) None of the above
9. For using ground water, man uses :
(a) Canals (b) Dams (c) Tube wells (d) None of these
10. When we move up in air, the temperature becomes :
(a) Very high (b) Little high (c) Low (d) Very low
11. Observe the given figure and tell which process is taking place :



- (a) Condensation (b) Evaporation (c) Transpiration (d) None of the above

12. Which of the following activities does not involve use of water ? **[NCERT Exemplar]**
(a) Washing clothes (b) Bathing (c) Cleaning utensils (d) Drying of clothes
13. In which of the following activities will you use minimum amount of water ? **[NCERT Exemplar]**
(a) Bathing (b) Brushing teeth (c) Washing clothes (d) Mopping a room
14. The quantity of water required to produce one page of your book is : **[NCERT Exemplar]**
(a) one bucket (b) ten buckets (c) two glasses (d) few drops
15. Water in our tap comes from a : **[NCERT Exemplar]**
(a) river (b) lake (c) well (d) river, lake or well
16. In which of the following cases will evaporation of water be slowest ? **[NCERT Exemplar]**
(a) A tray of water kept in sunlight (b) A kettle of water kept on a burner
(c) A glass of water kept in a room (d) A bucket of water kept on rooftop
17. Transpiration is a process in which plants : **[NCERT Exemplar]**
(a) receive water from soil (b) absorb water vapour from air
(c) prepare food from water (d) release water vapour
18. Clouds are :
(a) tiny drops of water floating in air (b) mixture of dust and water vapour
(c) particles of water vapour (d) rain drops in air
19. Wells are fed by : **[NCERT Exemplar]**
(a) pond water (b) lake water (c) rain water (d) ground water
20. Floods cause extensive damage to : **[NCERT Exemplar]**
(a) crops (b) property and human life
(c) domestic animals (d) all of the above
21. "Catch water where it falls" is the basic idea behind : **[NCERT Exemplar]**
(a) recycling of water (b) making dams to store water
(c) rain water harvesting (d) condensation of water vapour
22. Water cycle is a :
(a) continuous process (b) drinking process
(c) non-continuous process (d) non-cyclic process
23. Plants regulate their temperature by :
(a) Transpiration (b) Respiration (c) Photosynthesis (d) Perspiration
24. Water changes to ice at :
(a) 0°C (b) 100°C (c) 102°C (d) 98°C

25. About 97% of the water on the earth is :

- (a) salt water (b) pure water (c) polluted water (d) drinking water

1. (d)	2. (d)	3. (a)	4. (b)	5. (a)	6. (c)	7. (d)	8. (a)
9. (c)	10. (d)	11. (b)	12. (d)	13. (b)	14. (c)	15. (d)	16. (c)
17. (d)	18. (a)	19. (d)	20. (d)	21. (c)	22. (a)	23. (a)	24. (a)
25. (a)							

II. Multiple choice questions

- The process of conversion of water into vapours is called:
(a) transpiration (b) evaporation (c) condensation (d) all of these
- In how many state of matter does water exist?
(a) One (b) Two (c) Three (d) Four
- Condensation is the process in which:
(a) water converts into vapours (b) water converts into ice
(c) vapours convert into water (d) all of these
- The clothes dry in the sunlight by the process of:
(a) condensation (b) evaporation (c) drought (d) transpiration
- The colour of potable water is:
(a) colourless (b) milky (c) pink coloured (d) red coloured
- The number of forms of water is
(a) One (b) Two (c) Three (d) Four
- Which of these is responsible for the formation of clouds?
(a) Conservation (b) Respiration (c) None of these (d) Transpiration
- Evaporation of water is due to the heat of:
(a) sun (b) moon (c) star (d) none.

1. (b)	2. (c)	3. (c)	4. (b)	5. (a)	6. (c)	7. (d)	8. (a)
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I. True or False

- Water is non-renewable natural resource.
- Water covers over 90% of the earth's surface.
- Water does not play any role in the germination of seeds.

4. Water changes to ice at 0°C.

5. Rain water harvesting is a technique to collect and store rain water.

1. False	2. False	3. False	4. True	5. True
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II. True or False

1. Which of the following statements are true and which ones are false ?

(a) Water vapour is present air only during the monsoon.

(b) Water evaporates into air from oceans, rivers and lakes but not from the tank.

(c) The process of water, Changing into water vapour is called evaporation.

(d) The evaporation of water takes place only in the sunlight.

(e) Water vapour condenses from tiny droplets of water in the upper layers of air where it is cooled.

(a) False	(b) False	(c) True	(d) False	(e) True
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III. True or False

1. Water is a universal solvent.

2. Water is found in four state.

3. About one third of the earth is covered with water.

4. Sea water is saline.

5. Water vapour enters the air due to the process of evaporation.

6. The circulation of water in the environment is known as water cycle.

7. We should conserve water for future.

8. Sunlight is essential to convert water into its vapour.

9. The circulation of water between ocean and land is known as water cycle.

10. Pucca drains from the roadside allow water to go into the ground.

11. Most of the rainfall occurs during the monsoon season.

1. True	2. False	3. False	4. true	5. True	6. True
7. True	8. False	9. True	10. False	11. True	

I. Fill in the blanks.

1. The process of changing water into its vapour is called _____.
2. The process of changing water vapour into water is called _____.
3. No rainfall for a year or more may lead to _____ in that region.
4. Excessive rains may cause _____.

1. evaporation	2. condensation	3. drought	4. floods
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II. Fill in the blanks.

1. Drought is a natural _____ caused due to rains over a long time.
2. _____ is another _____ calamity caused by _____ rains in short time.
3. _____ and _____ are two forms of precipitation.
4. For generation of _____ and _____ electricity water is required in large quantities.
5. Flood causes excessive damage to _____ and _____.
6. Water is colourless, odourless and _____.
7. _____ is a method to collect rain water on the rooftops of the buildings.
8. Water evaporates from different water bodies due to the _____ of the _____.
9. The water droplets collect together to form _____.
10. _____ is a pure form of water.

1. calamity, less/no	2. Flood, natural, excess	3. Snow, rain	4. thermal, hydro
5. crops, domestic life	6. tasteless	7. Rain water harvesting	8. heat, sun
9. clouds	10. Rain water		



III. Fill in the blanks.

1. Water is _____ for life.
2. The circulation of water between ocean and land is known as _____.
3. In our country, most of the rainfall occurs during the _____ season.
4. Most of water becomes available to us as _____.
5. Lack of rain causes _____.
6. Floods cause extensive damage to _____, _____, _____ and _____.
7. Dew is found on leaves of grass on _____.
8. Water cycle helps in regulating the _____ on the earth.
9. Tiny drops of water are called _____.
10. Water vapours enter the air through the process of _____ and _____.
11. _____ is a source for many lakes and handpumps.
12. _____ is the cause of flood.

1. essential	2. water cycle	3. monsoon
4. ground water	5. drought	6. crops, domestic animals, property, human life
7. winter morning	8. weather	9. droplets
10. evaporation, transpiration	11. ground water	12. Heavy rainfall

I. Match the following

(I) Column A	Column B
(a) Clouds	(i) Water gets scarce recharge
(b) Floods	(ii) Ground water
(c) Drought	(iii) Precipitation
(d) Water harvesting	(iv) Water cycle
(e) Evaporation, clouds, precipitation	(v) Soil erosion

a. iii	b. v	c. i	d. ii	e. iv
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II. Match the following

(I) Column A	Column B
i. Rainfall	a. Hand pump
ii. Water cycle	b. Winter morning
iii. Ground water	c. Monsoon season
iv. Dew on leaves of grass	d. Water released by plant
v. Transpiration	e. Circulation of water

a. iii	b. v	c. i	d. ii	e. iv
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Quiz Time

1. Why is water essential for life?
2. What is evaporation?
3. What is transpiration?
4. What is condensation?
5. How is ground water useful to us?
6. Out of evaporation, transpiration and condensation, which process brings water back to the surface of earth?
7. What are two harms of flowing rain water?
8. What will happen, if there is no rain in a region for a year or more while evaporation and transpiration processes are going on?
9. Why should we use water carefully?
10. Which method would you like to adopt to increase ground water level?

1. All living things need water for proper working of their body.
We use water for drinking, cooking, cleaning, washing, etc.
2. Loss of water in the form of vapour into the atmosphere is called evaporation.
3. The process of loss of water in the form of water vapour from the different parts of plants (essentially leaves) is called transpiration.
4. The process of conversion of water vapour into liquid form of water is called condensation.

5. Ground water is the water source for wells, hand pumps and tube wells from which we draw water.
 6. Condensation.
 7. Flowing rain water
 - (a) takes the top fertile layer of soil away with it.
 - (b) This reduces seepage of rainwater into the ground.
 8. It will result in drought in that region.
 9. The amount of usable water on earth is limited so it needs to be used carefully.
 10. Rain water harvesting.
-

NCERT Corner

Intext Questions

1. Do people living in different regions of a country get the same amount of water ?

People living in different regions of a country do not get the same amount of water because availability of water depends on the following factors :

- (i) Annual rain fall
- (ii) Distance from source of water, i.e., river, pond etc.

2. People living in which region do not get adequate amount of water ? How do they manage ?

People living in desert region do not get adequate amount of water due to scarcity of water in that region. They manage to live with a small amount of water by adopting water conservation techniques.

3. How much water is required to produce each page of a book ?

About two glasses of water.

4. What do we notice on leaves or metal surfaces like iron grills and gates on a cold morning ?

We notice tiny water droplets, i.e., dew on leaves or metal surfaces like iron grills and gates on a cold morning.

5. What is the process taking place in the above question ? Why does it not take place in summer ?

In above question, the process taking place is condensation. In such process, water vapour is allowed to cool which converts vapour to liquid form due to low temperature.

It does not take place In summer due to high temperature which does not allow water vapour to cool down.

6. Does condensation take place near the ground on winter mornings ?

Yes, it appears in the form of fog.

7. What happens if it rains heavily?

It may lead to flood.

8. What happens if it do not rain for a long period ?

It may lead to drought.

Textbook Questions

1. 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) Blackboard dries up after its wiped.
- (e) Steam rising from a hot girder when water is sprinkled on it.

(a) Condensation	(b) Evaporation	(c) Condensation
(d) Evaporation	(e) Evaporation	

2. Suppose you want to dry your school uniform quickly. Would spreading It near an angithi or a heater help ? If yes, how

The rate of evaporation tin lateen when we spread school uniform near an angithi or heater and it would dry quickly.

3. Take out a cooled bottle of water from refrigerator and keep it on a table. Alto minor time you notice a puddle of water around it, why ?

The cold surface of tooled hotly cools the air around it due to which it water vapours of the air condense on the surface of bottle and we notice a puddle of water around it.



4. To clean their spectacles, people often breathe out on glasses to make them wet.

Explain why the glasses become wet.

The moist air coming out from mouth condenses on glasses to make them wet.

5. How are clouds formed ?

Condensation plays an important role in the formation of clouds. As water vapour along with air goes higher from the surface of the earth, it gets cooler. At sufficient height, the air becomes so cool that the water vapour present in it condenses to form tiny drops of water called droplets. It is these tiny droplets that remain floating in air and appear to us as clouds.

6. When does a drought occur ?

Drought occurs when rain has not fallen for a long period over an area. It causes dryness and non-availability of water to plants and animals.

I. Very Short Answer Type Questions

1. Write the chemical formula of water.

H₂O.

2. Why is sea water salty or saline.

It has many salts dissolved in it, that's why it is saline.

3. Which property of water is responsible to maintain the body temperature ?

Evaporation.

4. How can we get drinking water from the sea ?

By desalination of the water from sea.

5. Which form of water is the most dense : solid, liquid or vapour ?

Liquid form of water has the highest density.

6. How does water cycle help in maintaining global climate ?

Water cycle plays an important role in maintaining the global climate as :

- (i) Water cycle maintains the temperature on land.
- (ii) Water cycle regulates the ground water level.

7. Why is sea water not fit for drinking ?

Sea water contains large amount of salt in dissolved state. Hence, it is not fit for drinking.

7. What is the cause of drought ?

When rainfall does not happen for more than a year in a region, then that region faces a deficiency of water, which is known as drought.

8. What is fog ?

Fog is a form of condensed water vapours on dust particles in air and it occurs near the surface of the earth during winter season.

9. Define transpiration.

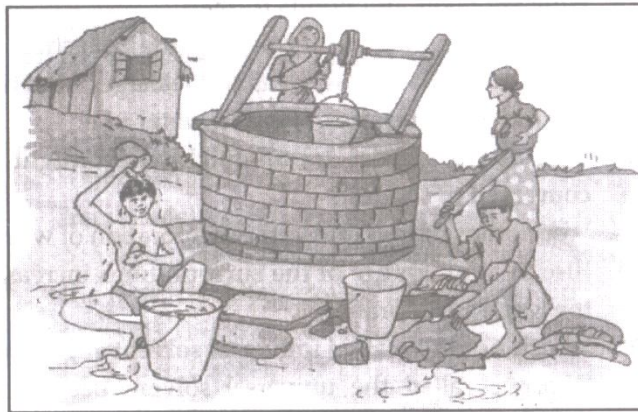
Plants lose their excess water through their pores of leaves, in the vapour form. This process is called transpiration.

10. Name the two sources of natural water.

The two sources of natural water are :

- (i) Rivers
- (ii) Lakes

11. Look at Fig.



Write down activities shown in this figure in which water is being used.

[NCERT Exemplar]

The activities, in which water is being used are given below :

- (i) Bathing
- (ii) Washing clothes.

12. Write any two activities which require more than a bucket of water.

- (i) Washing clothes
- (ii) Irrigation.

13. Write any two activities which require less than one bucket of water.

[NCERT exemplar]

- (i) Brushing teeth
- (ii) Hand washing

II. Very Short Answer Type Questions.

1. Write the sources of water on the earth.

Sources of water on the earth are: Seas, Oceans, Rivers, Springs, Tubewells, etc.

2. In which forms, water exists on the earth?

Water exists on the earth in all three physical forms: ice, water and water vapour.

3. How are the clouds formed?

Clouds are formed by the condensation of water vapour at high altitude.

4. What is meant by the conservation of water?

Careful, economical and wise use of water and avoiding the wastage of water is called conservation of water.

5. What is condensation?

The process of conversion of water vapours into liquid form of water is called condensation. It is reverse process of evaporation.

6. Name the three states of water.

1. Solid state 2. Liquid state 3. Gaseous state

7. What process can be used for desalination of sea water?

Reverse osmosis.

8. What is saline water?

A sample of water that contains more than 2% dissolved salt is known as saline water.

III. Very Short Answer Type Questions.

1. Why is water called a universal solvent?

Water can dissolve a large amount of substances in it, therefore it is called a universal solvent.

2. What is water conservation?

Water conservation is the wise and judicious use of water.

3. Define water cycle.

The cycle of the change of water to water vapour and back to water in nature is known as water cycle.

4. What is surface water.

The water present on the surface of earth, like in seas, rivers, etc. is called surface water.

5. Why is the water table going down in big cities?

Overuse of groundwater is the reason for decrease in water table.

I. Short Answer Type Questions.

1. Explain the formation of rain.

Water from the ocean and surface of earth goes into air as vapour through evaporation and transpiration where it cools down and forms tiny water droplets through condensation. These then turn into clouds and returns as rain.

2 Mention three ways by which water evaporates.

Water evaporates from sea, lakes and other water surfaces. Water also evaporates from wet lands, clothes, etc. Water also evaporates from plants through transpiration.

3. In arctic region, when ice is formed in oceans, how do aquatic animals survive there ?

Only surface water freezes as ice, but below the frozen surface, temperature does not fall below 4°C. This temperature is optimum for the survival of aquatic animals in arctic region.

4. Is oxygen soluble in water ? How is this important ?

Yes, oxygen is soluble in water. This is the source of oxygen supply for aquatic habitats.

5. How does hail occur during precipitation ?

If water reaches earth in the frozen form, it is called hail.

6. Why is water essential for plants ?

Water is the medium by which plant sucks all necessary minerals from soil, takes food to various parts and absorbs oxygen. Water is also necessary for photosynthesis.

7. How is marine life dependent on oceans ?

For marine life, ocean is most important and vital. It provides them habitats and it is the source of oxygen. Without oxygen they won't be able to breathe, move and will die.

8. How do fish and aquatic plants survive in water ?

Oxygen is slightly soluble in water. Fish and aquatic plants need oxygen to survive and they inhale this dissolved oxygen for their survival.

9. How are lakes and ponds formed ?

Lakes and ponds are formed by the collection of rain water in low lying areas and leakages from the ground water reserves also add water to it.

10. Why do wet clothes dry up quickly in sunlight as compared to shades ?

Wet clothes dry up due to the evaporation of water. Rise in temperature of the surroundings increases the rate of evaporation.

11. Which liquid is called universal solvent and why ?

Water is called the universal solvent because it dissolves most of the salts and substances in it.

12. Why is water used as coolant in the radiator of engines ?

Engines release large amount of heat. This heat gets consumed in the conversion of water (present in radiator) into water vapours, therefore engine parts do not heat up.

13. How can we conserve water ?

We can conserve water by following ways :

- (i) Do not waste water and repair all the leaking water taps.
- (ii) Do not use drinking water in garden or in cleaning.
- (iii) Do not throw any waste in ponds or rivers to prevent their pollution.

14. How are clouds formed ?

The water vapours that go into air, rise up along with air. As the air moves up, water vapours get cooler and cooler. At sufficient heights, air becomes so cool that the water vapours present in it condense into tiny droplets of water. When these water droplets come closer they combine to form slightly bigger droplets. In this way, their size becomes larger. Once the size of these droplets becomes large, they collectively appear to us as clouds.

15. Write a short note on the water cycle.

Water from the oceans and surface of the earth goes into air as vapours and returns as rain, hail or snow and finally goes back to the oceans. The circulation of water in this manner is known as water cycle. The circulation of water between ocean and land is a continuous process. It maintains the supply of water on land.

16. State whether the phenomenon is due to evaporation or condensation :

- (i) Water drops appear on the outer surface of a glass containing cold water.
- (ii) Blackboard dries up after getting wiped it.
- (iii) Fog appearing on a cold winter morning.

(iv) Steam arising from wet clothes while they are ironed.

(i) Condensation

(ii) Evaporation

(iii) Condensation

(iv) Evaporation

17. Why do wet clothes placed on a clothesline get dry after some time ? Explain.

[NCERT Exemplar]

Wet clothes placed on a clothesline get dry after some time due to evaporation. In this process, water present in wet clothes is converted into water vapour which is released into atmosphere.

18. Water kept in sunlight gets heat from sun and is evaporated. But how does water kept under the shade of a tree also get evaporated ? Explain [NCERT Exemplar]

Moving air gets heated in the presence of sunlight. This warm air provides heat to water for evaporation, when kept under the shade of a tree .

19. How do the areas covered with concrete affect the availability of ground water ?

[NCERT Exemplar]

The presence of concrete reduces the seepage of rain water into the ground which lowers the water table.

20. Why is there a need for conserving water ? Give two reasons. [NCERT Exemplar]

There is a need for conserving water due to following two reasons:

(i) To meet the demand of water due to increase in population.

(ii) Recharging of ground water for getting fresh water.

21. Fill in the blanks by selecting words from the following list : snow, rain, clouds, vapour, evaporation, transpiration.

Water, as _____ goes into atmosphere by the processes of _____ and _____ and forms _____ which on condensation fall in the form of _____ and _____ [NCERT Exemplar]

Water, as vapour goes into atmosphere by the processes of evaporation and transpiration and forms clouds, which on condensation fall in the form of rain and snow.

II. Short Answer Type Questions.

1. Mention two main functions of water for living organisms.

Two main functions of water for living organisms are:

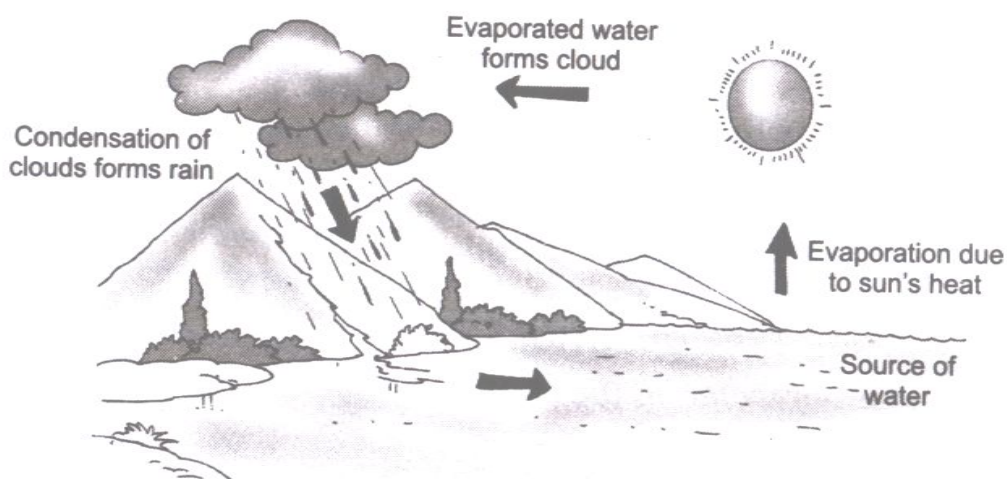
1. Water is essential for the germination of seeds, growth of plants photosynthesis.
2. Water is used for the transportation of people and goods.

2. Why is ocean water not suitable for domestic use?

Sea and ocean water contains large amounts of various salts. It is due to these salts, the ocean water is salty and cannot be used for drinking, washing and for irrigation purposes.

3. Why does the water split on the floor disappear after some time?

Due to evaporation the water split is changed into water vapour. So it disappears after some time.



4. How does heavy rain affect us? Heavy rains may cause:

1. A rise of water level in dams, rivers, lakes, etc.
2. Water logging and floods.
3. Floods cause damage to property, crops and animals.

5. How does the failure of rainfall affect people on the earth?

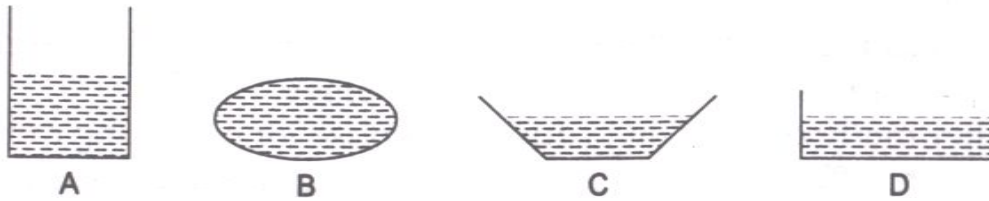
The failure of rainfall can cause the following:

1. The soil becomes dry.
2. Water level in rivers, lakes, dams, etc. may fall. Ponds and canals may even dry up.
3. The ground water level falls.

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

Evaporation and transpiration.

7.



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 reason for your.

answer.

(a) C - More is the exposed surface area, more will be evaporation of water.

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

8. During winters why do we see more fog in close areas where there are lots of trees?

Due to lots of trees, air at that place contains much more water vapour during winters. These vapour condense on dust or smoke particles forming thick fog.

9. Explain how floods cause extensive damage to human life and property?

(i) It leads to scarcity of food and fodder for humans and animals respectively.

(ii) It leads to malnutrition in humans and animals.

(iii) It results in drying up of the crops and vegetation.

10. What are the two rain water harvesting techniques?

The two techniques of rain water harvesting are:

(i) Roof top rain water harvesting.

(ii) Allowing water to go into ground directly through roadside drains.

11. Why should we use ground water judiciously?

If large quantity of ground water is taken out for various purposes, the water level goes down. There will be lack of water in a few decades, if we continuously use water carelessly. So we should use ground water very carefully.

12. Does evaporation take place in shade also? Give an experiment to support your answer.

Yes evaporation takes place in shade also. Keep a plate in shade. Put some water in it. We note that water disappears slowly from the plate. The water evaporates though very slowly from the plate because of atmospheric heat.

I. Long Answer Type Questions.

1. State different uses of water.

Water is used :

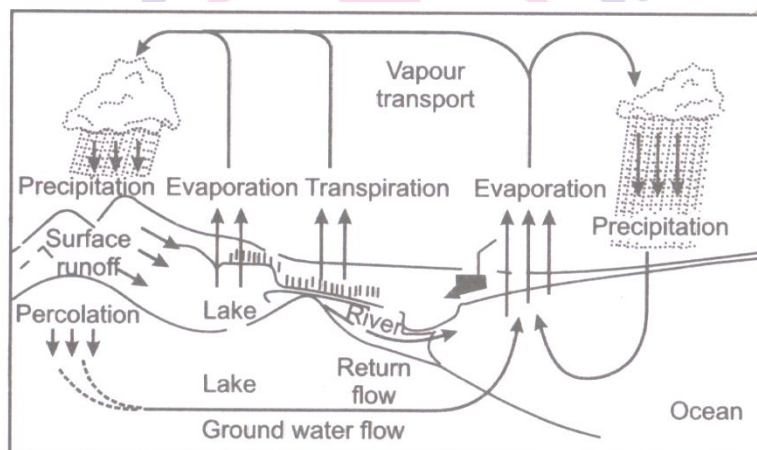
- (i) for drinking and cooking
- (ii) for bathing and cleaning.
- (iii) in agriculture, to produce food.
- (iv) in Industries, to perform different activities.
- (v) for generating electricity.

2. Most of the water that falls on the land as rain and snow, sooner or later goes back to a sea or an ocean. Explain how it happens. [NCERT Exemplar]

Snow on the mountains melts into water. This water flows down the mountains in the form of rivers and streams. Some water that falls on land as rain also flows into rivers and streams. Most of the rivers cover long distances on land after passing through various regions and ultimately reach into a sea or an ocean.

3. Draw a diagram to show how sea water reaches a lake or pond. [NCERT Exemplar]

Sea water reaches a lake or pond through water cycle. It is shown as below :

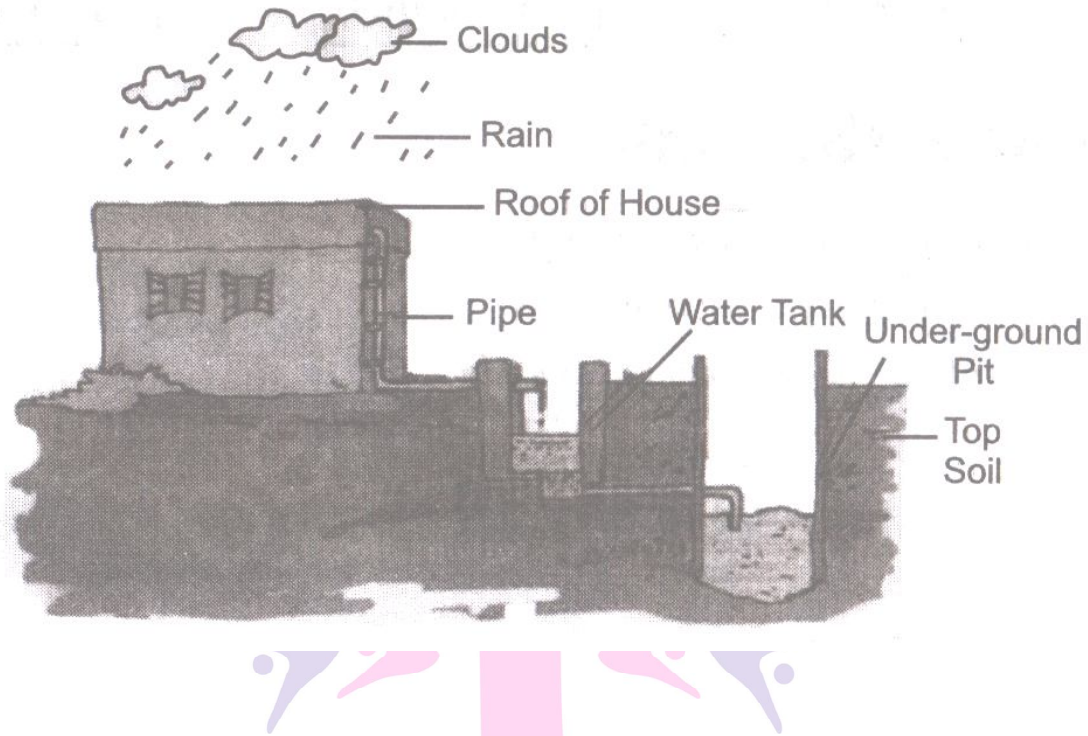


4. Dissolve two spoons of common salt in half a cup of water. Now if you want of get the salt back, what will you do ? [NCERT Exemplar]

We get salt back from the salt solution by means of evaporation. When salt solution is heated by keeping it in the sun in a plate for few hours, the water will be evaporated leaving behind the salt.

5. Explain the process of rooftop rain water harvesting with the help of a suitable diagram. [NCERT Exemplar]

In this process, the rain water is collected from the rooftop to a storage tank, through pipes. This water may contain soil from the roof and need filtering before it is used. Instead of collecting rain water in the tank, the pipes can go directly into a pit in the ground. This then seeps into the soil to recharge the ground water.



II. Long Answer Type Questions.

1. What is meant by conservation of water? Suggest three methods to conserve water.

Careful and economical use of water and avoiding its wastage is called conservation of water.

Suggestions for conserving water:

1. Use only the required quantity of water.
2. Trees and forests help in causing rainfall. So to conserve water, we should plant more and more trees.
3. By collecting rainwater in tanks, ponds or by constructing check dams.

2. What is rainwater harvesting? Describe the method of rainwater harvesting.

Rainwater harvesting is the collection of rainwater and storing for future use. In this system rainwater is collected from the rooftops by means of pipes into storage tank for later use.

Methods of Rainwater Harvesting:

1. Rooftop rainwater harvesting: In this system, the rainwater from the rooftop is collected in a storage tank, through pipes.
 2. Another method, a big pit is dug near house for collecting rainwater. This pit is filled with different layers of bricks, coarse gravels and sand or granite pieces.
-

I. High Order Thinking Skills (HOTS) Questions.

1. Why do some water pipes burst in winter ?

Some water pipes burst in winters because during winter, cold develops enormous pressure in the pipes and due to this high pressure, water pipes burst.

2. Is cutting of trees responsible for droughts and floods ?

Yes, cutting of trees are responsible for droughts and floods. Cutting of trees disrupts the natural water cycle. Trees are natural water tanks. They absorb water during rain. When we cut trees, water can't be absorbed, so it has to go where gravity takes it, which causes flood. Deforestation and soil erosion would dry up the place where it happens, since water isn't absorbed. This causes drought.

II. High Order Thinking Skills (HOTS) Questions.

1. Are there regions where people do not get adequate amount of water? How do they manage?

Hot and dry regions like Rajasthan do not get adequate amount of water. They have to travel long distance for collecting drinking water.

Value Based Question

1. Water is one of our most precious commodities and no life can survive without it. It has been predicted that water scarcity will become the subject of "Wars" in the near future. Write any two ways in which water is getting polluted. Write any two measures to stop water pollution at your level.

Water is getting polluted

- i. By industrial waste.
- ii. By human activities.

Measures to stop water pollution:

- i. We should not throw waste materials and garbage into water.
- ii. We should sensitize people about harmful effects of water pollution.

Associated Values:

We should discourage any activity in our life that may cause water pollution.

Skill Based Questions.

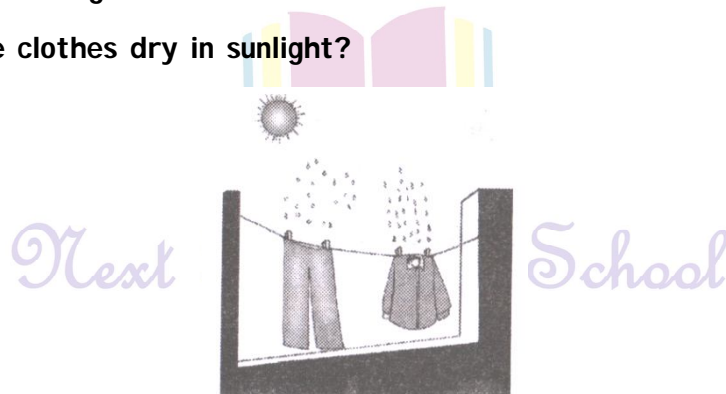
1. Observe the following figure and tell what does it show.



This figure shows that the major part of the earth is covered by the water.

2. Observe the following figure and give the answer of the following questions.

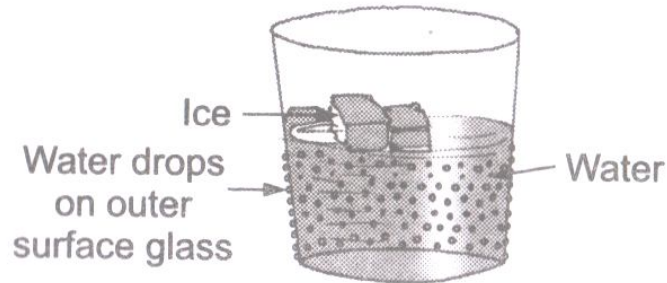
- i. What does this figure show?
- ii. How do the clothes dry in sunlight?



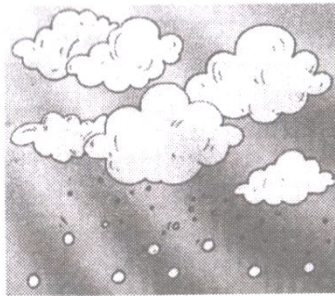
- i. This figure shows the drying of clothes in sunlight.
- ii. In the sunlight the rate of evaporation of water is increased due to which the clothes are dried very soon in the sunlight.

3. Draw a diagram to show drops of water on the outer surface of the glass containing water and enough ice and explain why do these drops form?

The air contains water vapour. When this water vapour comes in the contact with the cool surface of glass which contains very cold water then the condensation of vapour takes place. It is because the drops of water are formed on the surface of glass.



4. Draw a diagram to show the clouds in nature.

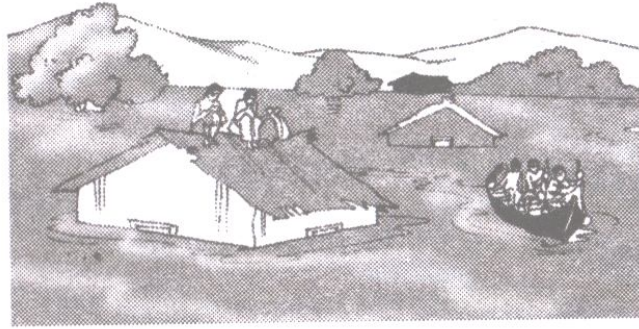


5. Draw a diagram to show.

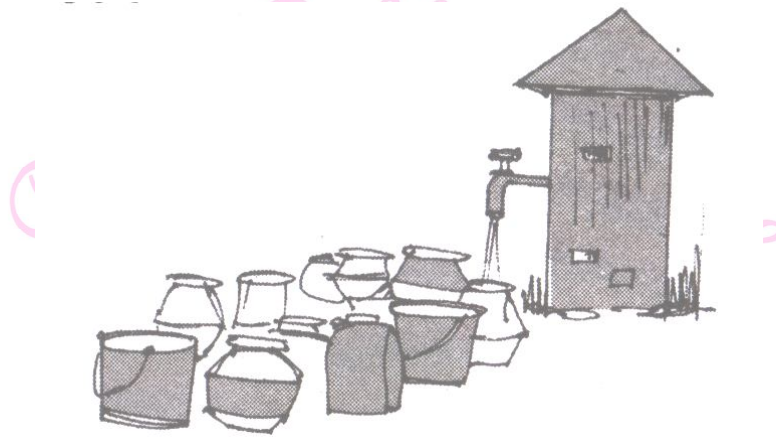
- i. A scene after heavy rains.
- ii. A scene of a flooded area.
- i. A scene after heavy rain.



ii. A scene of a flooded area.



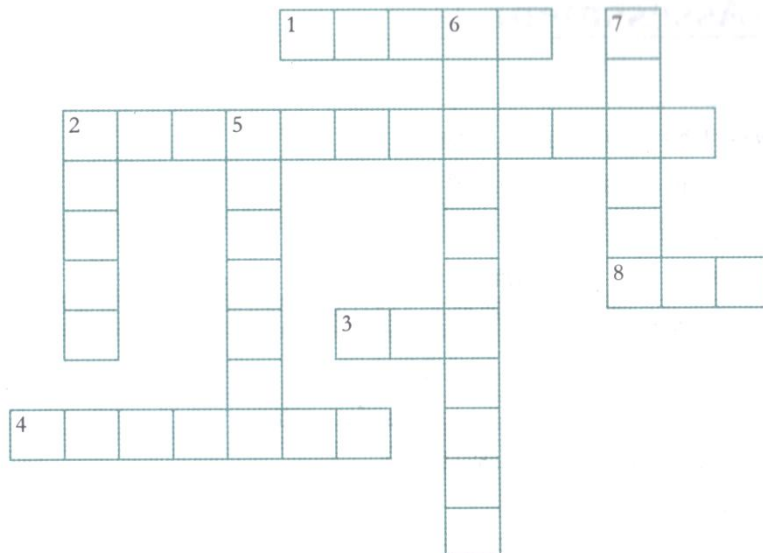
6. Observe the following figure and tell what does it show?



This figure shows a queue for collecting water where there is shortage of drinking water.

Cross word Puzzle

1.



Across

1. A universal solvent
2. The change of water vapour to water
3. A salty water body
4. Life in water
8. The heat of this heavenly body results in evaporation.

Down

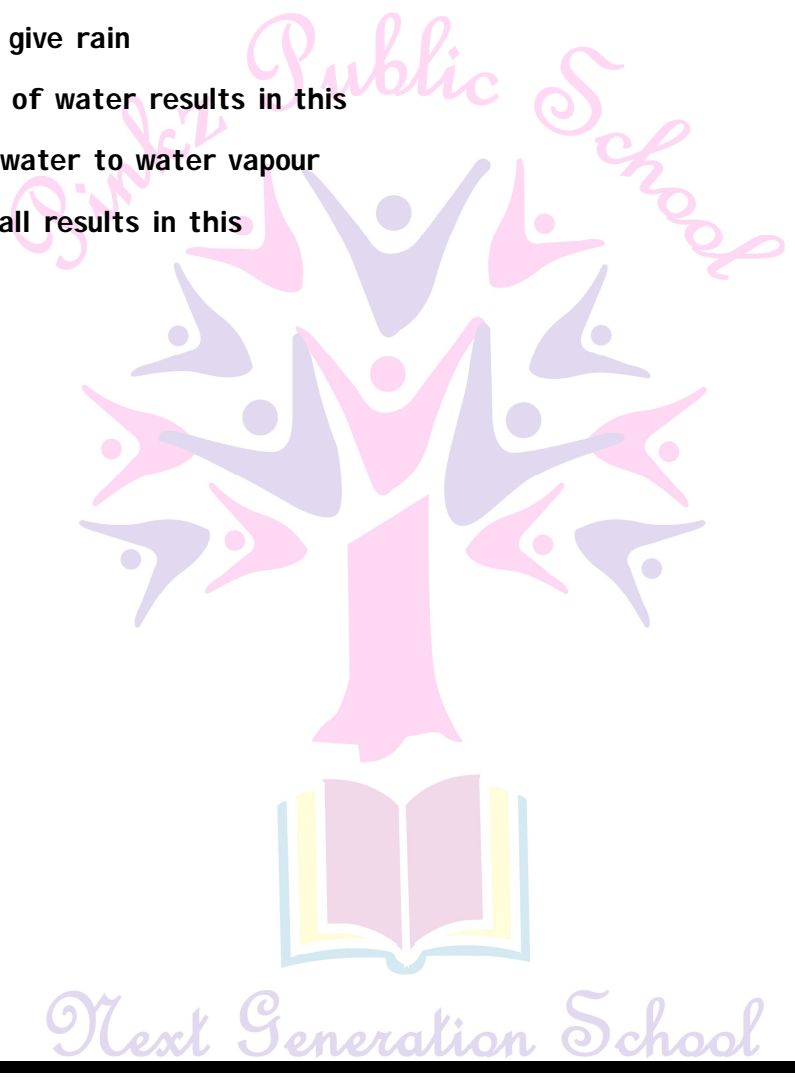
2. These burst to give rain
5. Acute shortage of water results in this
6. The change of water to water vapour
7. Excessive rainfall results in this

Across

1. water
2. condensation
3. sea
4. aquatic
8. sun

Down

2. cloud
5. drought
6. evaporation
7. floods



Know the Links

- <https://en.m.wikipedia.org>
- <https://www.ducksters.com>
- <https://www.chem.purdue.edu>