

Properties of Natural Resources

EXERCISE [PAGE 25]

Exercise | Q 1.1 | Page 25

Fill in the blanks with the appropriate term.

The capacity of air to hold moisture depends upon the of the air.

1. Temperature

- 2. volume
- 3. mass
- 4. density
- 5. humidity
- 6. acidic
- 7. weight
- 8. neutral
- 9. shape

Solution: The capacity of air to hold moisture depends upon the temperature of the air.

Exercise | Q 1.2 | Page 25

Fill in the blanks with the appropriate term.

(Temperature, volume, mass, density, humidity, acidic, weight, neutral, shape.)

Water does not have a but has definite and

Solution: Water does not have a shape but has definite mass and volume.

Exercise | Q 1.3 | Page 25

Fill in the blanks with the appropriate term.

While freezing, the of water is lowered.

- 1. Temperature
- 2. volume
- 3. mass
- 4. density**
- 5. humidity

6. acidic
7. weight
8. neutral
9. shape

Solution: While freezing, the density of water is lowered.

Exercise | Q 1.4 | Page 25

Fill in the blanks with the appropriate term.

..... soil has pH 7.

1. Temperature
2. volume
3. mass
4. density
5. humidity
6. acidic
7. weight
- 8. neutral**
9. shape

Solution: Neutral soil has pH 7.

Exercise | Q 2.1 | Page 25

Why is it said that Air is a homogeneous mixture of various gases.

Solution: Air is a homogeneous mixture of gases as it is primarily made up of nitrogen and oxygen. Its elements are not readily separated or distinguished from one another.

Exercise | Q 2.2 | Page 25

Why is it said that Water is a universal solvent.

Solution: Water is a very good solvent as it can dissolve almost every substance in it, therefore water is known as the “universal solvent”.

Exercise | Q 2.3 | Page 25

Why is it said that There is no alternative to water for cleaning purposes.

Solution: There is no alternative to water for cleaning purposes because it dissolves everything that is added to it. The reason why it is called the universal solvent. The water dissolves all the dirt present in our clothes, the reason why we soak our clothes in detergent and water prior to washing. Also, water has a neutral pH which means it does not harm the object which has to be cleaned and also does not affect the skin.

Exercise | Q 3.1 | Page 25

What will happen if the amount of water vapour in the air increases.

Solution: The amount of water vapor in atmosphere determines the level of humidity. As the amount of water vapor in the atmosphere increases so does the level of humidity. Higher humidity levels result in excessive sweating and this sweat does not dry quickly leaving us feeling hot and sticky.

Exercise | Q 3.2 | Page 25

What will happen only one crop is grown repeatedly

Solution: If only one crop is grown repeatedly in the soil, it loses its fertility and gets devoid of nutrients. For this reason crop rotation is an important procedure, so that the fertility of the soil is retained and there is no loss of nutrients. For example, after cultivation of wheat, the fertility of soil decreases and thus leguminous crops like peanut, moong etc. are cultivated after its harvest. These leguminous crops restore the fertility of soil.

Exercise | Q 4 | Page 25

With whom should I pair up?

Group A		Group B	
1	Air	a	Excretion
2	Water	b	Scattering of light
3	Soil	c	Plasticity

Solution:

Group A		Group B	
1	Air	b	Scattering of light
2	Water	a	Excretion

3	Soil	c	Plasticity
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Exercise | Q 5.1 | Page 25

State whether the following statement is true or false.

Sandy soil has low capacity for holding water.

1. True
2. False

Solution: False

Exercise | Q 5.2 | Page 25

State whether the following statement is true or false.

Sea water is a bad conductor of electricity.

1. True
2. False

Solution: False

Exercise | Q 5.3 | Page 25

State whether the following statement is true or false.

The substance in which a solute dissolves is called a solvent.

1. True
2. False

Solution: True

Exercise | Q 5.4 | Page 25

State whether the following statement is true or false.

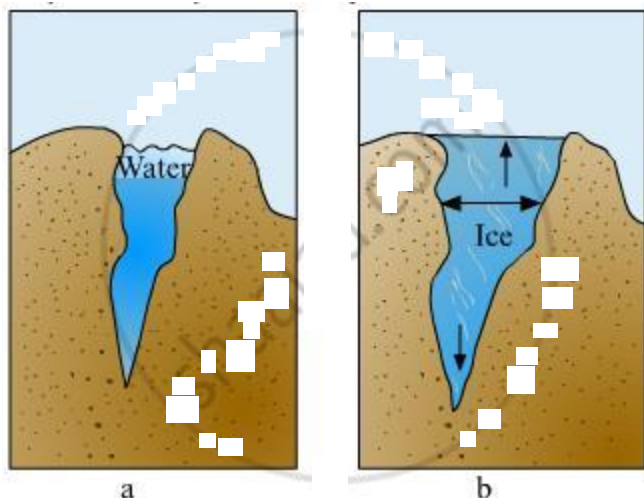
The pressure exerted by air is called atmospheric pressure.

1. True
2. False

Solution: True

Exercise | Q 6 | Page 25

Explain the picture in your own words.



Solution: Image 'a' represents a crevice or crack which is filled with water whereas image 'b' represents a crevice which has ice. It is evident from both the images that in image 'b', the width of the crevice increases as the water in the crevice freezes. This is one of the properties of water due to which it expands upon freezing. This expansion in water after freezing results in the widening of the crack in image 'b'.

Exercise | Q 7.1 | Page 25

How is light scattered by the air?

Solution: Scattering is the phenomenon of change in direction of light rays when they travel through Earth's atmosphere. Air is a mixture of gases, smoke, dust and very fine particles. As the rays of light fall on these particles, these rays are spread/scattered in all directions. It is a natural phenomenon which is observed on our daily basis.

Exercise | Q 7.2 | Page 25

Explain the various properties of water.

Solution:

- Water is a colourless, tasteless, and transparent liquid. It also has no smell.
- Boiling point of pure water is 100°C at 760 mm of Hg pressure. However, boiling point of water increases due to increase in pressure and presence of dissolved impurities.

- Pure water freezes at 0°C at 760 mm of Hg pressure. However, freezing point of water decreases due to increase in pressure and presence of dissolved impurities.
- The state of water changes on heating or cooling. On heating, the state of water changes from liquid state to gaseous state (vapour). Similarly, on cooling, the state of water changes from liquid state to solid state (ice).
- Water is neither acidic nor basic. It is neutral.
- Water is a bad conductor of heat and electricity.
- Water is an universal solvent as it can dissolve many substances in it.

Exercise | Q 7.3 | Page 25

Why is the density of seawater more than that of rain water?

Solution: Sea water has more density than rain water because it contains salt ions.

These salt ions make the seawater heavier, which means the mass of the water increases due to the presence of salt ions. From the relation, density= mass/volume, we can say that as the mass of an object increases, its density also increases simultaneously.

Exercise | Q 7.4 | Page 25

What is the importance of good soil structure?

Solution: Soil structure basically refers to the type of constituents and the ratio in which they are present in soil. The soil structure is important with respect to the growth of plants and the type of plantation which can occur in a particular area. Good soil structure has advantages like:

- roots get sufficient supply of oxygen
- it has good water drainage and thus roots grow well

Exercise | Q 7.5 | Page 25

What are the various uses of soil?

Solution:

Soil type	Particle type	Properties
Sandy	Large	Loosely packed, with large air spaces. Water soaks into it easily. Thus it is dry, light and airy

Clayey	Fine, small	Tightly packed with no air spaces. This type of soil is heavy and holds more water.
Loamy/silt	A mixture of large and small particles	Holds water, contains humus.

Exercise | Q 7.6 | Page 25

What is the need and importance of soil testing from the point of view of farmers?

Solution: Soil testing is a method of determining the constituents of soil. A sample of soil is taken and is tested for its various characteristics for example, pH and electrical conductivity. It is important with respect to agricultural practices as it helps us in determining which crops can be grown in which region. It also gives us a knowledge about the deficient nutrients and this deficiency can then accordingly be dealt with. It is also useful in determining, if additional amounts of fertilizers are required.

Exercise | Q 7.7 | Page 25

What is the importance of air in transmission of sound?

Solution: Air acts as a medium for transmission of sound. When a sound wave passes through air, the particles of air vibrate back and forth, parallel to the direction of the sound wave. Thus, when a sound wave travels in the horizontal direction, then the particles of the medium also vibrate back and forth in the horizontal direction. Sound cannot travel without a medium and thus we cannot listen to sounds in the space because of absence of air.

Exercise | Q 7.8 | Page 25

Why should a glass bottle completely filled with water never be kept in a freezer?

Solution: A glass bottle completely filled with water should not be kept in a freezer because the bottle can break and result in damage. We know that water expands after freezing and if a completely water filled glass bottle is placed in freezer, the water would freeze and would expand resulting in the bottle to break.