



## CLASS NOTES-ANSWERS

Tick the most suitable answer in questions 1 and 2.

1. In addition to the rock particles, the soil contains \_\_\_\_\_.

- (i) Air and water
- (ii) Water and plants
- (iii) Minerals, organic matter, air and water
- (iv) Water, air and plants

2. The water holding capacity is the highest in \_\_\_\_\_.

- (i) Sandy soil
- (ii) Clayey soil
- (iii) Loamy soil
- (iv) Mixture of sand and loam



3. Match the items in Column I with those in Column II:

Column I	Column II
i) A home for living organisms	a) Large particles
ii) Upper layer of the soil	b) All kinds of soil
iii) Sandy soil	c) Dark in colour
iv) Middle layer of the soil	d) Small particles and packed tight
v) Clayey soil	e) Lesser amount of humus

Solution:



Column I	Column II
i) A home for living organisms	b) All kinds of soil
ii) Upper layer of the soil	c) Dark in colour
iii) Sandy soil	a) Large particles
iv) Middle layer of the soil	e) Lesser amount of humus
v) Clayey soil	d) Small particles and packed tight

4. Explain how soil is formed.

**Solution:** Soil is formed through the process of weathering. Weathering is a process of physical breakdown and chemical decomposition of rocks and minerals near or at the surface of the earth. This physical and chemical decomposition is primarily done by wind, water, and climate. As a result of these processes, large rock pieces are converted into smaller pieces and eventually to soil.

5. How is clayey soil useful for crops?

**Solution:** Following are the properties of clayey soil:

1. It has very good water holding capacity.
2. It is rich in organic matter.

For growing crops such as wheat, gram, and paddy, the soil that is good at retaining water and rich in organic matter is suitable. Therefore, clayey soils having these characteristics are useful for such kind of crops.



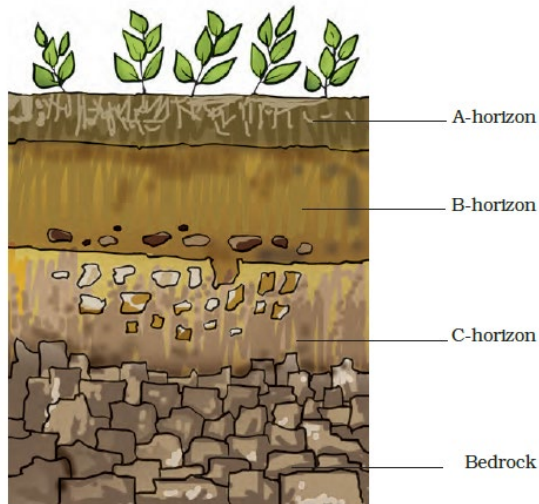
6. List the differences between clayey soil and sandy soil.

Solution:

<b>Clayey Soil</b>	<b>Sandy Soil</b>
(i) It has much smaller particles.	(i) It has much larger particles.
(ii) It can hold good amount of water.	(ii) Water holding capacity is low.
(iii) It is fertile. Rich in humus and organic nutrients.	(iii) It is not fertile. Not rich in humus and organic nutrients
(iv) Very little air is trapped between the particles.	(iv) More air is trapped between the particles.
(v) Particles are tightly packed.	(v) Particles are loosely packed
(vi) Good for growing various crops.	(vi) Not suitable for growing crops.
(vii) It is heavy in weight.	(vii) It is light in weight.

7. Sketch the cross section of soil and label the various layers.

Solution:



8. Razia conducted an experiment in the field related to the rate of percolation. She observed that it took 40 min for 200 mL of water to percolate through the soil sample. Calculate the rate of percolation.

Solution:

Amount of water = 200 ml

Percolation time = 40 minutes

Percolation rate =  $\frac{\text{amount of water in ml}}{\text{Percolation time in minutes}}$

$$\begin{aligned}
 &= \frac{200\text{ml}}{40\text{mins}} \\
 &= 5\text{ml/min}
 \end{aligned}$$

9. Explain how soil pollution and soil erosion could be prevented.

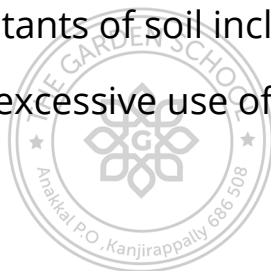
Solution:



Prevention of soil pollution:

The persistent build-up of toxic compounds in the soil is defined as soil pollution. To prevent soil pollution, its causes must be controlled.

1. Reduce the use of plastics: Plastics and polythene bags destroy the fertility of soil. Hence, these should be disposed off properly and if possible, their use should be avoided.
2. Industrial pollutants: Some waste products from industries and homes pollute soil. These pollutants should be treated chemically to make them harmless before they are disposed off.
3. Insecticides: Other pollutants of soil include pesticides and insecticides. Therefore, excessive use of these substances should be avoided.

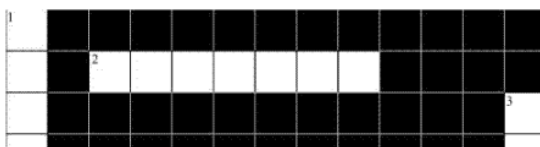


Prevention of soil erosion:

Removal of the upper fertile layer of the soil (top soil) by strong wind and flowing water is known as soil erosion. Following steps can be taken to reduce soil erosion:

1. Mass awareness to reduce deforestation for industrial purposes.
2. By stopping deforestation and avoiding overgrazing of animals.
3. Helping local people to regenerate degrading forest.
4. Planting more and more trees.

10. Solve the following crossword puzzle with the clues given:





Across

2. Plantation prevents it.
5. Use should be banned to avoid soil pollution.
6. Type of soil used for making pottery.
7. Living organism in the soil.

Down

1. In desert soil erosion occurs through.
3. Clay and loam are suitable for cereals like.
4. This type of soil can hold very little water.
5. Collective name for layers of soil.

**Solution:**

Across

2. Plantation prevents it. → Erosion
5. Use should be banned to avoid soil pollution. → Polythene
6. Type of soil used for making pottery. → Clay
7. Living organism in the soil. → Earthworm



Down

1. In desert soil erosion occurs through. → Wind
3. Clay and loam are suitable for cereals like. → Wheat
4. This type of soil can hold very little water. → Sandy
5. Collective name for layers of soil. → Profile

