NCERT Solutions for Class 7 Science Chapter 9 Soil

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

Solution:

The answer is (iii) minerals, organic matter, air and water.

2. The water holding capacity is the highest in

(i) sandy soil

(ii) clayey soil

(iii) loamy soil

(iv) mixture of sand and loam

Solution:

The answer is (ii) clayey soil

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

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(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 due to the weathering of rocks. Weathering is a process in which physical breakdown and chemical decomposition of minerals takes place primarily by wind, water and climatic changes. In the weathering process, rocks are converted to small pieces, which eventually turn to soil particles to form a layer of soil.

5. How is clayey soil useful for crops?

Solution:

Clayey soil is useful for crops for the following reasons

- It has excellent water holding capacity
- Clayey soil is rich in organic matter
- Clayey and loamy soils are suitable for growing cereals like wheat
- Water holding-capacity of clayey soil supports the growth of crops like paddy which require more water to grow

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

Solution:

Clayey Soil	**Sandy Soil**
1. Particles are finer	Particles are larger
2 Particles are tightly packed	Particles are loosely packed
3. Holds a good amount of water	Water holding capacity is low
4. It is heavy in weight	It is light in weight
5. Rich in humus and organic nutrients	Not rich in humus and organic nutrients
6. Very little air is trapped between the particles	More air is trapped between the particles

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

Solution:

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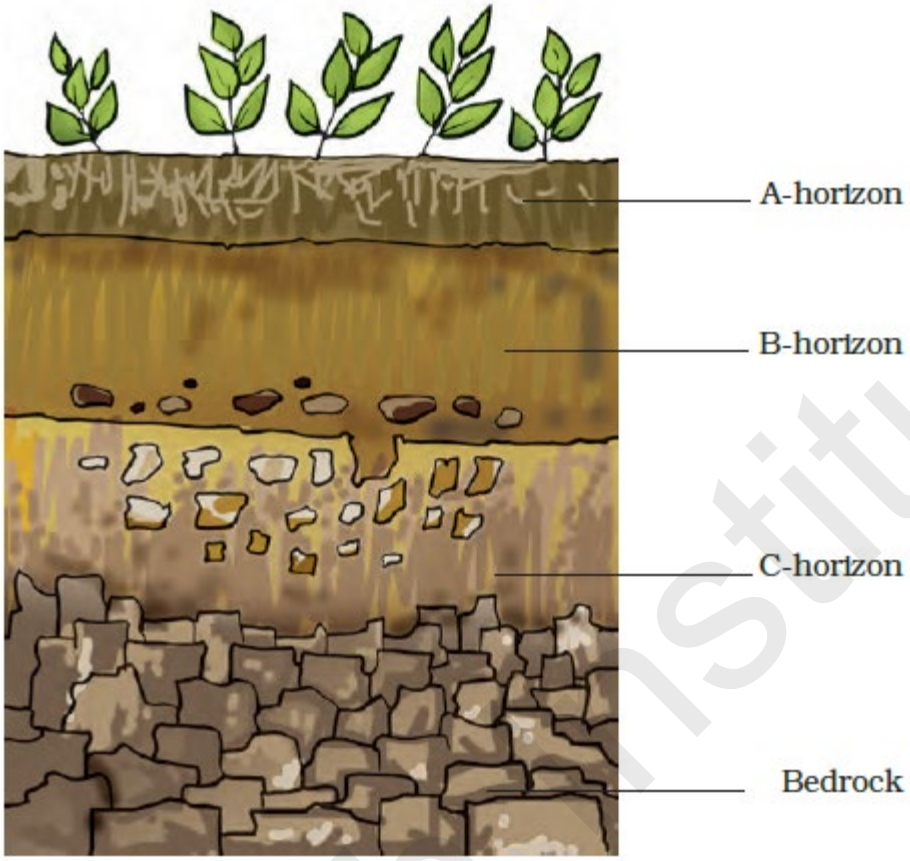


Fig. 9.3 Soil profile

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 = $\frac{\textit{amount of water in ml}}{\textit{percolation time in minutes}}$

$= \frac{200ml}{40mins}$

= 5ml/min

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

Solution:

Soil pollution can be controlled by the following measures:

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- By reducing the use of plastics, we can reduce soil pollution.
- By controlling the use of chemical fertilisers and pesticides, we can control soil pollution.

Soil erosion can be controlled by taking the following steps

- Planting more and more trees will result in the reduction of soil erosion.
- By stopping deforestation and avoiding overgrazing of animals.

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.

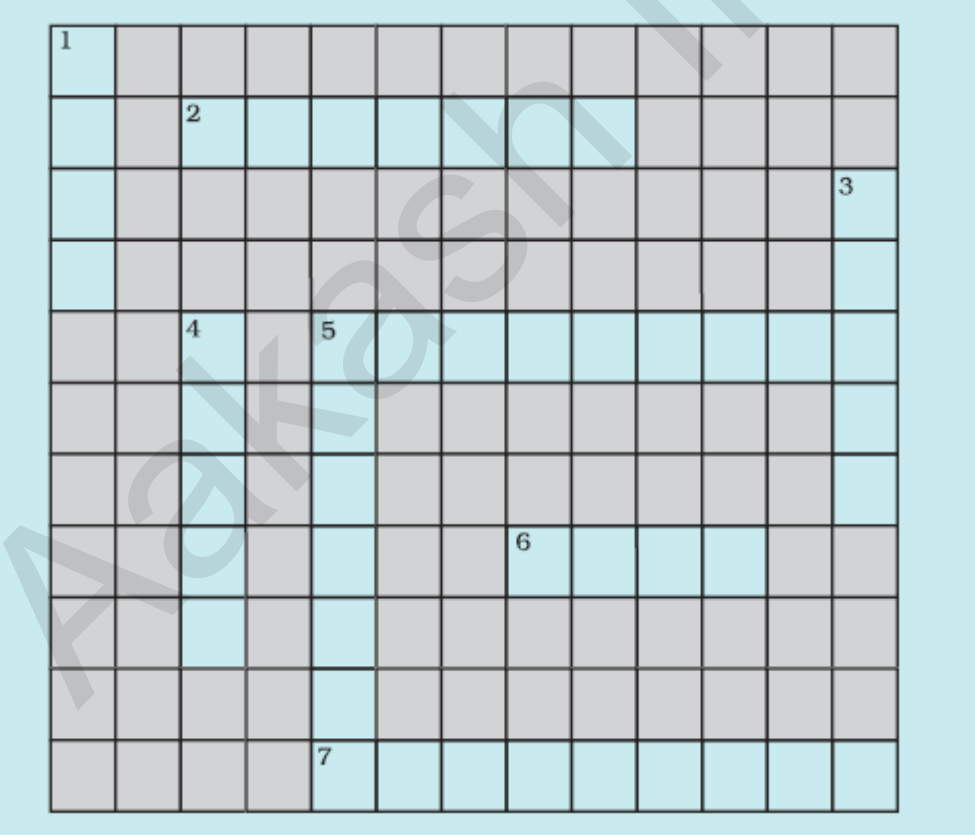
Down

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:

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Across:

2. Erosion
5. Polythene
6. Clay
7. Earthworm

Down:

1. Wind
3. Wheat
4. Sandy
5. Profile

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