

**CBSE Class–VII Science**  
**NCERT Solutions**  
**CHAPTER-09**  
**SOIL**

**Tick the most suitable answer in questions 1 and 2.**

**Question 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.

**Answer:** (iii) minerals, organic matter, air and water.

**Question 2. The water holding capacity is highest in**

- (i) sandy soil
- (ii) clayey soil
- (iii) loamy soil
- (iv) mixture of sand and loam.

**Answer:** (ii) clayey soil.

**Question 3. Match the items in Column I with those in Column II.**

Column I	Column II
(i) A home of 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.

**Answer:** (i) (b) (ii) (c) (iii)(a) (iv) (e) (v) (d)

Column I	Column II
(i) A home of 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

**Question 4. Explain how soil is formed.**

**Answer:** The soil is formed by the process of weathering in which the rocks break down by the action of wind, water and climate. It is a very slow process and big rocks get converted into soil.

**Question 5. How is clayey soil useful for crops?**

**Answer:** Clayey soil is very useful for crops because:

- (i) It has very good water retaining capacity.
- (ii) This soil is rich in humus and is very fertile.
- (iii) It contains useful organic minerals. These properties of loamy soil is very suitable for growing crops.

**Question 6. List the difference between clayey soil and sandy soil.**

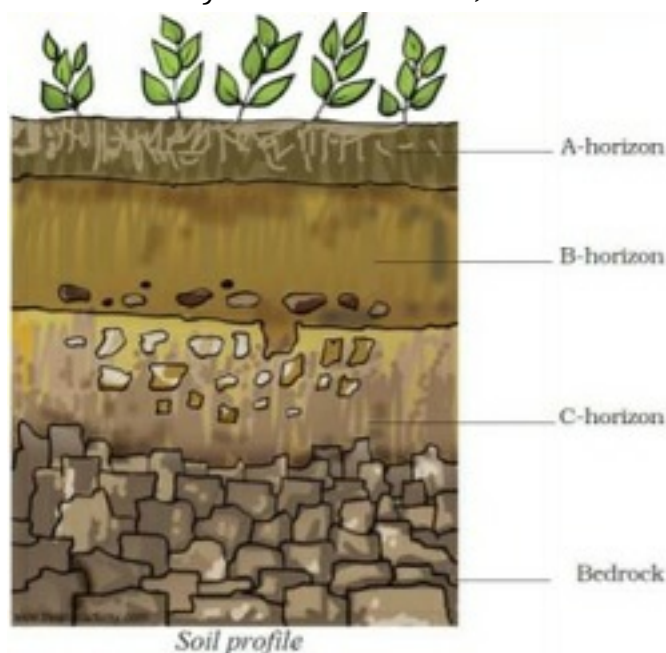
**Answer:**

Sandy soil	Clayey soil
(i) Proportion of fine particle is large.	(i) Proportion of big particle is large.
(ii) Has least percolation rate of water.	(ii) Has largest percolation rate of water.
(iii) Has good water holding capacity.	(iii) Has poor water holding capacity.

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

**Answer:** A vertical section through different layers of the soil is called the soil profile. Each layer differs in feel (texture), colour, depth and chemical composition. These layers are referred to as horizons.

1. The uppermost horizon is generally dark in colour as it is rich in humus and minerals. The humus makes the soil fertile and provides nutrients to growing plants. This layer is generally soft, porous and can retain more water. It is called the topsoil or the A-horizon.
2. The next layer has a lesser amount of humus but more of minerals. This layer is generally harder and more compact and is called the B-horizon or the middle layer.
3. The third layer is the C-horizon, which is made up of small lumps of rocks with cracks and crevices.
4. Below this layer is the bedrock, which is hard and difficult to dig with a spade



**Question 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.

**Answer:** Amount of percolate water = 200 ml

Time taken for percolation = 40 min

We know that,

$$\text{Rate of percolation (ml / min)} = \frac{\text{Amount of water}}{\text{Percolation time}}$$

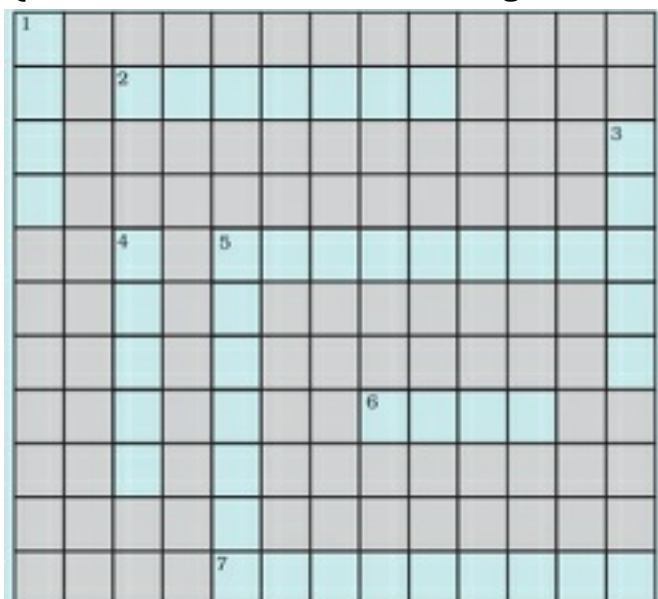
$$= \frac{200 \text{ ml}}{40 \text{ min}} = 5 \text{ ml/min}$$

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

**Answer:** Steps for preventing soil pollution and soil erosion:

- (i) Plantation should be encouraged because plant roots firmly bind the soil and help in preventing erosion.
- (ii) Methods like crop rotation and mixed farming should be followed.
- (iii) Use of organic fertilizers and manure instead of synthetic.
- (iv) Pesticides and insecticides should be used in limited quantity and find natural way to prevent it.
- (v) Plastic bags should be banned and it doesn't decompose and gives rise to soil pollution.
- (vi) Industrial waste shouldn't be dumped directly as it kills necessary micro organisms of soil.

**Question 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.

- Answer:**

