Short Answer Questions

Q.1.Which of the following situations — 'A' or 'B' is advantageous for absorption of water and minerals? Why?

Situation 'A' : Growth and branching of roots in the C-horizon. Situation 'B' : Growth and branching of roots in A and B-horizons.

[NCERT Exemplar]

Ans. Situation 'B' is advantageous to plants because A and B-horizons are rich in water, minerals and humus.

Q.2. How can a farmer convert acidic soil to neutral soil?

[NCERT Exemplar]

Ans. A farmer can add a small quantity of quicklime or slaked lime solution to the soil. These are the basic substances which will make the acidic soil neutral.

Q.3. Is it a good practice to remove grass and small plants that are growing in an open, unused field? Give reason to support your answer.

[NCERT Exemplar]

Ans. No, it is not a good practice. Plants cover the soil surface and their roots bind the soil particles and hold them in place. During strong winds and rains they prevent soil erosion and thereby protect the topsoil.

Q.4. A man digging a pit found that he could dig with ease initially but digging became difficult as he went deeper. He could not dig beyond a depth of 5 feet. Provide a suitable scientific explanation.

[NCERT Exemplar]

Ans. The soil surface has loose topsoil which is easier to dig. At deeper layers, partially weathered rocks or bedrocks are present which are hard, making digging difficult.

Q.5. What is the difference between rate of percolation and the amount of water retained?

Ans. Percolation refers to the amount of water seeping down while amount of water rationed refers to the amount of water held. Higher percolation means large spaces between soil particles and lower in the amount of water retained.

Q.6. What is soil erosion? List the agents of soil erosion.

Ans. Soil erosion is defined as the removal of the topsoil. The different agents responsible for soil erosion are wind and water.

Q.7. Soil is a home to several animals. Give examples to support this statement.

Ans. Earthworms burrow through the soil, ants live in large colonies and burrows in soil, centipedes live under stones and in soil, some bacteria living in soil fix nitrogen for the plant to take up and microorganisms decompose dead plants and animals.

Q.8. What is soil profile? Name the layers found in soil profile.

Ans. A vertical section through different layers of the soil is called soil profile. The different layers found in soil profile are A-horizon, B-horizon, C-horizon and bedrock.

Q.9. List two harmful effects of soil erosion.

Ans. (a) Decrease in soil fertility and thus crop productivity.

(b) Water bodies become muddy, affecting aquatic life.

Q.10. What are the constituents of soil?

Ans. Soil consists of

a. soil particles of different sizes
b. soil water
c. humus
d. soil air
e. flora and fauna

Q.11. ow can you calculate the absorption of water by soil?

Ans.

The absorption of water by soil can be calculated by

$$\text{Percentage of water absorbed} = \frac{(U-V)\,\text{mL}}{\text{weight of soil}} \times 100$$

where U mL = Initial volume of water in the measuring cylinder

V mL = Final volume of water in the measuring cylinder