

7th Chapter soil living science Question answer

A. MULTIPLE-CHOICE QUESTIONS: Choose the most appropriate answer.

- Humus and the smallest particles of rock form the a. A-horizon. b. B-horizon. c. C-horizon. d. bedrock
 - Which of these has the smallest size of particles? a. sand b. silt c. clay d. gravel
 - Which type of soil is best for growing cotton? a. sandy b. clayey c. loamy d. sandy-loam
 - Which of these does not cause weathering?
a. clouds b. wind c. flowing water d. freezing of rainwater
 - Water percolating into the soil collects over
a. A-horizon. b. B-horizon. c. C-horizon. d. none of these
 - Water logging can be expected in soil which is rich in a. sand. b., clay. c. silt. d. humus.
 - Paddy grows best in a. clayey soil. b. loam. c. sandy soil. d. sandy-loam.
- Answer. 1. a 2. c 3. d 4. a 5. d 6. b 7. a

B. VERY SHORT-ANSWER QUESTIONS: Give one-word answers.

- Breaking down of rock into smaller pieces by natural forces is called ----.
- Which absorbs more water—sandy soil or clay?
- The layer of soil that contains the largest rock pieces is called ---.
- in general, which is the best topsoil for growing plants'?
- Water logging occurs in sandy soil. True or false?
- Is soil a natural resource'?
- Since clay holds more water, it is very good for plants as they get plenty of water. True or false?
- Humus is formed by the action of insect on soil. True or false?
- Soil without humus cannot be fertile. True or false?
- Humus is formed bar the action of decomposers. True or false? .

Answer: 1. weathering 2. sandy soil 3. bedrock 4. loam 5. false 6. yes 7. false 8. false 9. false 10. true

C. SHORT-ANSWER QUESTIONS: Answer in a sentence or two.

- What does soil consist of?

Ans: Soil consists of mineral particles, humus, air, water and living organisms.

- What is weathering?

Ans: Weathering is the breaking down of huge pieces of rocks into smaller pieces by the action of natural forces, such as water, glaciers, wind, roots of plants etc.

- Which soil will allow more water to percolate—sandy soil or clayey soil? Why?

Ans: Sandy soil will allow more water to percolate. This is because water drains quickly through large spaces between the sand particles.

- Which soil will absorb more water—sandy soil or clayey soil? Why?

Ans: clayey soil will absorb more water. In clayey soil, which mostly contains clay, water drains through very slowly, since the particles are very small and tightly packed.

- What is humus?

Ans: The dead and decay remains of plants and animals present in soil is called humus

- How does large variation between day and night temperatures cause weathering?

Ans: The rocks expand during the day and contract at night. This constant expansion and contraction weakens the rocks, and they crack and crumble.

7. What do you mean by 'water table'?

Ans: Rainwater that percolates through the soil collects above the bedrock. This natural level of groundwater is called the water table.

D. LONG-ANSWER QUESTIONS: Answer in about 50 words.

1. Explain how water is responsible for the formation of soil.

Ans: Rainwater enters crevices of rocks. In winters, as this water freezes, it expands. This expansion breaks the rocks into smaller pieces. The broken pieces roll down by the force of flowing water and they collide against the ground and against each other to break down further. Finally, they get converted into very fine particles and mix with humus to form soil.

2. Trees help in soil formation as well as in its protection. Explain.

Ans: Roots of trees growing through rocks exert great pressure on the rocks. This causes cracks in the rocks, leading to weathering. On the other hand, roots of plants growing on slopy hilly areas hold soil tightly and prevents soil erosion. Thus, we can say that trees help in soil formation as well as in its protection.

3. Name the different layers of soil. What does each layer consist of?

Ans: The different layers of soil are

(i) Top soil (A-horizon): Humus and the smallest particles of rock form the upper layer of soil called topsoil or A-horizon. It contains the most nutrients for plants.

(ii) Sub soil (B-horizon): It is mostly made up of rock bits and some nutrients, such as soluble minerals and iron oxides.

(iii) Parent rock (C-horizon): It consists of small pieces of rocks with cracks and crevices.

4. Distinguish between clay, silt and sand.

Ans: (i) Clay has the smallest size of particles less than 0.002 mm in diameter. In fact, we cannot see a single clay particle. Clay feels smooth because of its small particle size.

(ii) Silt has particles larger than clay, (diameter between 0.002 mm and 0.2 mm). Therefore, it is not so smooth. It can be found, for example, in a river bed.

(iii) Sand has the largest-sized particles, which can easily be seen (diameter greater than 0.2 mm). They are coarse to touch.

5. What is loam? Why is it considered to be the best topsoil for growing plants?

Ans: The best topsoil for growing plants is loam. Loam is a mixture of sand, silt and clay and also has humus in it. It has the right water-holding capacity for plant growth. It also has adequate spaces between the soil particles to trap air required by the roots of the plants.

6. Why is soil regarded as our most important natural resource?

Ans: (i) Soil is our most important natural resource. It is useful to us in many ways: We depend on the soil for food, clothing and shelter: By supporting growth of plants, the soil provides us with food. Much of our clothing, such as cotton and wool, can be traced to the soil. Plants also provide us with the medicines, fuel, paper and wood which is used in making furniture and for constructing houses.

(ii) We depend on the soil for minerals: Industries use the minerals dug out from the earth to extract metals, such as iron, gold, silver and so on. These are used in thousands of industries that produce various useful things for us. (iii)

We depend on the soil for water: Water that seeps into the soil is stored underground as subsoil water. We use this water for drinking and other purposes

7. Why is the earthworm referred to as 'farmer's friend'?

Ans: The earthworm makes burrow in the soil. This makes the soil loose thus allowing air into it and water to drain from it. Earthworm also forms channels in the soil for the root to spread through. For this reason, the earthworm is referred to as the 'farmer's friend'.

E. HOTS QUESTIONS: Think and answer.

1. What effect does construction of buildings and roads have on water percolation through soil? Hence what effect would this have on the water table?

Answer: Construction of buildings and roads stops water percolation through the soil. This causes the water table to go down.

2, Soil is constantly formed by weathering of rocks. Why then are we so concerned about soil erosion?

Answer: Formation of 1 cm of soil by natural method may take 100 years or more. However, erosion of soil happens in a matter of days. That is why soil erosion is of great concern.

3. Why does topsoil have much more humus than subsoil?

Answer: The decay of the remains of plants and animals that forms humus mostly happens on top of the soil. Therefore the humus formed remains mostly on the top soil.

4. What kind of soil is most suitable for making toys and why?

Answer: Clayey soil is smooth and sticky. It does not crumble apart easily. So it is most suitable for making toys as it can be moulded into any shape without breaking.