

SCIENCE

Chapter 9: Soil



➤ Multiple Choice Questions:

Question 1. Soil is the substance which makes up the _____ of the earth.

- (a) rock
- (b) layers
- (c) surface
- (d) all of the above

Question 2. Which one of the following is a step in the formation of soil?

- (a) Earthquakes or volcanic eruptions
- (b) Weathering of rocks
- (c) Addition of humus
- (d) All of these

Question 3. Which factor influences soil formation?

- (a) Climate
- (b) Vegetation
- (c) Microorganism
- (d) All of these

Question 4. Which of the following does not cause soil erosion?

- (a) Deforestation
- (b) Terrace farming
- (c) Floods
- (d) Overgrazing

Question 5. Soil conservation measures are mainly aimed at protecting

- (a) plants
- (b) top soil
- (c) sub soil
- (d) soil organisms

Question 6. In which horizon of soil minerals are found?

- (a) A
- (b) B
- (c) C
- (d) None

Question 7. The best top soil for growing plants is



- (a) sandy soil
- (b) loamy soil
- (c) clayey soil
- (d) all of these

Question 8. The mixture of rock particles and humus is called

- (a) soil
- (b) weathering
- (c) silt
- (d) gravel

Question 9. One of the following is not a type of soil. This one is

- (a) loamy soil
- (b) silty soil
- (c) clayey soil
- (d) sandy soil

Question 10. Which of the following has smallest size soil particles?

- (a) Gravel
- (b) Silt
- (c) Clay
- (d) Sand

Question 11. Cotton grows well in

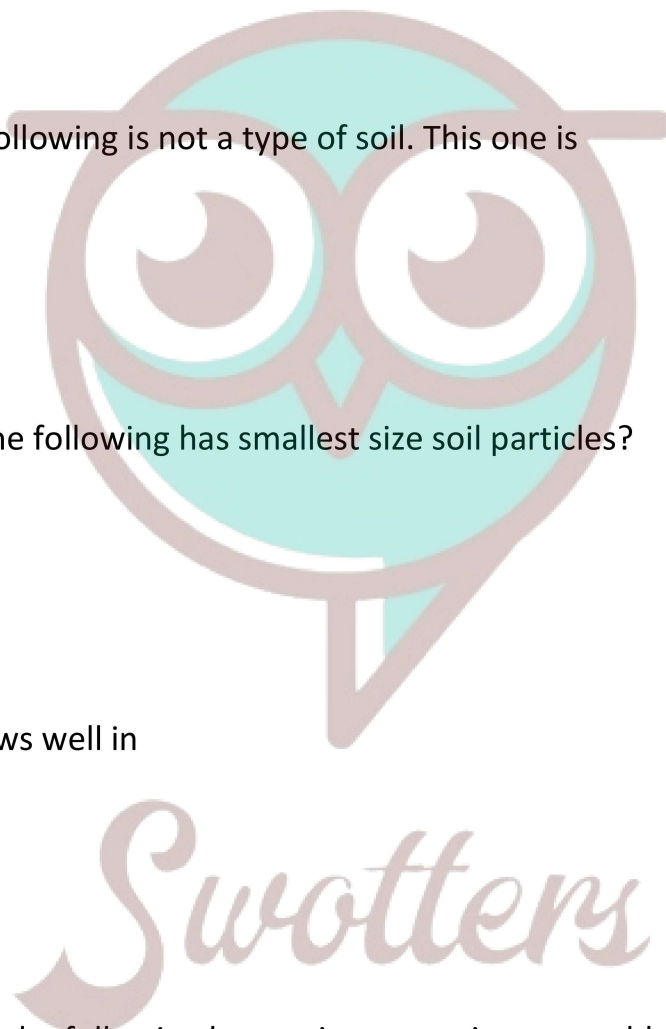
- (a) black soil
- (b) laterite soil
- (c) red soil
- (d) loamy soil

Question 12. In which of the following humus is present in reasonable amount?

- (a) A-horizon
- (b) B-horizon
- (c) C-horizon
- (d) Bedrock

Question 13. Which of the following cannot prevent soil erosion?

- (a) Reforestation
- (b) Deforestation



- (c) Silviculture
- (d) Plantation

Question 14. The topmost layer of soil is known as

- (a) top soil
- (b) sandy soil
- (c) sub soil
- (d) bed soil

Question 15. Sandy soils are found in

- (a) hilly areas
- (b) tropical region
- (c) deserts
- (d) polar region

➤ **Fill In the Blanks:**

1. B-horizon is also known as
2. is removed during soil erosion.
3. The soil with large amount of fine particles is called soil.
4. The soil with a mixture of humus, sand and clay is called soil.
5. soil is fit for cultivation.
6. Percolate means or gradually

➤ **True or False:**

1. Soil can be acidic, alkaline or neutral.
2. Upper portion of soil always contain air.
3. Capacity to hold water is more in clayey soil.
4. Clayey soil is used for making pots.
5. Polythene bags and plastics pollute the soil.
6. Erosion of soil is more severe in areas with high vegetation.

➤ **Very Short Question:**

1. Name an important natural resource that supports growth of plants.
2. Name major soil pollutants.
3. What do you mean by soil profile?
4. What is soil?

5. Name the process by which soil is formed.
6. Name the soil with highest water absorption rate.
7. Name the soil having very less space between particles.
8. Ram has to grow wheat crop in his field, what kind of soil he will prefer?
9. Name some places with severe soil erosion.
10. Classify soil on the basis of appearance and properties of particles.

➤ Short Questions:

1. Explain soil and factors affecting soil.
2. Define the following:
 - a) Soil profile
 - b) Horizon
3. Why is top soil known as the habitat of many living organisms?
4. Why Upper most layers in a soil profile are considered as most productive?
5. What is the similarity between physical and chemical weathering.
6. State the factors on which nature of soil depends?
7. Classify soil on the basis of the proportion of particles of various sizes.
8. Plants help the development of the soil. How?

➤ Long Questions:

1. What causes the wind to blow?
2. Explain monsoon.
3. What are the global wind patterns?
4. Explain Sea breeze.
5. What causes lightening?

✓ Answer Key-

➤ Multiple Choice Answers:

1. (c) surface
2. (d) All of these
3. (d) All of these
4. (b) Terrace farming
5. (b) top soil
6. (b) B

- (b) loamy soil
- (a) soil
- (b) silty soil
- (c) Clay
- (a) black soil
- (a) A-horizon
- (b) Deforestation
- (a) top soil
- (c) deserts

➤ **Fill In the Blanks:**

- sub-soil
- Top soil
- clayey
- loamy
- loamy
- filter, ooze

➤ **True or False:**

- True
- True
- True
- True
- True
- False

➤ **Very Short Answers:**

- Answer: Soil.
- Answer: Polythene bags, plastics, waste products, chemicals and pesticides.
- Answer: A vertical section through different layers of the soil is called the soil profile.
- Answer: Soil is the crust part of the earth. It is mainly the mixture of rock particles and humus.
- Answer: Weathering
- Answer: Sandy soil.
- Answer: Clayey soil



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8. Answer: Clayey soil
9. Answer: Areas of little or no surface vegetation, such as deserts and barren lands.
10. Answer: Sandy soil, Clay soil and Loamy soil

➤ Short Answer:

1. Answer: Soil is the crust part of the earth. It is mainly the mixture of rock particles and humus. Wind, rainfall, temperature, light and humidity are the factors which affect the soil profile and bring changes in the soil structure
2. Answer:
 - a) A vertical section through different layers of the soil is called the soil profile.
 - b) Each layer of soil differs in feel (texture), colour, depth and chemical composition. These layers are called horizons.
3. Answer: Soil is the habitat for many living organisms, like bacteria, fungi, protozoan and earthworms as it contains large amounts of nutrients. Therefore top soil is called the habitat of many living organisms.
4. Answer: In the soil profile, Horizon – A, also known as Topsoil is best suited for the plant growth. As we know that availability of nutrients and water in soil helps to determine the productivity of soil. Top soil is rich in humus minerals along with water. Thus, Top soil is considered as more productive.
5. Answer: They both reduce the size of a rock body.
6. Answer: The nature of any soil depends upon the rocks from which it has been formed and the type of vegetation that grows in it.
7. Answer:
 - If soil contains greater proportion of big particles it is called sandy soil.
 - If the proportion of fine particles is relatively higher, then it is called clayey soil.
 - If the amount of large and fine particles is about the same, then the soil is called loamy.
 Thus, the soil can be classified as sandy, clayey and loamy.
8. Answer: The plants attract animals, and when the animals die, their bodies decay. Decaying matter makes the soil thick and rich. This continues until the soil is fully formed. The soil then supports many different plants.

➤ Long Answer:

1. Answer: Soil is one of the most important natural resources because
 - It supports the growth of plants by holding the roots firmly and supplying water and nutrients.
 - It is the home for many organisms.
 - Soil is essential for agriculture. Agriculture provides food, clothing and shelter for all.

- Soil is thus an inseparable part of our life.

2. Answer: Different layers of the soil are referred to as horizons.

The uppermost layer, the top soil, also known as A-horizon is generally dark in colour and fertile as it is rich in humus and minerals. This layer is generally soft, porous and can retain more water. This provides shelter for many living organisms such as worms, rodents, moles and beetles. The roots of small plants are embedded entirely in the topsoil.

The next layer, middle layer called B-horizon has a lesser amount of humus but more of minerals. This layer is generally harder and more compact.

The third layer is the C-horizon which is made up of small lumps of rocks with cracks and crevices.

Below this layer is the bedrock, which is hard and difficult to dig with a spade. Water can be held in the tiny gaps.

3. Answer: A non-living organic matter formed from remains of dead and decay plants and animal by the activity of microorganism present in soil. Humus controls and regulates many soil functions, as well as plant growth. The better the humus content in the soil the healthier and more productive soil will be. Good humus count in soil will hold soil moisture longer, thus lesser water is required for crop production, also good humus count reduces wind erosion of soil.
4. Answer: Physical weathering is the breakdown of rock into smaller particles due to factors such as freezing and thawing, release of pressure, water absorption, salt crystal formation, land mass uplift, expansion and contraction from the sun or fire, plant root growth, actions of animals, abrasion, or other means that do not directly affect the rock's chemistry. It is also called mechanical weathering.
5. Answer: Chemical weathering is the dissolution, carbonation, oxidation, or hydrolysis of rock and mineral by chemical means only, mostly from reactions with water or the acids contained in rainwater. Other materials are formed in the process. Warm, tropical climates are ideal environments for chemical weathering to take place as the chemical reactions are quickened by the bountiful rain and warm temperatures.