Soil

Exercise

Multiple Choice Questions

DIRECTIONS: The following questions has four choices (a), (b), (c) and (d) out of which only one is correct. You have to choose the correct alternative.

1. A well developed soil profile is the result of :
(a) physical process (b) chemical process
(c) organic process (d) All of the above

2. of the four distinct layers or sections of soil profile, organic matter is found in:
(a) top soil
(b) second layer from the top
(c) third layer from the top
(d) the bottom layer

3. Soils are classified according to their:
(a) colour and type of mineral content
(b) colour and texture
(c) texture and type of mineral content
(d) colour, texture and type of mineral content

4. _____ does not lead to soil erosion.
(a) Deforestation (b) Dense vegetation
(c) Over-grazing (d) Winds

5. Soil contains rock particle and_____.
(a) water and air
(b) water and plants
(c) minerals, organic matter, air and water
(d) water, air and plants

6. _____ has the highest water holding capacity.
(a) Sandy soil
(b) Clayey soil
(c) Loamy soil
(d) All of them have same water holding capacity

7. Various layers of soil are called:
(a) soil profile (b) soil erosion
(c) horizon (d) None of these

8. Humus refers to the:
(a) top most layer
(b) bottom layer
(c) rotting dead matter in soil
(d) None of these

9. Weathering is breaking down of rock by the action of:
(a) wind (b) water
(c) climate (d) wind, water and climate

10. Horizons differ from each other in:
(a) colour
(b) depth
(c) chemical composition
(d) All of the above

11. _____ one be able to see the soil profile.
(a) While digging a well
(b) While laying the foundation of a building
(c) While making a deep cut through the soil
(d) In all the above cases

12. _____ we can see the soil profile.
(a) At the sides of a road on a hill
(b) At steep of river bank
(c) Both the above
(d) None of these

13. The upper most horizon of soil is:
(a) dark in colour (b) rich in humus
(c) rich in minerals (d) All of the above

14. The topmost soil:
(a) is soft
(b) is a porous layer
(c) can retain more water
(d) All of the above

15. Humus:
(a) makes the soil fertile
(b) provides nutrients to growing plants
(c) Both the above
(d) None of these

16. _____ is present, in B-layer, in larger, quantities.
(a) Humus (b) Minerals
(c) Water (d) Air

17. Which soil is well aerated, light and dry?
(a) Sandy soil (b) Clayey soil
(c) Loamy soil (d) None of these

18. Which top soil is best for growing plants?
(a) Sandy soil (b) Clayey soil
(c) Loamysoil (d) All of these

19. Which soil is used to make pots and toys?
(a) Sandy soil (b) Clayey soil
(c) Loamysoil (d) None of these

20. Which soil is used to grow cotton?
(a) Sandy soil
(b) Clayey and loamy soil
(c) Sandy loam soil
(d) None of these

21. Silt:
(a) is a type of soil particles
(b) occurs as deposit in river beds
(c) Both the above are correct
(d) None of these

22. Which soil has the right water holding capacity for growth of plants?
(a) Sandy soil (b) Clayey soil
(c) Loamysoil (d) None of these

23. Select the one that provides shelter for living organisms like worms, rodents, etc.
(a) A-horizon (b) B-horizon
(c) C-horizon (d) None of these

24. Which of the following are the substances that are present in the soil and required for the growth of crops?
(a) Manures (b) Pesticides
(c) Fertilisers (d) Nutrients

25. Fungi and bacteria grow mostly in
(a) subsoil (b) top soil
(c) bedrock (d) All of the above

26. Which of the following worms live in the soil?
(a) Ringworm (b) Flatworm
(c) Earthworm (d) Silkworm

27. Which of the following kills the organisms in the soil?
(a) Metallic substances
(b) Earthem pots
(c) Polythene bags and plastics
(d) Glassware

28. Which of the following soils are good at retaining water?
(a) Sand and Clayey (b) Loamy and Sandy
(c) Loamy and Clayey (d) All of the above

29. The removal of top layer of soil by water, wind or ice is known as
(a) seepage (b) sewage
(c) erosion (d) None of these

30. Soil help plants by
(a) supplying them water and minerals
(b) supplying them air
(c) preparing food for plants
(d) helping them to move from one place to another.

31. The rotting dead matter in the soil is called___
(a) decomposition (b) humus
(c) petrification (d) minerals

32. ____ is the collective name for layers of soil.
(a) A-horizon (b) B-horizon
(c) C-horizon (d) Soil profile

33. _____ affect the soil profile and bring changes in soil structure.
(a) Vegetation (b) Animals
(c) Climatic factors (d) Fertilizers

34. Which of the following should be increased to prevent soil erosion?
(a) Flow of water (b) Deforestation
(c) Flow of wind (d) Green areas

35. _____ is mixture of sand and clay.
(a) Clayey soil (b) Humus
(c) Silt (d) Loamysoil

36. Which of the following statements is correct?
(a) Size of the particles present in a soil has no influence on the properties of soil.
(b) Loamy soil is a mixture of sand, clay and silt but contains no humus.
(c) Loamy soil is a mixture of sand, clay, silt and also contains humus.
(d) None of these

37. Which of the following statements is correct?
(a) Sandy soil is used to grow cotton.
(b) Clayey and loamy soil is used to grow gram.
(c) Both the above are correct.
(d) None of these

38. _____ contains particles of large size which can not fit close together.
(a) Sandy soil (b) Clayey soil
(c) Loamy soil (d) None of these

39. Soil is defined as :
(a) mixture of rock particles and humus

(b) loose material on the surface of earth in which plants grow
(c) Both the above are correct
(d) None of these

40. _____ makes the upper crust of soil fertile.
(a) Presence of humus
(b) Presence of minerals
(c) Dark colour of the soil
(d) None of these

41. Why is sandy soil so well aerated?
(a) Due to large spaces between particles.
(b) Presence of air in large spaces between the particles.
(c) Presence of water in large spaces available between the particles
(d) None of these

Match the Column

DIRECTIONS: Match Column-I with Column-II and select the correct answer using the codes given below the columns.

42.

Column-I	Column-II
(a) Top soil	(p) Harder and more compact
(b) Sandy soil	(q) High percolation rate
(c) B-horizon	(r) Dark in color
(d) Loamy soil	(s) Containing silt

(a) (a) → (r),(B) → (q),(C) → (p),(D) → (s)
(b) (a) → (s),(B) → (r),(C) → (q),(D) → (p)
(c) (a) → (p),(B) → (q),(C) → (r),(D) → (s)
(d) (a) → (q),(B) → (r),(C) → (s),(D) → (p)

43.

Column-I	Column-II
(a) A- horizon	(p) Composed of different layers
(b) Soil profile	(q) Rich in humus and minerals
(c) Soil	(r) Can be seen at the sides of a road on a hill
(d) Humus	(s) Rotting dead material in the soil

(a) (a) → (p),(B) → (q),(C) → (r),(D) → (s)
(b) (a) → (q),(B) → (p),(C) → (r),(D) → (s)
(c) (a) → (q),(B) → (r),(C) → (p),(D) → (s)
(d) (a) → (s),(B) → (r),(C) → (p),(D) → (q)

44.

Column-I	Column-II
(a) Bed rock	(p) Made up of small lumps of rocks with cracks
(b) C-horizon	(q) Removal of top soil by water, wind and ice
(c) Humus	(r) Makes soil fertile
(d) Soil erosion	(s) Difficult to dig with a spade

(a) (a) → (s),(B) → (p),(C) → (r),(D) → (q)
(b) (a) → (r),(B) → (q),(C) → (p),(D) → (s)
(c) (a) → (q),(B) → (p),(C) → (r),(D) → (s)
(d) (a) → (p),(B) → (q),(C) → (r),(D) → (s)

Passage Based Question

DIRECTIONS: Read the passage given below and answer the questions that follow.

Passage -1

The natural process of soil formation from the rocks is called me weathering of rock. Weathering is the breaking and wearing down of rocks by the weather (sun, wind, water). In addition, the rocks may be weathered by living organisms.

Rocks in nature get heated in sun and sudden rain may cool them. Rocks expand on heating and contract on cooling. Expansion and contraction of the rocks result in the formation of cracks within the rocks and finally they break into smaller pieces.

Lichens grow on bare rocks. They retain moisture and also release carbon dioxide in the process of respiration.

Carbon dioxide released during respiration gets dissolved in moisture forming carbonic acid. This acid reacts with the rock material to disintegrate it into soil.

This is also called chemical weathering.

45. In which of the following climates will chemical weathering be most rapid?
(a) Hot and dry (b) Hot and humid
(c) Cold and dry (d) Cold and humid

46. Which of the following statements about weathering is false?
(a) Rocks of different compositions weather at different rates
(b) Heat and heavy rainfall increase the rate of chemical weathering

(c) The presence of soil slows down the weathering of the underlying bedrock
(d) The longer a rock is exposed at the surface, the more weathered it becomes

47. Which of the following factors would increase the rate of weathering?
(a) Increasing rainfall
(b) Increasing temperature
(c) Increasing organic activity
(d) All of these

48. Which of the following human activities has resulted in increased rates of weathering?
(a) The release of sulfur and nitrogen oxides that cause acid rain
(b) The physical disintegration of rocks during construction and mining
(c) Both (a) and (b)
(d) Neither (a) nor (b)

49. Which of the following affect the rate of weathering?
(a) The soil type
(b) The rock type
(c) The climate
(d) All of these affect weathering rates

Passage - 2

The chemical substances which are rich from nutrients and used to maintain soil fertility are called fertilizers. They also produce harmful effects. They remain in the soil and spoil porous structure of the soil which is essential for plant growth. They also kill the soil organisms like earthworms. Earthworms burrows and loosens the soil and make it porous.

50. Which of the following is a chemical fertilizer?
(a) Cow dung (b) Urea
(c) Biological mass (d) None of these

51. Which of the following worms creates soil porousity and get killed by fertilizers?
(a) Ringworm (b) Flatworm
(c) Earthworm (d) Silkworm

52. Which of the following statements is correct?
(a) Excessive use of chemical fertilizers cause soil pollution
(b) Organic manure should be used to decrease soil pollution
(c) Fertilizers spoil porous structure of the soil.
(d) Both (a) and (b)

Assertion/Reason Based Questions

DIRECTIONS: The questions in this segment consists of two statements, one labelled as "Assertion A" and the other labelled as "Reason R". You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

53. Assertion (A): The uppermost horizon is dark in colour.
Reason (R): The uppermost horizon is called top soil.

54. Assertion (A): Soils can be classified on the basis of proportions of particles of various sizes present in them.
Reason (R): In loamy soil the proportion of large and fine particles is almost same.\

55. Assertion (A): The uppermost layer is the topsoil which is exposed to air and it bears plants on it.
Reason (R): Topsoil contains a lot of humus. Humus makes the soil fertile.

Statement Based Questions

DIRECTIONS: Read the following two statements carefully and choose the correct options.
(a) Statement (i) is correct while statement (ii) is incorrect.
(b) Statement (ii) is correct while statement (i) is incorrect.
(c) Both statements are correct
(d) Both statements are incorrect.

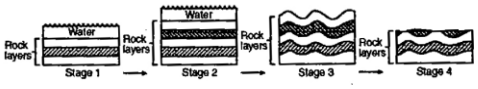
56. (i) Soil takes thousands of years to be formed.
(ii) Soil does not contain water.
(i) B-horizon is the most fertile part of the soil.
(ii) Bed rock lies above sub-soil.

57. (i) Red soil is best suited for growing wheat and rice.
(ii) Black soils are ideal for growing cotton.

Figure Based Question

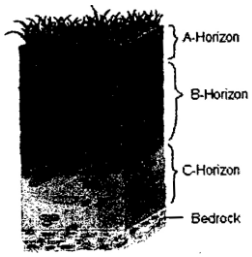
DIRECTIONS: On the basis of following diagram/ picture answer the questions given below:

58. The diagram below shows stages in the development of a certain landscape.



When did erosion become the dominant process in the evolution of the landscape shown
(a) at stage 1
(b) at stage 2
(c) between stages 2 and 3
(d) between stages 3 and 4

59. Which of the horizon in this soil profile shown below is expected to have maximum amount of humus?



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

Exercise – 2

Multiple Choice Questions

DIRECTIONS: The following questions has four choices (a), (b), (c) and (d) out of -which only one is correct. You have to choose the correct alternative.

1. In which soil is the proportion of fine and large particles is equal?
(a) Sandy soil (b) Clayey soil
(c) Loamy soil (d) None of these

2. Which soil has the highest percolation rate of water?
(a) Sandy soil
(b) Clayey soil
(c) Loamy soil
(d) All have the same percolation rate

3. Which of the following shows the correct arrangement of different layers of the soil?
(a) Top soil (b) Subsoil
Sub soil Bedrock
Bedrock Top Soil
(c) Bedrock (d) Subsoil
Top soil Top soil
Sub soil Bedrock

4. Growing different types of crops in a piece of land season after season is called
(a) monoculture (b) irrigation
(c) crop rotation (d) manuring

5. _____ and _____ soils are suitable for growing cereals like wheat and gram.
(a) Clayey and Loamy (b) Sandy and Clayey
(c) Sandy and Loamy (d) Silt and Sandy

6. Which of the following crop is not grown in clayey soil?
(a) Wheat (b) Gram
(c) Paddy (d) Cotton

7. _____ makes the soil porous and fertile.
(a) Centipedes (b) Millepedes
(c) Beetles (d) Earthworms

8. The rate of chemical weathering is increased by adds. The most common natural aridon the Earth's surface is _____.
(a) nitric (b) hydrochloric
(c) carbonic (d) sulfuric

9. Carbonic acid, the primary agent of chemical weathering is produced by ___.
(a) carbon dioxide dissolving in rainwater
(b) plant roots
(c) bacteria that feed on plant and animal remains
(d) All of the above

10. As a rock breaks into smaller pieces, the surface area to volume ratio ____.
(a) increases
(b) decreases
(c) stays the same
(d) can increase or decrease depending on the size of the pieces

11. What is the term geologists use for the layer of loose, heterogeneous weathered material lying on top of the bedrock?
(a) Humus (b) Laterite
(c) Regolith (d) Soil

12. Which of the following farming practices helps to prevent the erosion of topsoil?
(a) Ploughing a field perpendicular to the contour lines.
(b) Ploughing a field parallel to the contour lines.
(c) Ploughing a field in the direction that the water drains.
(d) None of these will help to prevent soil erosion.

13. Which of the following statements is correct?
(a) Both loamy and clayey soil are suitable for growing wheat and gram.
(b) For growing paddy we need a soil that is rich in clay, organic matter and has a good capacity to retain water.
(c) For pulses loamy soils that drain water easily are considered best.
(d) For cotton, sandy-loam soil is the best.

14. Which of the following organisms contribute to soil formation?
(a) Fungi (b) Earthworm
(c)-Bacteria (d) All of the above

15. Which of the following cause soil pollution?
(a) Insecticides (b) Fertilizers
(c) Manure (d) Both (a) and (b)

16. The unweathered rock in soil profile is
(a) Parent rock (d) D-horizon
(c) Bedrock (d) All of the above

17. Which of the following is not eco-friendly?
(a) wood (b) plastic
(c) paper (d) All of the above

18. The soil with particle size of 0.2 mm to 2.0 mm.
(a) silt (b) gravel
(c) sandy soil (d) clayey soil

19. Which one of the following is a cause of soil erosion?
(a) Heavy rain (b) Drought
(c) Overgrazing (d) All of the above

20. The soil which is formed by the deposition of silt is
(a) Alluvial soil (b) Red soil
(c) Black soil (d) Lateritesoil

Match the Column

DIRECTIONS: Match Column-I with Column-II and select the correct answer using the codes given below the columns.

21.

Column-I	Column-II
(a) A home for living organisms	(p) Lesser amount of humus
(b) Middle layer of the soil	(q) Pots and toys
(c) Cotton	(r) All kinds of soil
(d) Clayey soil	(s) Sandy loam soil

(a) (a) → (r),(B) → (p),(C) → (s),(D) → (q)
(b) (a) → (q),(B) → (s),(C) → (p),(D) → (r)
(c) (a) → (p),(B) → (r),(C) → (s),(D) → (q)
(d) (a) → (r),(B) → (p),(C) → (q),(D) → (s)

22.

Column-I	Column-II
(a) Black soil	(p) Regar
(b) Red soil	(q) Superbly fertile
(c) Alluvial soil	(r) Highest humus content
(d) Mountain soil	(s) Iron oxide

(a) (a) → (p),(B) → (s),(C) → (q),(D) → (r)
(b) (a) → (p),(B) → (s),(C) → (r),(D) → (q)
(c) (a) → (p),(B) → (s),(C) → (r),(D) → (q)
(d) (a) → (q),(B) → (s),(C) → (r),(D) → (p)

23.

Column-I	Column-II
(a) Red soil	(p) Himalayan region
(b) Black soil	(q) Rajasthan, Gujarat
(c) Mountain soil	(r) Maharashtra, M.P., Tamil Nadu
(d) Alluvial soil	(s) Kerala, Karnataka

(a) (a) → (s),(B) → (r),(C) → (p),(D) → (q)
(b) (a) → (q),(B) → (r),(C) → (p),(D) → (s)
(c) (a) → (s),(B) → (p),(C) → (r),(D) → (q)
(d) (a) → (s),(B) → (r),(C) → (q),(D) → (p)

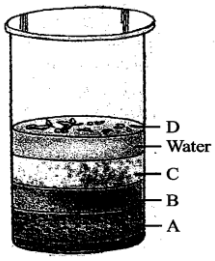
Passage Based Question

DIRECTIONS: Read the passage given below and answer the questions that follow.

Passage – 1

Soil was dug from the garden and dissolved in water (about 500 ml) taken in a beaker. The beaker was shaken vigorously for about a minute and then kept undisturbed. After sometime the soil settles down and different components present in the soil (i.e. sand, clay, humus, gravel and silt) formed different layers as shown in figure.

24. Layer represented by (D) in the figure is of:
(a) gravel (b) sand
(c) clay (d) humus



25. Layer represented by (B) is of :
(a) gravel (b) sand
(c) clay (d) silt

26. Layer represented by (A) is :
(a) gravel (b) sand
(c) clay (d) silt

Passage – 2

Weigh 100g of soil and place it on a news paper in the sun to dry for about 2 hours. Do not allow any soil to spill from the news paper. After drying it, weigh the soil and let the weight of soil (dry) is x g.

27. Which of the following statements is correct in terms of soil moisture?
(a) Soil holds water in it which is called soil moisture
(b) Loss of weight of soil on drying is called soil moisture.

(c) Initial weight of soil is called soil moisture.
(d) Final weight of the soil is called soil moisture

28. How much was the soil moisture present in this sample of soil?
(a) 100g (b) xg
(c) (100-x)g (d) None of these

29. What is the % age of moisture in this sample of soil?
(a) x% (b) (100-x)%
(c) $\frac{100}{x}\%$ (d) $\frac{x}{100}\%$

Passage – 3

Water when allowed to percolate through a loamy soil, took 20 minutes for 400 mL of water to percolate. Different soils have different percolation rates. Percolation rate of sandy soil is faster as compared to clayey soil.

30. The rate of percolation is:
(a) 10mL/min (b) 20mL/min
(c) 5mL/min (d) None of these

31. Loamy soil contains _____
(a) sand, clay and silt
(b) sand, humus and rock
(c) sand, humus and silt
(d) sand, clay and rock

32. Which of the following is the correct order for percolation rate?
(a) Sandy soil < Clayey soil < Loamy soil
(b) Clayey soil > Sandy soil > Loamy soil
(c) Sandy soil > Clayey soil > Loamy soil
(d) Loamy soil > Clayey soil > Sandy soil

Assertion/Reason Based Questions

DIRECTIONS: The questions in this segment consists of two statements, one labeled as "Assertion A "and the other labeled as "Reason R". You are to examine these two statements carefully and decide if the Assertion A and Reason R are individually true and if so, whether the reason is a correct explanation of the assertion. Select your answers to these items using codes given below.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

33. Assertion (A): Soil is formed by weathering of rocks.
Reason (R): The process of breaking down of rocks by the action of wind, water and climate is called weathering.

34. Assertion (A): Middle layer of the soil is harder and more compact.
Reason (R): The layer below middle layer is called bed rock.

35. Assertion (A): Different types of soil are needed to cultivate different types of crops.
Reason (R): Clayey soil is used to make statues.

36. Assertion (A): Red soil in India is mainly found in me interior regions of Kerala and Tamil Nadu, Southern Kamataka and Madhya pradesh.
Reason (R): The red colour of this soil is due to the presence of iron oxide in it.

37. Assertion (A): Mountain soil is very fertile.
Reason (R): Mountain soil have similar composition at different places.

Statement Based Questions

DIRECTIONS: Read the following three statements carefully and choose the correct option.

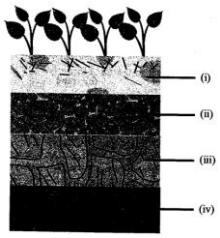
(a) Statement (i) and (iii) are incorrect while statement (ii) is correct.
(b) Statement (i) and (ii) are incorrect while (iii) is correct.
(c) All the statements are correct.
(d) All the statements are incorrect.

38. (i) Erosion of soil is more severe in areas of high vegetation.
(ii) Polythene and plastic bags pollute the soil and also kill the organisms living in the soil.
(iii) Discharge of waste products by chemical factories does not cause soil pollution.

39. (i) Tea, coffee grow very well in sandy soil.
(ii) Capacity to hold water is much in sandy soil than clayey soil.
(iii) Clayey soil has poor air circulation.

Figure Based Questions

DIRECTIONS: On the basis of following diagram/ picture answer the questions given below:



40. Which part in the given figure contains cracks and crevices?

(a) (i) (b) (ii)
(c) (iii) (d) (iv)

41. "It is dark in colour and rich in humus". The above statement is true for which layer in the given figure?

(a) (ii) (b) (iv)
(c) (iii) (d) (i)

42. Which of the following layer consists of unweathered rocks?

(a) (iv) (b) (i)
(c) (ii) (d) (iii)

HINTS & SOLUTIONS

EXERCISE – 1

Multiple Choice Questions

1. (d)

2. (a) Top soil contains organic matter. It is rich in humus which is rotting dead matter.

3. (b) Soils are classified on the basis of colour & texture.

4. (b) Dense vegetation helps in protecting the soil from erosion by water and wind.

5. (c)

6. (b) Clayey soil has highest water holding capacity as it is poorly aerated.

7. (c) Layers of soil are called horizons.

8. (c)

9. (d)

10. (d)

11. (d)

12. (c)

13. (d)

14. (d)

15. (c) Humus makes the soil fertile and provides nutrients to growing plants.

16. (b) B-layer contains more minerals and lesser amount of humus.

17. (a)

18. (c) Loamy soil is best for growing plants.

19. (b) Clayey soil is used to make pots and toys.

20. (c) Sandy loam soil is good to grow cotton.

21. (c)

22. (c) Loamy soil has the correct water holding capacity for growth of plants.

23. (a) A-horizon provides shelter for many living organisms.

24. (d) Nutrients such as N, P, K, Ca, Mg etc. are required for healthy growth of plants.

25. (b) Fungi and Bacteria grow mostly in top soil. As Fungi is a saprophyte it feeds, on decay and some bacteria decomposes the fallen leaves into manures.

26. (c) Earthworms are present in top soil. Earthworm is popularly known as the farmer's friend or as nature's ploughman because of its activities in the soil. It makes burrows into the soil, thus mixing the soil well, and its excreta called wormcast enriches the soil with nitrogen.

27. (c)

28. (c) Clayey soil is badly aerated and gets easily water-logged. It has very good water holding capacity. Loamy soil is the best soil for growing crops because of good aeration and good water holding capacity.

29. (c) Blowing or carrying away of top soil from one place to another by the action of wind or water is called soil erosion.

30. (a) It is the base on which all plants grow. All plants get anchorage, minerals and water from the soil.

31. (b) Organic substances are added to the soil by the activities of plants and animals. Their death and decomposition add organic material to the soil. Excreta of animals and human beings also adds to the soil. The completely decomposed product of plants and animals is called humus.

32. (d) A side view of the vertical section cut through the soil to the underlying solid rocks shows a soil profile.

33. (c)

34. (d) In the absence of plants, soil becomes loose. So it can be moved by wind and flowing water. Erosion of soil is more severe in areas of little or no surface vegetation, such as desert or bare

lands. So, cutting of trees and deforestation should be prevented and efforts should be made to increase the green areas.

35. (d) It consists of a good mixture of sand, clay and humus.

36. (c)

37. (c)

38. (a) In sandy soil the particles are of larger size and cannot fit close together.

39. (c)

40. (a) Humus makes the soil fertile.

41. (b) The spaces between particles are filled with air making sandy soil well aerated.

Match the column

42. (a) (A) → (r), (B) → (q), (C) → (p), (D) → (s)

43. (b) (A) → (q), (B) → (r), (C) → (p), (D) → (s)

44. (c) (A) → (s), (B) → (p), (C) → (r), (D) → (q)

Passage Based Questions

45. (b)

46. (c)

47. (d)

48. (c)

49. (d)

50. (b) Cow dung and biological mass are natural fertilizers whereas urea is a the chemical fertilizer of nitrogen

51. (c) Earthworm makes burrows into the soil, thus mixing the soil well, and its excreta called worm cast enriches the soil with nitrogen.

52. (d)

Assertion/ Reason Based Questions

53. (b) Both (A) and (R) are correct. Reason R is not the correct explanation of Assertion A.

54. (b)

55. (a) Humus makes topsoil fertile that's why plant grows on it.

Statement Based Questions

56. (a) Soil contains water, dissolved substances, mineral salts and living organisms.

57. (d) A-horizon is the most fertile part of the soil. Bed rock or R-horizon lies below C-horizon.

58. (b) Red soil is best suited for growing Maize, Jowar, Bajra and Oilseeds.

Figure Based Questions

59. (c)

60. (a) Horizon A: Top soil contains maximum amount of humus.

EXERCISE – 2

Multiple Choice Questions

1. (c) In loamy soil the amount of large and fine particles is approximately the same.

2. (a) Sandy soil has highest percolation rate of water.

3. (a)

4. (c) Crop rotation replinishes the mineral nutrients lost in the soil. It is a process in which different types of crops are grown season after season.

5. (a) Loamy soil is the best soil for growing crops because of good aeration, good water holding capacity and for being rich in nutrients including humus.

6. (d) To grow cotton, sandy-loam or loam, which drain water easily and can hold plenty of air, is more suitable.

7. (d) Earthworm makes soil porous and fertile.

8. (c) The most common natural acid on Earth's surface is carbonic acid. It is product by carbon dioxide dissolved in rain water, plant roots etc.

9. (d)

10. (a)

11. (c)

12. (b)

13. (d)

14. (d)

15. (d) Excessive use of insecticides and fertilizers causes soil pollution.

16. (c) Bedrock is the fourth layer of soil profile that is consists of unweathered, non- porous and impervious parent rock.

17. (b) Plastic is non-biodegradable. Hence it is not eco-friendly.

18. (c)

19. (d)

20. (a) Alluvial soil is formed by deposition of silts brought by the rivers.

Match the Column

21. (a) (A) $\rightarrow$ (r), (B) $\rightarrow$ (p), (C) $\rightarrow$ (s), (D) $\rightarrow$ (q)

22. (c) (A) $\rightarrow$ (p), (B) $\rightarrow$ (s), (C) $\rightarrow$ (r), (D) $\rightarrow$ (q)

23. (a) (A) $\rightarrow$ (s), (B) $\rightarrow$ (r), (C) $\rightarrow$ (p), (D) $\rightarrow$ (q)

Passage Based Questions

24. (d) (D) is humus.

25. (b) (B) is the layer of sand.

26. (a) (A) is the layer of gravel.

27. (a)

28. (c) Soil moisture
=weight of wet soil - weight of dry soil
= (100-x)g.

29. (b) Percentage of moisture in soil

$$= \frac{\text{weight of moisture}}{\text{original weight of soil}} \times 100$$

$$= \frac{(100-x)}{100} \times 100 \text{ or } (100-x)\%$$

30. (b) Rate of percolation

$$= \frac{\text{Amount of water percolated}}{\text{Percolation time}}$$

31. (a) Loamy soil in a mixture of sand, clay and silt.

32. (c) Sandy soil has highest percolation rate.

Assertion/Reason Based Questions

33. (a) Soil is formed by breaking down of rocks.

34. (c) Assertion (A) is correct, Reason (R) is wrong. The layer below middle layer is called third layer or C - layer.

35. (b) Both (A) and (R) are correct; Reason (R) is not the correct explanation of Assertion (A).

36. (b)

37. (c) Mountain soil have different composition at different places.

38. (a) Erosion is caused due to absence of plants and other vegetation on soil. Discharge of waste products by chemical factories is the main cause of soil pollution.

39. (b)

Figure Based Questions

40. (c) Third layer or C-horizon is made up of small lumps of rocks with cracks and crevices.

41. (d) A-horizon is dark in colour and rich in humus.

42. (a) R-horizon or Bed rock consists of unweathered rocks.