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بنك الأسئلة

SCIENCE

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SCAN ME

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1 Define (what is meant by) the following:

Concept 4.1

1\ Adaptation	
2\ Structural adaptation 3\ (Physical adaptation)	
4\ Behavioral adaptation	
5\ Migration	
6\ Ecosystem	
7\ Biotic factors	
8\ Abiotic factors	
	Concept 4.2
9\ Soil	
10\ Minerals	
11\ Humus	
12\ Pore spaces (Pores)	
13\ Desertification	
14\ Habitat	

2 Choose The Correct Answer :

Concept 4.1

1. Dorcas gazelle lives in ……
   - ⓐ tropical area
   - ⓑ desert area.
   - ⓒ north pole.
   - ⓓ south pole.

2. The adaptation that is related to the body structure of a living organism, is known as …
   - ⓐ structural adaptation
   - ⓑ behavioral adaptation
   - ⓒ homeland
   - ⓓ stopover

3. Birds migrate to search for all of the following, except …
   - ⓐ best conditions for reproduction
   - ⓑ different food resources
   - ⓒ another suitable habitat
   - ⓓ another unsuitable climate

4. During their journey, migratory birds may suffer from all of the following conditions, except …
   - ⓐ many resting sites are available
   - ⓑ presence of predators
   - ⓒ shortage of food
   - ⓓ shortage of water

5 Photosynthesis process is affected by some environmental factors such as …
ⓐ availability of water only
ⓑ availability of light only
ⓒ availability of water and light
ⓓ the length of the plants

6 Each environment on planet Earth has specific ……
ⓐ climate only
ⓑ plants only
ⓒ animals only
ⓓ climate, plants and animals

7 The trait that helps Emperor penguin to keep its body warm, is the ……
ⓐ presence of thin fatty layer
ⓑ presence of thick fatty layer
ⓒ absence of feathers around its eyes
ⓓ absence of feathers around its body

8 Poison dart frog lives in the …… environment
ⓐ arctic
ⓑ Antarctic
ⓒ desert
ⓓ tropical rain forest

9 Arctic fox has …… to warm its body.
ⓐ colorful poisonous skin
ⓑ sandy-colored scales
ⓒ thin white fur
ⓓ thick white fur

10 Acacia tree and arctic fox live in ……
ⓐ desert environment
ⓑ arctic environment
ⓒ rain forest environment
ⓓ two different environments

11 Transferring of some properties from parents to offspring occurs in……
ⓐ living organisms only
ⓑ nonliving things only
ⓒ living organisms and nonliving things
ⓓ soil, air, water and sunlight

12 The genetic factors transfer from ……
ⓐ living organism to nonliving thing
ⓑ nonliving thing to living organism
ⓒ parents to their offspring
ⓓ offspring to their parents

13 Transferring of genetic factors happens in ……
ⓐ humans only
ⓑ animals only
ⓒ humans and animals
ⓓ humans, animals and plants

14 All the following are inherited traits in humans, except….
ⓐ eye color
ⓑ nose shape
ⓒ fur color
ⓓ ear shape

15 Appearance of inherited traits on offspring, is due to passing down …… from their parents

ⓐ environmental factors ⓑ behaviors
ⓒ genetic factors ⓓ leaves

16 Birman cats have……

ⓐ very fine hair ⓑ long and silky hair
ⓒ no hair ⓓ black feathers

17 Sphynx cats and Birman cats are different in the ……

ⓐ number of eyes ⓑ number of ears
ⓒ number of legs ⓓ presence of hair

18 All the following are inherited traits in plants, except ……

ⓐ leaves color ⓑ leaves shape
ⓒ length of stem ⓓ length of ears

19 Bad habits in humans lifestyle include ……

ⓐ eating healthy food ⓑ doing exercises
ⓒ drinking more soda ⓓ avoid smoking

20 Genes are tiny structures that found in ……

ⓐ the cell nucleus ⓑ the cell membrane
ⓒ the cell wall ⓓ mitochondria

21 All of the following are structural adaptations except ……

ⓐ size of plant leaves ⓑ direction of plant growth
ⓒ thorns on plant leaves ⓓ length of stem

22 All of the following lifestyles except. ……

ⓐ smoking ⓑ healthcare
ⓒ food system ⓓ practice the sports

Concept 4.2

23 Which of the following are from the inorganic ingredients in the soil?

ⓐ Rocks, air and water ⓑ Plants, animals and air
ⓒ Decomposers, plants and humus ⓓ Decomposers, air and water

24 All the following are from organic ingredients of soil, except. ……

ⓐ fungi ⓑ dead plants
ⓒ water ⓓ bacteria

25 Minerals are the building units of. ……
ⓐ air ⓑ plants
ⓒ water ⓓ rocks

26 The material rich in nutrients and increases the soil fertility is known as…
ⓐ decomposers ⓑ humus
ⓒ sand ⓓ water

27 Pore spaces of the soil are filled with …… …..or ,…….
ⓐ minerals - water ⓑ air - sand
ⓒ minerals - sand ⓓ water - air

28 Silt particles are larger than . and smaller than …….
ⓐ clay particles - sand particles ⓑ sand particles - clay particles
ⓒ big rocks - clay particles ⓓ sand particles - big rocks

29 There are…… between particles of the soil that contain ….or air.
ⓐ water-plants ⓑ pore spaces - water
ⓒ humus - animals ⓓ dead plants-dead animals

30 When the soil contains large amount of sand particles, the flow of water will ……
ⓐ not change ⓑ increase
ⓒ decrease ⓓ stop

31 The soil that retains medium amount of water becomes ……
ⓐ more fertile ⓑ less fertile
ⓒ unsuitable for planting ⓓ very dry

32 Silt soil contains…… particles and its color is ……
ⓐ large - yellow ⓑ medium - dark
ⓒ large - dark ⓓ medium-gray

33 Clay soil allows water to flow….. as it has…….pore spaces between its particles……
ⓐ fast-small ⓑ slowly-large
ⓒ slowly-small ⓓ fast-large

34 The size of particles of clay soil is ……
ⓐ larger than the particles of sand soil only.
ⓑ larger than the particles of sand and silt soils.
ⓒ smaller than the particles of sand soil only.
ⓓ smaller than the particles of sand and silt soils

35 ..... soil holds water well so, it becomes ..... most of the time .
ⓐ Sand-wet ⓑ Clay-wet
ⓒ Clay-dry ⓓ Silt-dry

36 Soil of humid areas retains ..... amount of water, due to increasing of.....
ⓐ small - precipitation ⓑ Large - precipitation
ⓒ small - evaporation ⓓ large-evaporation

37 Waterlogged soil contains.....amount of air and this doesn't help....to grow.
ⓐ large - animals ⓑ little- animals
ⓒ little-roots ⓓ large-flowers

38 Habitat destruction could happen due to.....
ⓐ natural changes only.
ⓑ human activities only.
ⓒ natural changes and human activities.
ⓓ overpopulation and increasing the green areas

39 Among the benefits of volcanic eruptions is that it can .....
ⓐ keep populations of animals to a suitable number.
ⓑ release seeds from closed fruits.
ⓒ help humans build factories to produce goods.
ⓓ make the soil more fertile.

40 All the following human activities can cause habitat destruction, except ..
ⓐ planting new crops in an area.
ⓑ turning natural spaces into factories and homes.
ⓒ deforestation to do different industries.
ⓓ destroying lands for making roads.

41 The change in climate leads to the ..... of some living organisms.
ⓐ increase ⓑ extinction
ⓒ reproduction ⓓ pollution

42 Overpopulation leads to the decrease in all of the following, except....
ⓐ food ⓑ water
ⓒ shelter ⓓ habitat destruction

43 When large predators disappear naturally from an area, the number of preys
ⓐ increases ⓑ decreases
ⓒ remains constant ⓓ becomes zero

44 Human activities like pollution and waste produced by humans led to the increase in …… gas percentage and …… in Earth's temperature.

ⓐ carbon dioxide - decrease ⓑ oxygen-increase
ⓒ carbon dioxide - increase ⓓ oxygen - decrease

45 ……is from the invasive species that are found in the Red Sea.

ⓐ Emperor penguin ⓑ Lionfish
ⓒ Poison dart frog ⓓ Lizard

46 Treatment of sewage water and reducing the amount of fertilizers help in..

ⓐ increasing air pollution.
ⓑ increasing soil pollution.
ⓒ increasing water pollution.
ⓓ decreasing water pollution.

47 From the reasons that increase water pollution is…….

ⓐ treatment of sewage and industrial water.
ⓑ getting rid of trash in correct ways.
ⓒ increasing the industries that use water.
ⓓ using soil fences and sedimentation ponds.

48 ……and …… are from the ways to reduce water pollution.

ⓐ Treatment of sewage water - increasing air pollution
ⓑ Using soil fences - keeping green areas
ⓒ Using a large amount of fertilizers - controlling air pollution
ⓓ Getting rid of trash in rivers - keeping green areas

49 Soil scientists and engineers hope to stop depending on traditional bricks and concrete because they……

ⓐ require a lot of energy only.
ⓑ produce a lot of pollution only.
ⓒ require less energy and produce a lot of pollution.
ⓓ require a lot of energy and produce a lot of pollution.

50 The manufacture of…… requires a lot of energy and produces a lot of pollution.

ⓐ bricks glue-like substance
ⓑ cement-glue-like substance
ⓒ bricks - cement
ⓓ glue-like substance - rocks

51 Soil can be made healthy by using……

ⓐ Pesticides ⓑ chemical fertilizers

ⓒ natural fertilizers ⓓ burning of organic matter

52 Which of the following does not cause desertification of soil?

ⓐ Drought ⓑ Cutting down trees

ⓒ regular irrigation ⓓ overgrazing

53 Each of the following factors lead to soil depletion except…

ⓐ Overgrazing ⓑ chemical fertilizers

ⓒ deforestation ⓓ decomposing organisms

3 Complete The Following Sentences :

Concept 4.1

1) Both of environmental factors and …… factors affect the growth of living organisms.
2) Thick fur is an example of structural adaptation for animals that live in …… climate.
3) Both of the …… Sea and the …… River are two important stopovers in Egypt for migratory birds.
4) Bird migration helps them to search for different …… sources and suitable …… to live in.
5) Emperor penguin lives in …… and it has a thick …… and its skin is covered with dense …… to keep its body warm.
6) African penguin has a circle of skin that doesn't have any …… around each of its eyes.
7) Some plants like palms and acacia trees live in the ……. environment in Egypt.
8) Some desert plants can store water in their …… and …….
9) Some desert plants have thick leaves to store …….
10) Some desert plants have …… on their stems and branches to protect them from herbivores.
11) Living organisms of an ecosystem include humans, animals and …….
12) Any ecosystem contains …… factors and …… factors.
13) Abiotic factor include all …… things.
14) Plants and …… live in the same ecosystem, depend on each other to live and reproduce.

15) Complete the following sentences using the words below:

Sphynx	Birman	plants	animals	genetic	environmental

1. A ..... kitten inherits the trait of long silky hair, while a ..... kitten inherits the trait of hairless body from its parents.
2. Genes determine the fur color in ..... and the flower color in .....
3. Availability of food, clean water and health care are examples of ..... Factors that affect our health, while ..... factors determine our body structures like hair color and eye color.

16) All living organisms inherited ..... factors which transferred from parents to their offspring.

17) The type of cats that inherits its hairless body from its parents, is known as ..... cats .

18) Sphynx cat doesn't have the genetic factor for ..... which is found in ..... cat .

19) Color and place of the flower are two ..... factors in plants.

20) The way of your earlobes hang and the length of your fingers are two ..... traits controlled by ..... that are found in the cell nucleus.

21) Air is considered one of the ..... factors.

22) Palm trees are adapted to .... in the desert.

23) Fish migration is considered one of the ..... adaptations.

24) Environmental factors that affect a living organism include ..... and .....

25) ..... adaptations of a living organism are related to its body structure.

26) The ..... – ..... is considered one of the reasons for birds returning to their habitat.

27) A ..... plant grows when the day is shorter than the night.

28) Light is one of the ..... factors.

29) The factors that affect the internal and external development of a human being a ....., ... and .....

30) The Sphinx cat and the Birman cat belong to the ..... cat breed.

31) Genes found in the ..... of the cell.

Concept 4.2

32) Types of soil differ from each other in ..... and .....

33) The soil is the shelter for many living organism such as ....., worms ..... and bacteria.

34) The soil is composed of many inorganic ingredients as ……, ……, …… and minerals.
35) The building units of rocks are called …….
36) The remains of dead plants and animals are decomposed into chemical nutrients such as …… nitrogen and …….
37) Organic material in the soil includes the remains of dead …… and …….
38) The spaces among the particles of the soil are called …… and they are filled with …… or …….
39) According to the size of particles in the soil, …… are the biggest particles while …… are the smallest particles.
40) Types of plants in the soil affect the …… conditions of the ecosystem.
41) During rainfall, the soil of humid areas retain …… mount of water.
42) When water level increases in some humid areas it become …… contains a little amount of …….
43) Sand soil is …… loose soil, so large trees can't grow in it.
44) Savannas are dry …… ecosystems that contain ……
45) Herbivores like gazelles can live in …… ecosystem that has grasses and small plants.
46) Increasing the inclination of the land leads to the increase of …… process of the soil.
47) The land becomes infertile due to …… drought or overgrazing that cause …….
48) Overuses of …… and …… cause depletion of the soil.
49) Natural habitats include desert, ……, …… oceans and …….
50) From natural changes that cause habitat destruction are ……, fires, …… and volcanic eruptions.
51) Human activities cause the increase in …… gas percentage and lead to the increase in Earth's …….
52) Changing natural spaces as hills, prairies and valleys into factories led to …….
53) To reduce water pollution we have to keep green areas, and treat …… and industrial water.
54) Using soil fences and …… ponds help in reducing …… pollution.

55) Soil scientists hope to stop using ..... bricks and concrete that are used in building houses.
56) To produce traditional bricks and cement, a lot of ..... is required and a lot of ..... is produced.
57) The glue-like substance that is used to bind building materials together is formed by the ..... change of the .....
58) Engineers used the glue-like substance to ..... build homes instead of ..... bricks.
59) ....., ... and ..... are from the biotic soil ingredients.
60) The clay soil particles ..... in size.
61) The process of moving rocks from one place to another is known as .....
62) Silt soil are ..... in size.
63) ..... and ..... are from the basic processes in soil formation.
64) ..... are the remains of organisms that have died and decayed.
65) Sand soils are characterized by ..... fertility
66) Rocks are broken up into smaller and smaller pieces through the process of .....
67) Inorganic ingredients of the soil are ..... - ..... - .....
68) It is available in the natural habitat ....., ... and ..... as essential resources for the survival of living organisms.
69) One of the advantages of using sustainable soil ..... and .....
70) Natural factors that increase soil fertility .....
71) One of the ways to preserve the soil ..... and ....
72) One of the factors that lead to the destruction of natural habitat by humans ..... – .....
73) When plants and animals are unable to adapt, they may face the risk of .....
74) To reduce water pollution resulting from the overpopulation and industries .....
75) From the factors that lead to increasing soil erosion ..... - ....
76) Fertility can be restored to the soil by adding .....

4 Write Scientific Term:

Concept 4.1

1) An important stopover in Egypt for migratory birds, that includes marine, coastal and mountain environments. (……)
2) It is a change in the behaviors or acts of a living organism to help it survive. (……)
3) Behaviors that living organisms inherit due to the effect of genetic factors. (……)
4) Behaviors that living organisms get due to the effect of environmental factors. (……)
5) It contains biotic factors and abiotic factors that interact with each other. (……)
6) The factors that include living organisms in an ecosystem. (……)
7) The factors that include nonliving things in an ecosystem. (……)
8) It is a desert biome that has a cold climate all the year. (……)
9) It is the factor that controls which trait get inherited from parents to their offspring. (……)
10) They are responsible for determining the body feature, and present in the cell nucleus. (……)
11) Traits that play an important role in determining the shape and structure of an organism.(……)
12) The process by which a living organism becomes capable of living in an environment in a way that enables its survival.(……)
13) An organelle in the cell responsible for reproduction and building special information about the cell. (……)

Concept 4.2

14) The loose delicate layer of the earth. (……)
15) Spaces between soil particles filled with water or air .(……(……))
16) A type of soil characterized by its large sized (……)
17) Organic components rich in nutrient produced by the decomposition of dead organisms. (……)
18) Poorly aerated soil and it has small grains. (……)

19) It is a place where living organisms live and where water, food, and shelter are available. (.....)

20) It is the depletion of one of the natural resources provided by the habitat or taking it completely. (.....)

21) Species of organisms that enter the ecosystem and cause disruption (.....)

5 Give Reasons For :

Concept 4.1

1\ Small dorcas gazelle is similar to its parents.

.....

2\ Falcons and eagles migrate to Egypt in winter.

.....

3\ Birds migrate from one place to another place.

.....

4\ African penguin has a circle of skin that doesn't have any feathers around each of its eyes.....

5\ Most of desert plants have short extended roots near Earth's surface.

.....

6\ A birman kitten has a long and silky hair.

.....

7\ Sphynx cat doesn't have long hair.

.....

8\ Your lifestyle choices affect your health.

.....

9\ Plants manage to adapt to warm and dry climates?

.....

10\ Some plants have long roots ?

.....

11\ The length and texture of cats' hair vary for the same breed.

.....

Concept 4.2

12\ Composition of soil differs from one place to another on Earth's surface.

.....

13\ Soil is very important for plants.

.....

14\ Importance of humus for soil and plants.

.....

15\ Water can flow very fast through sand soil.

.....

16\ The soil that retains medium amount of water is more fertile.

.....

17\ Clay soil can retain more amount of water.

.....

18\ Large trees can't grow in savannas grassland ecosystems.

.....

19\ The soil in a bog ecosystem is wet most of the time.

.....

20\ The increase in the inclination of the land causes the erosion of the soil.

.....

21\ Scientists and farmers should use crop remains like straw and stem in the soil.

.....

22\ Desertification process increases recently.

.....

23\ Forest fires may have some benefits.

.....

24\ We should keep green areas and reduce the amount of fertilizers.

.....

25\ Soil scientists and engineers hope to stop using traditional bricks and concrete in building houses.

.....

26\ The type of soil vary from one environment to another.

.....

27\ Decomposers are considered environmental cleaner?

.....

28\ Over population may cause the destruction of natural habitats.

.....

29\ Plants and animals depend on the soil.

.....

30\ Adding sand and silt helps in the soil restoration.

.....

6 What Happens To :

Concept 4.1

1) If the environmental conditions change in the homeland in which some migratory birds live.

.....

2) To the living organisms in an ecosystem, if water and light are not available.

.....

3) To the plants in an ecosystem, if they receive too intense light.

.....

4) To two similar plants, if they are exposed to the same intensity andduration of light.

.....

5) If African penguin has dense feathers around each of its eyes.

.....

6) If arctic fox has a thin fur instead of a thick fur.

.....

7) If arctic fox has a black fur instead of a white fur.

.....

8) If the genetic factor of hairless body trait is transferred from sphynx cats parents to their offspring.

.....

9) If the poison dart frog doesn't have big eyes.

.....

10) If the Arctic fox does not have a thick fur.

.....

11) When a green plant is placed away from the source of sunlight (in terms of growth direction) ?

.....

12) Healthcare services are not available in some places.

.....

Concept 4.2

13) The plants if the soil becomes unhealthy.

.....

14) The soil if the temperature in the environment increases.

.....

15) The soil if it does not contain any decomposer organisms.

.....

16) The rocks if they are affected by weathering process.

.....

17) The soil if it has large amount of pore spaces between its particles.

.....

18) The soil fertility if the soil hold medium amount of water.

.....

19) The soil when there is much water in a humid area.

.....

20) The soil when fertile agricultural lands are converted into factories or pastures.

.....

21) The soil when farmers increase the planted areas.

.....

22) The habitat when the number of predators decreases.

.....

23) Living organisms to stay alive if they are affected by the change in their habitates due to climate change.

.....

24) The sea water if industrial water is thrown into the sea without treatment.

.....

25) If the soil particles is large in size.

.....

26) For organisms if resources are scarce in an area?

.....

27) Materials are burned under extremely high temperatures using large amounts of coal? .....

7 Put ✓ Or ✗ :

Concept 4.1

1\ It is easy for animals to live in the desert environments. ( )

2\ Thorns on a plant stem, is an example of structural adaptation. ( )

3\ Some animals migrate from one place to another seasonally. ( )

4\ Birds migrate to areas that have no food or water. ( )

5\ Dorcas gazelle can live in both desert area and semidesert area. ( )

6\ Availability of water is a genetic factor that affects the growth of trees and shrubs in an ecosystem. ( )

7\ Different types of environments have different types of plants and animals. ( )

8\ Around each eye of an Emperor penguin, there is a circle of skin that doesn't have any feathers. ( )

9\ Acacia trees and palms are adapted to live in desert environment. ( )

10\ When the rain falls in desert environment, some plants reach the flowering stage quickly. ( )

11\ Ecosystems include living organisms only. ( )

12\ Ecosystems contain biotic factors and abiotic factors. ( )

13\ Abiotic factors of an ecosystem can eat, breathe and grow. ( )

14\ Biotic factors of an ecosystem include sunlight, air and water. ( )

15\ All living organisms inherited traits from their parents. ( )

16\ Inherited traits don't affect the structure of living organisms. ( )

17\ Sphynx cat doesn't have any hair or have only very fine hair. ( )

18\ All Birman cats have white, very short and silky hair. ( )

19\ There is no Sphynx cat has long hair like Birman cat. ( )

20\ Transferring of inherited traits through generations of desert plants, make them more adapted to survive in extreme desert conditions. ( )

21\ Inherited traits in Sphynx cats include hairless body, eye color and ear shape. ( )

22\ Environmental and genetic factors affect the behaviors, structure and the growth of living organisms. ( )

Concept 4.2

23\ Clay soil has a gray color while sand soil has a yellow color. ( )

24\ Clay soil retains more amount of water than sand soil. ( )

25\ The size of sand particles is smaller than that of silt particles. ( )

26\ Water flows through sand soil faster than in clay soil. ( )

27\ Soils differ in their color and their ability to hold water. ( )

28\ The climate doesn't affect the types of plants that can grow in an area. ( )

29\ Humid areas retain large amount of water during rainfall. ( )

30\ Healthy soil is very important to keep the life on Earth. ( )

31\ Converting fertile agricultural lands into cities leads to increase the deforestation of the land. ( )

32\ The soil can't be restored again. ( )

33\ Adding natural fertilizers like animal manure to the soil help in soil restoration. ( )

34\ When the soil is irrigated regularly, the quality of the crops will increase. ( )

35\ Removing plants leads to the soil erosion. ( )

36\ Human activities only lead to habitat destruction. ( )

37\ Streams and oceans are examples of natural habitats. ( )

38\ Cleaning up water from pollution is more effective than preventing it. ( )

39\ To build traditional bricks, we need a lot of energy. ( )

40\ Depending on traditional bricks and concrete causes harms for the environment. ( )

41\ The glue-like substance that is used in binding materials together is formed from the chemical change of the topsoil. ( )

42\ The subsoil that is used for agriculture, is used to make the glue-like building material. ( )

43\ Genetic factors help the Dorcas gazelle to withstand high temperatures. ( )

44\ Minerals are organic ingredients in the soil. ( )

45\ All the soil ingredients can be seen. ( )

46\ Lifestyles do not affect human growth. ( )

47\ Soil fertility increases as the amount of organic matter in it increases. ( )

48\ All agricultural crops can be grown in the desert environment. ( )

49\ The shape and behavior of living organisms vary according to their habitat and the type of food they depend on. ( )

8 Match The Following

Concept 4.1

1) Choose from column (b) what suits it in column (A):

(A)	(B)	
1. Structural adaptation 2. Behavioral adaptation 3. Bird migration 4. Thorns on a plant stem	ⓐ	is an example of structural adaptation.
	ⓑ	like growth of plant toward light.
	ⓒ	is an ecosystem.
	ⓓ	like thick fur of animals that live in cold areas.
	ⓔ	is an example of behavioral adaptation.

1\" ..... " 2\ " ..... " 3\ " ..... " 4\"....."

2) Choose from column (B) what suits it in column (A):

(A)	(B)	
1. Acacia tree 2. Poison dart frog 3. Emperor penguin 4. Arctic fox	ⓐ	It has sandy-colored scales.
	ⓑ	It has thick white fur.
	ⓒ	It lives in Antarctic.
	ⓓ	It lives in desert.
	ⓔ	It lives in tropical rain forest.

1\" ..... " 2\ " ..... " 3\ " ..... " 4\"....."

9 Compare Between :

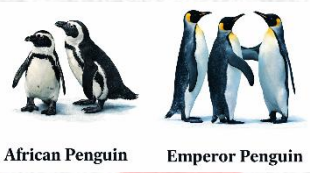
Concept 4.1

1) Compare the African penguin and the emperor penguin in terms of:

1- Habitat:

2- Temperature:

3- Structural adaptations:



African Penguin Emperor Penguin

2) Compare the Sphynx cat and the Birman cat in terms of:

1. Hair 2. Gene

10 Various Questions :

Concept 4.1

(1) Study the following two pictures, then answer the following questions: (A) Put (o) or (X):



Picture (A)



Picture (B)

1. Animals in both pictures need food, water and habitat to survive. ( )

2. The animal in picture (B) has a body color helps it to survive in its desert environment. ( )

3. Animals in both pictures have a body size similar to its parents. ( )

(B) If you know that the bird in picture (A) is a migratory bird, write 2 reasons for its migration:

a. ..... b. .....

(2) Classify the following examples of adaptation in animals into structural and behavioral adaptations:

strong sense of smell	move in groups	walk on two legs	have sharp teeth	migration every year

(A) Structural adaptation: .....(B) Behavioral adaptation: .....

(3) Study the following pictures, then put (✓) or (✗):



(1) (2) (3) (4)

1. The four pictures show some biotic factors that live in three different environments. ( )

2. The animal in picture number (2) lives in an environment that suffers from shortage of water, while the environment in which the animal in picture number (3) lives has a lot of water. ( )

3. Animals in pictures number (2) and (4) can't live in the same environment, while living organisms in pictures number (1) and (3) can live in the same environment. ( )

4. Caribou can live in the same environment in which the animal in picture number (4) lives. ( )

(4) Look at the picture then answer:



Steppe eagle

1- Seasonal migration is a ..... adaptation.

2- Steppe eagles migrate with the aim of ..... and .....

3- The steppe eagle has a sharp and strong beak, and this is a ..... adaptations .

4- The steppe eagle has structural adaptations such as ..... that help it fly long distances.

(5) **How do genetic factors affect the growth of living organisms?**

....

(6) Read the following statements then correct the incorrect ones:

1- Fur color is considered a structural adaptation. (.....)

2- The size of an organism's natural habitat does not affect its growth. (.....)

3- The size of an organism is a characteristic that is not affected by genetic factors. (.....).

4- An unhealthy environment positively affects human life.
(.....)

5- Height and skin color are considered abiotic factors that affect human life.
(.....)

6- Hums increases soil fertility. (.....)

7-Water is one of the basic ingredients of soil. (.....)

8- The soil consists of a mixture of organic matter only. (.....)

9- The large sized particles in the soil make it more water-retaining. (.....)

10- One of the characteristics of sandy soils is its large sized particles and low water retention. (.....)

11-Climate does not affect soil properties. (.....)

12-Removing vegetation keeps the soil from erosion. (.....)

13-The entry of invasive organisms into the natural habitat has a positive effect. (.....)

14- A natural habitat is a place where living organisms live and their needs are met.(.....)

(7) Identify the type of factor (genetic-environmental- lifestyle):

1- Smoking practice .....

2- Availability of hospitals .....

3-Length of hand fingers .....

Concept 4.2

(8) Look at the following figure then complete the following sentences using the words below:

(worms-water-minerals - soil-bacteria- remains of dead plants)



1. This layer that covers Earth's crust is called .....
2. This layer contains organic ingredients like .....and .....inorganic ingredients like .....and .....
3. Decomposers break down the ..... that are found in this layer that increase its fertility.

(9) Look at the following figures that represent particles of different types of soil, then answer the following questions:

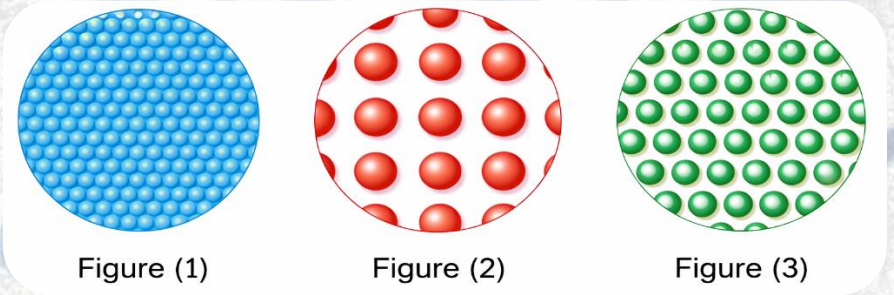


Figure (1) Figure (2) Figure (3)

(A) Choose:

1. Figure (1) represents .....soil. (sand - silt - clay)
2. Figure : Figure (.....) retains small amount of water. (1-2-3)

Figure (3)

(B) Put (✓) or (X):

1. Figure (2) represents yellow sand soil. (.....)
2. Figure (3) is more fertile than figure (1). (.....)
3. Soil in figure (1) allows very large amount of water to flow through its particles. (.....)

(10) Look at the opposite figure then choose the correct answer:

1..... is the type of soil that is found in this ecosystem.

a. Sand b. Silt c. Clay

2. The moist conditions in this ecosystem, lead to.....temperature.

a. very hot b. very cool c. hot

3. The animals that live in this ecosystem are.....

a. lions and cheetahs. b. frogs and mosquitos.

c. gazelles and zebras.



Bog ecosystem

(11) Classify the following activities into natural activities and human activities that lead to habitat destruction:

Hurricanes	*Floods*	*Building houses*	*Destructive earthquakes*	*Making road and airport runways*

Natural activities	Human activities
.....	.....
.....	.....
.....	.....

(12) Look at the opposite picture, then complete the following sentences using the words below:

overgrazing	*desertification*	*straw*	*deserts*	*animals manure*	*infertile*	*stems*	*deforestation*

1. The opposite picture shows the occurrence of .....process, that happens when the soil becomes .....and turns into .....

2. Among the reasons for occurrence of this process are ....., drought or .....

3. To restore this soil, farmers should use crop remains such as .....and .....or use natural fertilizers such as .....



(13) Look at the opposite photo then answer:

(A) Put (✓) or (X):

1. Human activities increase water pollution. (_)

2. Air pollution can cause water pollution. (__)

3. Using large amounts of fertilizers reduce water pollution. (_)



(B) Complete:

1. To reduce water pollution we have to treat .....and .....water before throwing them into any water body.
2. Using .....fences and .....ponds decrease water pollution.

(14) Look at the following picture, then complete the following sentences using the words below:

pollution	*chemical*	*traditional bricks*	*subsoil*	*glue-like substance*



1. This building material is called .....
2. The process of making this building material can cause .....that damage the environment.
3. Scientists tend to use .....instead of this building material, which is made by .....change of .....that beneath the topsoil.

(15) The stages of soil formation start with:

Weathering ⇒ ..... ⇒ .....

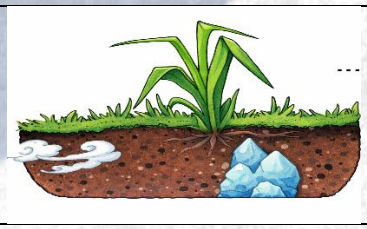
Notice the following picture then answer

a- Organic ingredients in soil such as insects and worms (True - False)

b- Soil contains particles .....of .....and .....

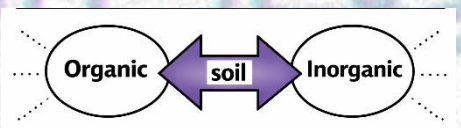
c- Environmental cleaner that decomposes dead organisms called .....

Complete: Soil ingredients:

....	

Complete the following chart:

- .....
- .....
- .....



- .....
- .....
- .....

(16) Soil is considered one of the ingredients of the lithosphere of the Earth planet.

*Identify the importance of soil for both humans, animals, and plants:

The importance of soil		
For human	For plants	For animals
.....	.....	.....
.....	.....	.....

(17) Choose the odd word :

1- Sand - humus - clay - silt.

2- Wide eye - plant height - swimming skill - skin color.

3- Air - water - decomposing organisms - rocks.

4- Sunlight - Precipitation - Temperature - Insects.

(18) What is meant by soil? Mention its components and what is the importance of soil for plants?

-.....

-.....

-.....

-.....

-.....

(19) Compare between sandy soils and clay soils in terms of particles size and cohesion:

Type of soil	Size of particles	Cohesion
Sandy soil	.....	.....
Clay soil	.....	.....

مراجعات النخبة

مراجعات النـــخبة

Science April Review
2026

Answer form

Science



6th
Primary
Second Term

Prepared by:
Ms/ Mariam Ragab

SCAN ME

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1 Define (what is meant by) the following:

Concept 4.1

1\ Adaptation	It is the process that helps living organisms to survive in the environment in which they live.
2\ Structural adaptation 3\ (Physical adaptation)	It is the adaptation that is related to the body structure of a living organism to help it survive.
4\ Behavioral adaptation	It is a change in the behaviors or acts of a living organism to help it survive.
5\ Migration	It is considered a behavioral adaptation in which animals move from one place to another seasonally.
6\ Ecosystem	It is an area that contains living organisms (biotic factors) and nonliving things (abiotic factors) that interact with each other.
7\ Biotic factors	They are living organisms in an ecosystem such as humans, animals and plants.
8\ Abiotic factors	They are nonliving things in an ecosystem such as sunlight, air, water, soil, temperature and precipitation.
	Concept 4.2
9\ Soil	It is the loose layer (delicate skin) which covers Earth's crust.
10\ Minerals	They are the building units (blocks) of rocks.
11\ Humus	It is an organic material that is rich in nutrients produced from decomposition of dead organisms.
12\ Pore spaces (Pores)	They are spaces among the particles of the soil filled with water or air.
13\ Desertification	It is a process by which the land becomes infertile and turns into deserts.
14\ Habitat	It is a place where living organisms live and it provides them with their basic needs.

2 Choose The Correct Answer :

Concept 4.1

1 Dorcas gazelle lives in ……
ⓐ tropical area ⓑ desert area.
ⓒ north pole. ⓓ south pole.

2 The adaptation that is related to the body structure of a living organism, is known as …
ⓐ structural adaptation ⓑ behavioral adaptation
ⓒ homeland ⓓ stopover

3 Birds migrate to search for all of the following, except …
ⓐ best conditions for reproduction ⓑ different food resources
ⓒ another suitable habitat ⓓ another unsuitable climate

4 During their journey, migratory birds may suffer from all of the following conditions, except …
ⓐ many resting sites are available ⓑ presence of predators
ⓒ shortage of food ⓓ shortage of water

5 Photosynthesis process is affected by some environmental factors such as …
ⓐ availability of water only ⓑ availability of light only
ⓒ availability of water and light ⓓ the length of the plants

6 Each environment on planet Earth has specific ……
ⓐ climate only ⓑ plants only
ⓒ animals only ⓓ climate, plants and animals

7 The trait that helps Emperor penguin to keep its body warm, is the ……
ⓐ presence of thin fatty layer
ⓑ presence of thick fatty layer
ⓒ absence of feathers around its eyes
ⓓ absence of feathers around its body

8 Poison dart frog lives in the …… environment
ⓐ arctic ⓑ Antarctic
ⓒ desert ⓓ tropical rain forest

9 Arctic fox has …… to warm its body.
ⓐ colorful poisonous skin ⓑ sandy-colored scales
ⓒ thin white fur ⓓ thick white fur

10 Acacia tree and arctic fox live in ……
ⓐ desert environment ⓑ arctic environment
ⓒ rain forest environment ⓓ two different environments

11 Transferring of some properties from parents to offspring occurs in……
ⓐ living organisms only ⓑ nonliving things only
ⓒ living organisms and nonliving things ⓓ soil, air, water and sunlight

12 The genetic factors transfer from ……
ⓐ living organism to nonliving thing
ⓑ nonliving thing to living organism
ⓒ parents to their offspring
ⓓ offspring to their parents

13 Transferring of genetic factors happens in ……
ⓐ humans only ⓑ animals only
ⓒ humans and animals ⓓ humans, animals and plants

14 All the following are inherited traits in humans, except….
ⓐ eye color ⓑ nose shape
ⓒ fur color ⓓ ear shape

15 Appearance of inherited traits on offspring, is due to passing down …… from their parents
ⓐ environmental factors ⓑ behaviors
ⓒ genetic factors ⓓ leaves

16 Birman cats have……
ⓐ very fine hair ⓑ long and silky hair
ⓒ no hair ⓓ black feathers

17 Sphynx cats and Birman cats are different in the ……
ⓐ number of eyes ⓑ number of ears
ⓒ number of legs ⓓ presence of hair

18 All the following are inherited traits in plants, except ……
ⓐ leaves color ⓑ leaves shape
ⓒ length of stem ⓓ length of ears

19 Bad habits in humans lifestyle include ……
ⓐ eating healthy food ⓑ doing exercises
ⓒ drinking more soda ⓓ avoid smoking

20 Genes are tiny structures that found in ……
ⓐ the cell nucleus ⓑ the cell membrane
ⓒ the cell wall ⓓ mitochondria

21 All of the following are structural adaptations except ……
ⓐ size of plant leaves ⓑ direction of plant growth
ⓒ thorns on plant leaves ⓓ *length of stem*

22 All of the following lifestyles except. ……
ⓐ smoking ⓑ healthcare
ⓒ food system ⓓ practice the sports

Concept 4.2

23 Which of the following are from the inorganic ingredients in the soil?
ⓐ Rocks, air and water ⓑ Plants, animals and air
ⓒ Decomposers, plants and humus ⓓ Decomposers, air and water

24 All the following are from organic ingredients of soil, except. ……
ⓐ fungi ⓑ dead plants
ⓒ water ⓓ bacteria

25 Minerals are the building units of. ……
ⓐ air ⓑ plants
ⓒ water ⓓ rocks

26 The material rich in nutrients and increases the soil fertility is known as…
ⓐ decomposers ⓑ humus
ⓒ sand ⓓ water

27 Pore spaces of the soil are filled with …… ……or ,…….
ⓐ minerals - water ⓑ air - sand
ⓒ minerals - sand ⓓ water - air

28 Silt particles are larger than . and smaller than …….
ⓐ clay particles - sand particles ⓑ sand particles - clay particles
ⓒ big rocks - clay particles ⓓ sand particles - big rocks

29 There are……. between particles of the soil that contain ….or air.
ⓐ water-plants ⓑ pore spaces - water
ⓒ humus - animals ⓓ dead plants-dead animals

30 When the soil contains large amount of sand particles, the flow of water will ……..

ⓐ not change ⓑ increase

ⓒ decrease ⓓ stop

31 The soil that retains medium amount of water becomes ……..

ⓐ more fertile ⓑ less fertile

ⓒ unsuitable for planting ⓓ very dry

32 Silt soil contains……. particles and its color is ……..

ⓐ large - yellow ⓑ medium - dark

ⓒ large - dark ⓓ medium-gray

33 Clay soil allows water to flow….. as it has…….pore spaces between its particles……

ⓐ fast-small ⓑ slowly-large

ⓒ slowly-small ⓓ fast-large

34 The size of particles of clay soil is ……

ⓐ larger than the particles of sand soil only.

ⓑ larger than the particles of sand and silt soils.

ⓒ smaller than the particles of sand soil only.

ⓓ smaller than the particles of sand and silt soils

35 ……. soil holds water well so, it becomes …….. most of the time .

ⓐ Sand-wet ⓑ Clay-wet

ⓒ Clay-dry ⓓ Silt-dry

36 Soil of humid areas retains ……. amount of water, due to increasing of…..

ⓐ small - precipitation ⓑ Large - precipitation

ⓒ small - evaporation ⓓ large-evaporation

37 Waterlogged soil contains…..amount of air and this doesn't help….to grow.

ⓐ large - animals ⓑ little- animals

ⓒ little-roots ⓓ large-flowers

38 Habitat destruction could happen due to……..

ⓐ natural changes only.

ⓑ human activities only.

ⓒ natural changes and human activities.

ⓓ overpopulation and increasing the green areas

39 Among the benefits of volcanic eruptions is that it can ……..
ⓐ keep populations of animals to a suitable number.
ⓑ release seeds from closed fruits.
ⓒ help humans build factories to produce goods.
ⓓ make the soil more fertile.

40 All the following human activities can cause habitat destruction, except ..
ⓐ planting new crops in an area.
ⓑ turning natural spaces into factories and homes.
ⓒ deforestation to do different industries.
ⓓ destroying lands for making roads.

41 The change in climate leads to the ……. of some living organisms.
ⓐ increase ⓑ extinction
ⓒ reproduction ⓓ pollution

42 Overpopulation leads to the decrease in all of the following, except….
ⓐ food ⓑ water
ⓒ shelter ⓓ habitat destruction

43 When large predators disappear naturally from an area, the number of preys
ⓐ increases ⓑ decreases
ⓒ remains constant ⓓ becomes zero

44 Human activities like pollution and waste produced by humans led to the increase in …… gas percentage and …… in Earth's temperature.
ⓐ carbon dioxide - decrease ⓑ oxygen-increase
ⓒ carbon dioxide - increase ⓓ oxygen - decrease

45 ……is from the invasive species that are found in the Red Sea.
ⓐ Emperor penguin ⓑ Lionfish
ⓒ Poison dart frog ⓓ Lizard

46 Treatment of sewage water and reducing the amount of fertilizers help in..
ⓐ increasing air pollution.
ⓑ increasing soil pollution.
ⓒ increasing water pollution.
ⓓ decreasing water pollution.

47 From the reasons that increase water pollution is…….
ⓐ treatment of sewage and industrial water.
ⓑ getting rid of trash in correct ways.
ⓒ increasing the industries that use water.
ⓓ using soil fences and sedimentation ponds.

48 ……and …… are from the ways to reduce water pollution.
ⓐ Treatment of sewage water - increasing air pollution
ⓑ Using soil fences - keeping green areas
ⓒ Using a large amount of fertilizers - controlling air pollution
ⓓ Getting rid of trash in rivers - keeping green areas

49 Soil scientists and engineers hope to stop depending on traditional bricks and concrete because they……
ⓐ require a lot of energy only.
ⓑ produce a lot of pollution only.
ⓒ require less energy and produce a lot of pollution.
ⓓ require a lot of energy and produce a lot of pollution.

50 The manufacture of…… requires a lot of energy and produces a lot of pollution.
ⓐ bricks glue-like substance
ⓑ cement-glue-like substance
ⓒ bricks - cement
ⓓ glue-like substance - rocks

51 Soil can be made healthy by using……
ⓐ Pesticides ⓑ chemical fertilizers
ⓒ natural fertilizers ⓓ burning of organic matter

52 Which of the following does not cause desertification of soil?
ⓐ Drought ⓑ Cutting down trees
ⓒ regular irrigation ⓓ overgrazing

53 Each of the following factors lead to soil depletion except…
ⓐ Overgrazing ⓑ chemical fertilizers
ⓒ deforestation ⓓ decomposing organisms

3 Complete The Following Sentences :

Concept 4.1

1) Both of environmental factors and genetic factors affect the growth of living organisms.
2) Thick fur is an example of structural adaptation for animals that live in cold climate.
3) Both of the Red Sea and the Nile River are two important stopovers in Egypt for migratory birds.
4) Bird migration helps them to search for different food sources and suitable habitats to live in.
5) Emperor penguin lives in Antarctic and it has a thick fatty layer and its skin is covered with dense feathers to keep its body warm.
6) African penguin has a circle of skin that doesn't have any feathers around each of its eyes.
7) Some plants like palms and acacia trees live in the desert environment in Egypt.
8) Some desert plants can store water in their leaves and stems.
9) Some desert plants have thick leaves to store water.
10) Some desert plants have thorns on their stems and branches to protect them from herbivores.
11) Living organisms of an ecosystem include humans, animals and plants .
12) Any ecosystem contains biotic factors and abiotic factors.
13) Abiotic factor include all nonliving things.
14) Plants and animals live in the same ecosystem, depend on each other to live and reproduce.
15) Complete the following sentences using the words below:

Sphynx	Birman	plants	animals	genetic	environmental

1. A Birman kitten inherits the trait of long silky hair, while a Sphynx kitten inherits the trait of hairless body from its parents.
2. Genes determine the fur color in animals and the flower color in plants .
3. Availability of food, clean water and health care are examples of environmental Factors that affect our health, while genetic factors determine our body structures like hair color and eye color.

16) All living organisms inherited genetic factors which transferred from parents to their offspring.

17) The type of cats that inherits its hairless body from its parents, is known as Sphynx cats .
18) Sphynx cat doesn't have the genetic factor for long hair which is found in Birman cat .
19) Color and place of the flower are two genetic factors in plants.
20) The way of your earlobes hang and the length of your fingers are two inherited traits controlled by genes that are found in the cell nucleus.
21) Air is considered one of the Abiotic factors.
22) Palm trees are adapted to Hard condition (hot and dry) in the desert.
23) Fish migration is considered one of the Behavioral adaptations.
24) Environmental factors that affect a living organism include Amount of light and Habitat size
25) Structural adaptations of a living organism are related to its body structure.
26) The Suitable new habitat – breeding is considered one of the reasons for birds returning to their habitat.
27) A chrysanthemum plant grows when the day is shorter than the night.
28) Light is one of the environmental factors.
29) The factors that affect the internal and external development of a human being a genetic factors , environmental factors and lifestyle .
30) The Sphinx cat and the Birman cat belong to the Felis catus cat breed.
31) Genes found in the nucleus of the cell.

Concept 4.2

32) Types of soil differ from each other in color and texture .
33) The soil is the shelter for many living organism such as insects , worms fungi and bacteria.
34) The soil is composed of many inorganic ingredients as air , water , rocks and minerals.
35) The building units of rocks are called minerals .
36) The remains of dead plants and animals are decomposed into chemical nutrients such as carbon nitrogen and oxygen .
37) Organic material in the soil includes the remains of dead plants and animals.
38) The spaces among the particles of the soil are called pore spaces and they are filled with water or air .
39) According to the size of particles in the soil, sand are the biggest particles while clay are the smallest particles.

40) Types of plants in the soil affect the temperature weather conditions of the ecosystem.
41) During rainfall, the soil of humid areas retain large mount of water.
42) When water level increases in some humid areas it become waterlogged contains a little amount of air .
43) Sand soil is dry loose soil, so large trees can't grow in it.
44) Savannas are dry grassland ecosystems that contain sand
45) Herbivores like gazelles can live in savannah ecosystem that has grasses and small plants.
46) Increasing the inclination of the land leads to the increase of erosion process of the soil.
47) The land becomes infertile due to deforestation drought or overgrazing that cause desertification .
48) Overuses of pesticides and chemical fertilizers cause depletion of the soil.
49) Natural habitats include desert, forest , stream oceans and grassland .
50) From natural changes that cause habitat destruction are hurricanes , fires, floods and volcanic eruptions.
51) Human activities cause the increase in carbon dioxide gas percentage and lead to the increase in Earth's temperature .
52) Changing natural spaces as hills, prairies and valleys into factories led to deforestation .
53) To reduce water pollution we have to keep green areas, and treat sewage and industrial water.
54) Using soil fences and sedimentation ponds help in reducing water pollution.
55) Soil scientists hope to stop using traditional bricks and concrete that are used in building houses.
56) To produce traditional bricks and cement, a lot of energy is required and a lot of pollution is produced.
57) The glue-like substance that is used to bind building materials together is formed by the chemical change of the subsoil
58) Engineers used the glue-like substance to sustainable build homes instead of traditional bricks.
59) Human , animals and plants are from the biotic soil ingredients.
60) The clay soil particles Small in size.

61) The process of moving rocks from one place to another is known as erosion .
62) Silt soil are Medium in size.
63) Weathering and erosion are from the basic processes in soil formation.
64) Humus are the remains of organisms that have died and decayed.
65) Sand soils are characterized by low fertility
66) Rocks are broken up into smaller and smaller pieces through the process of weathering .
67) Inorganic ingredients of the soil are Air - water - Rocks and minerals .
68) It is available in the natural habitat Food , water and shelter as essential resources for the survival of living organisms.
69) One of the advantages of using sustainable soil improving the soil and conservation
70) Natural factors that increase soil fertility humus
71) One of the ways to preserve the soil planting trees and crop rotation .
72) One of the factors that lead to the destruction of natural habitat by humans deforestation – pollution .
73) When plants and animals are unable to adapt, they may face the risk of Extinction
74) To reduce water pollution resulting from the overpopulation and industries Treat wastewater
75) From the factors that lead to increasing soil erosion Removing plants - increasing inclination of land .
76) Fertility can be restored to the soil by adding nutrients (crop remain - Natural fertilizers)

4 Write Scientific Term:

Concept 4.1

1) An important stopover in Egypt for migratory birds, that includes marine, coastal and mountain environments. (The Red Sea)
2) It is a change in the behaviors or acts of a living organism to help it survive. (Behavioral adaptation)
3) Behaviors that living organisms inherit due to the effect of genetic factors. (Inherited behaviors)
4) Behaviors that living organisms get due to the effect of environmental factors. (Acquired behaviors)

5) It contains biotic factors and abiotic factors that interact with each other. (Ecosystem)
6) The factors that include living organisms in an ecosystem. (Biotic factors)
7) The factors that include nonliving things in an ecosystem. (Abiotic factors)
8) It is a desert biome that has a cold climate all the year. (Antarctic region)
9) It is the factor that controls which trait get inherited from parents to their offspring. (Genetic factor)
10) They are responsible for determining the body feature, and present in the cell nucleus. (Genes)
11) Traits that play an important role in determining the shape and structure of an organism. (Hereditary traits)
12) The process by which a living organism becomes capable of living in an environment in a way that enables its survival. (adaptation)
13) An organelle in the cell responsible for reproduction and building special information about the cell. (nucleus)

Concept 4.2

14) The loose delicate layer of the earth. (The Soil)
15) Spaces between soil particles filled with water or air .(Pore spaces (Pores))
16) A type of soil characterized by its large sized (Sand Soil)
17) Organic components rich in nutrient produced by the decomposition of dead organisms. (Humus)
18) Poorly aerated soil and it has small grains. (Clay soil)
19) It is a place where living organisms live and where water, food, and shelter are available. (Natural habitat)
20) It is the depletion of one of the natural resources provided by the habitat or taking it completely. (depletion)
21) Species of organisms that enter the ecosystem and cause disruption (invasive species)

5 Give Reasons For :

Concept 4.1

1\ Small dorcas gazelle is similar to its parents.
Because it gets some genetic factors from their parents.

2\ Falcons and eagles migrate to Egypt in winter.
Because Egypt in winter has moderate climate conditions.

3\ Birds migrate from one place to another place.
To search for:

-The best conditions that help them reproduce and preserve their species.

-Different food resources.

- Suitable new habitats.

4\ African penguin has a circle of skin that doesn't have any feathers around each of its eyes. To help its body cool fast in hot climate.

5\ Most of desert plants have short extended roots near Earth's surface.
To absorb any available water and catch the smallest drops of dew.

6\ A birman kitten has a long and silky hair.
Because it inherits this trait from its parents.

7\ Sphynx cat doesn't have long hair.
Because it doesn't have the genetic factor for long hair.

8\ Your lifestyle choices affect your health.
Because they depend on your behavior which may be good habits or bad habits.

9\ Plants manage to adapt to warm and dry climates?
To survive and grow

10\ Some plants have long roots ?To search for deep water

11\ The length and texture of cats' hair vary for the same breed. Due to variations in inherited genetic factors from the parents

Concept 4.2

12\ Composition of soil differs from one place to another on Earth's surface.
Due to the effect of climate and types of rocks found in this soil.

13\ Soil is very important for plants.
Because soil provides the plants with its basic needs for growth as it contains air, water and nutrients.

14\ Importance of humus for soil and plants.
Because humus increases the soil fertility and helps plants to grow.

15\ Water can flow very fast through sand soil.
Because it has large amount of pore spaces between its particles.

16\ The soil that retains medium amount of water is more fertile.
Because it keeps its organic materials and this helps in the plant growth.

17\ Clay soil can retain more amount of water.
ecause it has small amount of pore spaces between its particles.

18\ Large trees can't grow in savannas grassland ecosystems.
Because its soil is sand soil which is dry and loose that drains water quickly

19\ The soil in a bog ecosystem is wet most of the time.
Because it is rich with clay particles that retain much water very well.

20\ The increase in the inclination of the land causes the erosion of the soil.
Because the speed of moving water over the land increases, so the soil particles are washed down by moving water.

21\ Scientists and farmers should use crop remains like straw and stem in the soil.
To add nutrients to the soil, so the soil can be restored.

22\ Desertification process increases recently.
Due to deforestation, drought and overgrazing.

23\ Forest fires may have some benefits.
Because forest fires can release seeds from closed fruits.

24\ We should keep green areas and reduce the amount of fertilizers.
To reduce water pollution.

25\ Soil scientists and engineers hope to stop using traditional bricks and concrete in building houses.
Because they need large amount of energy to be manufactured and produce a lot amount of pollution.

26\ The type of soil vary from one environment to another. Due to the effect of climate and types of rocks found in this soil, and this is the reason for the presence of different types of soil (sand soil - silt soil - clay soil).

27\ Decomposers are considered environmental cleaner? Because: They clean the environment by decomposing the dead organisms. They return back nutrients into the ecosystem again.

28\ Over population may cause the destruction of natural habitats. because overpopulation leads to less food, water, shelter and space for other populations (organisms) that live in the same habitat

29\ Plants and animals depend on the soil. Plants need soil because it provide the plant with its basic needs for growth (air-water- nutrients)
animals: it is home (shelter) to many different living organism (worms - insects - fungi - bacteria)

30\ Adding sand and silt helps in the soil restoration. because they improve the soil (restore fertility of the soil)

6 What Happens To :

Concept 4.1

1) If the environmental conditions change in the homeland in which some migratory birds live.
They will migrate to another suitable habitat.

2) To the living organisms in an ecosystem, if water and light are not available.
Living organisms can't survive and will die.

3) To the plants in an ecosystem, if they receive too intense light.
The too intense light may damage the plant's parts and cause their drying or burning.

4) To two similar plants, if they are exposed to the same intensity andduration of light.
The two plants will grow with the same rate.

5) If African penguin has dense feathers around each of its eyes.
Its body doesn't cool fast at high temperatures.

6) If arctic fox has a thin fur instead of a thick fur.
It can't keep its body warm at low temperatures.

7) If arctic fox has a black fur instead of a white fur.
It can't hide in snow.

8) If the genetic factor of hairless body trait is transferred from sphynx cats parents to their offspring.
The trait of hairless body appears on the offspring.

9) If the poison dart frog doesn't have big eyes.
It can't see in the dark at night

10) If the Arctic fox does not have a thick fur.
It will not able to stay warm or survive in cold temperature and it may die.

11) When a green plant is placed away from the source of sunlight (in terms of growth direction) ? The plant grows towards the light source.

12) Healthcare services are not available in some places. health and growth will be negatively affected

Concept 4.2

13) The plants if the soil becomes unhealthy. The environment will change leading to death of plants that grow in this environment.

14) The soil if the temperature in the environment increases.
The soil will dry and may lose its nutrients.

15) The soil if it does not contain any decomposer organisms.
The soil will lose the chemical nutrients that are found in dead plants and animals, so the soil will not be fertile.

16) The rocks if they are affected by weathering process. The rocks are broken down into small pieces such as particles of sand, silt and clay.

17) The soil if it has large amount of pore spaces between its particles.
It allows water to flow fast through it.

18) The soil fertility if the soil hold medium amount of water.
The soil keeps its organic materials, so it becomes more fertile.

19) The soil when there is much water in a humid area. The soil becomes waterlogged soil and contains very little amount of air and this doesn't help roots of plants to grow in it.

20) The soil when fertile agricultural lands are converted into factories or pastures. Soil depletion may happen.

21) The soil when farmers increase the planted areas. The fertility of the soil will increase, so the soil can be restored.

22) The habitat when the number of predators decreases. The number of preys increases greatly and this leads to the lack of resources in this habitat, so it causes habitat destruction.

23) Living organisms to stay alive if they are affected by the change in their habitates due to climate change. They change their behaviors to adapt to their new habitats.

24) The sea water if industrial water is thrown into the sea without treatment. The sea water will be polluted.

25) If the soil particles is large in size. It allows water to flow fast through it. (Retaining water is small).

26) For organisms if resources are scarce in an area? migrate to another ecosystem or it will die

27) Materials are burned under extremely high temperatures using large amounts of coal? it causes pollution of air

7 Put ✓ Or ✗ :

Concept 4.1

1\ It is easy for animals to live in the desert environments. (✗)

2\ Thorns on a plant stem, is an example of structural adaptation. (✓)

3\ Some animals migrate from one place to another seasonally. (✓)

4\ Birds migrate to areas that have no food or water. (✗)

5\ Dorcas gazelle can live in both desert area and semidesert area. (✓)

6\ Availability of water is a genetic factor that affects the growth of trees and shrubs in an ecosystem. (✗)

7\ Different types of environments have different types of plants and animals. (✓)

8\ Around each eye of an Emperor penguin, there is a circle of skin that doesn't have any feathers. (✗)

9\ Acacia trees and palms are adapted to live in desert environment. (✓)

10\ When the rain falls in desert environment, some plants reach the flowering stage quickly. (✓)

11\ Ecosystems include living organisms only. (✗)

12\ Ecosystems contain biotic factors and abiotic factors. (✓)

13\ Abiotic factors of an ecosystem can eat, breathe and grow. (✗)

14\ Biotic factors of an ecosystem include sunlight, air and water. (✗)

15\ All living organisms inherited traits from their parents. (✓)

16\ Inherited traits don't affect the structure of living organisms. (✗)

17\ Sphynx cat doesn't have any hair or have only very fine hair. (✓)

18\ All Birman cats have white, very short and silky hair. (✗)

19\ There is no Sphynx cat has long hair like Birman cat. (✓)

20\ Transferring of inherited traits through generations of desert plants, make them more adapted to survive in extreme desert conditions. (✓)

21\ Inherited traits in Sphynx cats include hairless body, eye color and ear shape. (✓)

22\ Environmental and genetic factors affect the behaviors, structure and the growth of living organisms. (✓)

Concept 4.2

23\ Clay soil has a gray color while sand soil has a yellow color. (✗)

24\ Clay soil retains more amount of water than sand soil. (✓)

25\ The size of sand particles is smaller than that of silt particles. (✗)

26\ Water flows through sand soil faster than in clay soil. (✓)

27\ Soils differ in their color and their ability to hold water. (✓)

28\ The climate doesn't affect the types of plants that can grow in an area. (✗)

29\ Humid areas retain large amount of water during rainfall. (✓)

30\ Healthy soil is very important to keep the life on Earth. (✓)

31\ Converting fertile agricultural lands into cities leads to increase the deforestation of the land. (✓)

32\ The soil can't be restored again. (✗)

33\ Adding natural fertilizers like animal manure to the soil help in soil restoration. (✓)

34\ When the soil is irrigated regularly, the quality of the crops will increase. (✓)

35\ Removing plants leads to the soil erosion. (✓)

36\ Human activities only lead to habitat destruction. (✗)

37\ Streams and oceans are examples of natural habitats. (✓)

38\ Cleaning up water from pollution is more effective than preventing it. (✗)

39\ To build traditional bricks, we need a lot of energy. (✓)

40\ Depending on traditional bricks and concrete causes harms for the environment. (✓)

41\ The glue-like substance that is used in binding materials together is formed from the chemical change of the topsoil. (✗)

42\ The subsoil that is used for agriculture, is used to make the glue-like building material. (✗)

43\ Genetic factors help the Dorcas gazelle to withstand high temperatures. (✓)

44\ Minerals are organic ingredients in the soil. (✗)

45\ All the soil ingredients can be seen. (✗)

46\ Lifestyles do not affect human growth. (✗)

47\ Soil fertility increases as the amount of organic matter in it increases. (✓)

48\ All agricultural crops can be grown in the desert environment. (✗)

49\ The shape and behavior of living organisms vary according to their habitat and the type of food they depend on. (✓)

8 Match The Following

Concept 4.1

1) Choose from column (b) what suits it in column (A):

(A)	(B)	
1. Structural adaptation 2. Behavioral adaptation 3. Bird migration 4. Thorns on a plant stem	ⓐ	is an example of structural adaptation.
	ⓑ	like growth of plant toward light.
	ⓒ	is an ecosystem.
	ⓓ	like thick fur of animals that live in cold areas.
	ⓔ	is an example of behavioral adaptation.

1\" d " 2\ " b " 3\ " e " 4\"a"

2) Choose from column (B) what suits it in column (A):

(A)	(B)	
1. Acacia tree 2. Poison dart frog 3. Emperor penguin 4. Arctic fox	ⓐ	It has sandy-colored scales.
	ⓑ	It has thick white fur.
	ⓒ	It lives in Antarctic.
	ⓓ	It lives in desert.
	ⓔ	It lives in tropical rain forest.
1\" d " 2\ " e " 3\ " c " 4\"b"		

9 Compare Between :

Concept 4.1

1) Compare the African penguin and the emperor penguin in terms of:

1- Habitat:

2- Temperature:

3- Structural adaptations:


African Penguin Emperor Penguin

Comparison	Emperor Penguin	African Penguin
Habitat	Antarctic	Along the coast of South Africa
Temperature	Cold	Hot
Structural adaptation	Has thick blubber and body covered with dense feathers	Black circle around each eye and a circle of skin that doesn't have any feathers

2) Compare the Sphynx cat and the Birman cat in terms of:

1.Hair 2. Gene

Comparison	Birman cat	Sphynx cat
Hair	Has long, silky hair with different colors.	It does not have any hair or may have only very fine hair.
Gene	Birman cat	Sphynx cat

10 Various Questions :

Concept 4.1

(1) Study the following two pictures, then answer the following questions: (A) Put (o) or (X):



1. Animals in both pictures need food, water and habitat to survive. (✓)
2. The animal in picture (B) has a body color helps it to survive in its desert environment. (✓)
3. Animals in both pictures have a body size similar to its parents. (✓)

(B) If you know that the bird in picture (A) is a migratory bird, write 2 reasons for its migration:

a. Search for different food resources b. Search for another suitable habitats

(2) Classify the following examples of adaptation in animals into structural and behavioral adaptations:

strong sense of smell	move in groups	walk on two legs	have sharp teeth	migration every year

(A) Structural adaptation: Strong sense of smell – Walk on two legs - Have sharp teeth.

(B) Behavioral adaptation: Move in groups – Migration every year

(3) Study the following pictures, then put (✓) or (✗):



1. The four pictures show some biotic factors that live in three different environments. (✓)
2. The animal in picture number (2) lives in an environment that suffers from shortage of water, while the environment in which the animal in picture number (3) lives has a lot of water. (✗)
3. Animals in pictures number (2) and (4) can't live in the same environment, while living organisms in pictures number (1) and (3) can live in the same environment. (✓)
4. Caribou can live in the same environment in which the animal in picture number (4) lives. (✓)

(4) Look at the picture then answer:



Steppe eagle

1- Seasonal migration is a behavioral adaptation.

2- Steppe eagles migrate with the aim of search for food and breeding

3- The steppe eagle has a sharp and strong beak, and this is a structural adaptation adaptations .

4- The steppe eagle has structural adaptations such as long wings that help it fly long distances.

(5) How do genetic factors affect the growth of living organisms?

Its body color that helps it hide in the desert.

It doesn't drink water for several months.

(6) Read the following statements then correct the incorrect ones:

1- Fur color is considered a structural adaptation. (Correct)

2- The size of an organism's natural habitat does not affect its growth. (Incorrect)

Correction: The size of an organism's natural habitat affects its growth

3- The size of an organism is a characteristic that is not affected by genetic factors. (Incorrect) Correction: The size of an organism is a characteristic that is affected by genetic factors.

4- An unhealthy environment positively affects human life.

(in Correct) An unhealthy environment negatively affects human life

5- Height and skin color are considered abiotic factors that affect human life.

(in Correct) Water and temperature are considered abiotic factors that affect human life.

6- Hums increases soil fertility. (correct)

7-Water is one of the basic ingredients of soil. (correct)

8- The soil consists of a mixture of organic matter only. (in correct)

Correction: the soil consists of a mixture of organic and inorganic matter.

9- The large sized particles in the soil make it more water-retaining. (in correct)

Correction: the large sized particles in the soil make it less water retaining.

10- One of the characteristics of sandy soils is its large sized particles and low water retention. (correct)

11-Climate does not affect soil properties. (incorrect)

correction: climate affect soil properties

12-Removing vegetation keeps the soil from erosion.

(incorrect) correction: Removing vegetation increase the soil erosion

13-The entry of invasive organisms into the natural habitat has a positive effect.
(incorrect)correction: the entry of invasive organisms has negative effect
14- A natural habitat is a place where living organisms live and their needs are met.(correct)

(7) Identify the type of factor (genetic-environmental- lifestyle):

1- Smoking practice Lifestyle .
2- Availability of hospitals Environmental .
3-Length of hand fingers Genetic .

Concept 4.2

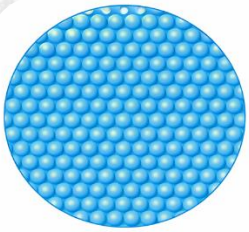
(8) Look at the following figure then complete the following sentences using the words below:

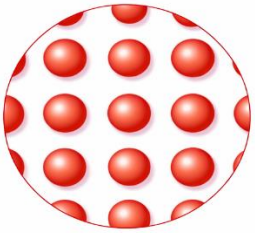
(worms-water-minerals - soil-bacteria- remains of dead plants)

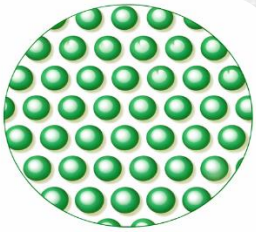


1. This layer that covers Earth's crust is called soil .
2. This layer contains organic ingredients like worms and bacteria inorganic ingredients like water and minerals .
3. Decomposers break down the remains of dead plants that are found in this layer that increase its fertility.

(9) Look at the following figures that represent particles of different types of soil, then answer the following questions:


Figure (1)


Figure (2)


Figure (3)

(A) Choose:

1. Figure (1) represents clay soil. (sand - silt - clay)
2. Figure : Figure (2) retains small amount of water. (1-2-3)

Figure (3)

(B) Put (✓) or (X):

1. Figure (2) represents yellow sand soil. (✓)
2. Figure (3) is more fertile than figure (1). (✓)
3. Soil in figure (1) allows very large amount of water to flow through its particles. (X)

(10) Look at the opposite figure then choose the correct answer:

1..... is the type of soil that is found in this ecosystem.

a. Sand b. Silt c. Clay

2. The moist conditions in this ecosystem, lead to.....temperature.

a. very hot b. very cool c. hot

3. The animals that live in this ecosystem are.....

a. lions and cheetahs. b. frogs and mosquitos.

c. gazelles and zebras.



Bog ecosystem

(11) Classify the following activities into natural activities and human activities that lead to habitat destruction:

Hurricanes	*Floods*	*Building houses*	*Destructive earthquakes*	*Making road and airport runways*

Natural activities	Human activities
- Hurricanes.	- Building houses.
- Floods.	- Making road and airport runways
- Destructive earthquakes.	

(12) Look at the opposite picture, then complete the following sentences using the words below:

overgrazing	*desertification*	*straw*	*deserts*	*animals manure*	*infertile*	*stems*	*deforestation*

1. The opposite picture shows the occurrence of desertification process, that happens when the soil becomes infertile and turns into deserts .

2. Among the reasons for occurrence of this process are deforestation , drought or overgrazing .

3. To restore this soil, farmers should use crop remains such as straw and stems or use natural fertilizers such as animals manure.



(13) Look at the opposite photo then answer:

(A) Put (✓) or (X):

1. Human activities increase water pollution. (✓)

2. Air pollution can cause water pollution. (✓)

3. Using large amounts of fertilizers reduce water pollution. (X)



(B) Complete:

1. To reduce water pollution we have to treat sewage and industrial water before throwing them into any water body.
2. Using soil fences and sedimentation ponds decrease water pollution.

(14) Look at the following picture, then complete the following sentences using the words below:

pollution	*chemical*	*traditional bricks*	*subsoil*	*glue-like substance*



1. This building material is called traditional bricks .
2. The process of making this building material can cause pollution that damage the environment.
3. Scientists tend to use glue- like substance instead of this building material, which is made by chemical change of subsoil that beneath the topsoil.

(15) The stages of soil formation start with:

Weathering ➡ Erosion ➡ Deposition

Notice the following picture then answer

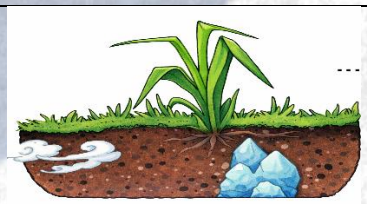
a- Organic ingredients in soil such as insects and worms (True - False)

b- Soil contains particles rocks of sand and clay

c- Environmental cleaner that decomposes dead organisms called decomposers.

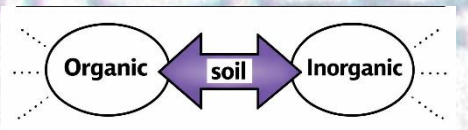
Complete: Soil ingredients:

- Small pieces of rocks.
- Small pieces of leaves and branches of trees.
- Other dark colored materials.



Complete the following chart:

- Remains of dead plants and animals
- Decomposer/organism (fungi - bacteria - earth worm)



- Rocks and minerals
- Water
- Air

(16) Soil is considered one of the ingredients of the lithosphere of the Earth planet.

*Identify the importance of soil for both humans, animals, and plants:

The importance of soil		
For human	For plants	For animals
• Building houses.	•Provide nutrients and water for growth of the plant.	Provide shelter to some animals.
• Provide food and crops to survive.	•Anchor the roots of plant.	Source of food to survive.

(17) Choose the odd word :

1- Sand - humus - clay - silt.

2- Wide eye - plant height - swimming skill - skin color.

3- Air - water - decomposing organisms - rocks.

4- Sunlight - Precipitation - Temperature - Insects.

(18) What is meant by soil? Mention its components and what is the importance of soil for plants?

It is the loose layer which covers Earth's crust.

Components of soil:

-Organic material (dead plants).

-Sand, gravel and minerals.

-Living organisms (worms and insects).

-Water.

-Air.

* Soil important for plants as it provide them with its basic needs for growth (air - water - nutrients).

(19) Compare between sandy soils and clay soils in terms of particles size and cohesion:

Type of soil	Size of particles	Cohesion
Sandy soil	Large	Non-cohesive (loose)
Clay soil	Small	Cohesive