# Interdependence of Organisms

1. Which of these is a biotic factor?

a. sunlight

b. a rabbit

c. water

d. soil

2. Which of these is an abiotic factor?

a. water

b. the spread of a microorganism

c. a rotting log

d. a fungus

3. The amounts of water, food, and shelter in an ecosystem are examples of

a. habitats

b. carrying capacity

c. limiting factors

d. biotic factors

4. Which statement BEST describes how limiting factors affect the organisms in an ecosystem?

a. they destroy resources the organisms need to survive

b. they provide what an organism needs to survive

c. they keep a population from getting too large

d. they have no effect on the organisms in an ecosystem

5. Which of these is an example of a terrestrial biome?

a. river

b. ocean

c. tundra

d. lake

6. Which of the following includes both living and nonliving things?

a. ecosystem

b. population

c. species

d. community

7. Which of these is an example of a freshwater biome?

a. tundra

b. temperate forest

c. ocean

d. stream

8. In what part of the marine biome are coral reefs located?

a. the oceanic zone

b. estuaries

c. the intertidal zone

d. the neritic zone

9. Which of the following is a symbiotic relationship where both organisms benefit?

a. mutualism

b. commensalism

c. competition

d. parasitism

10. Which two animals are most likely to have a predator-prey relationship?

a. dog and tapeworm

b. buffalo and tickbird

c. spider and fly

d. whale and barnacle

11. The cattle egret perches on a buffalo’s back, and is carried around and eats insects flushed from the grass as the buffalo moves. The buffalo is not benefited or harmed. What is this an example of?

a. mutualism

b. commensalism

c. parasitism

d. predation

12. What type of organism make up the largest level of an energy pyramid?

a. producers

b. herbivores

c. consumers

d. omnivores

13. Which of these is a model that shows all the feeding relationships in an ecosystem?

a. habitat

b. food web

c. food chain

d. biome

14. Which of these is a primary consumer?

a. wolf

b. oak tree

c. mushroom

d. horse

15. Which type of organism breaks down the cells of dead organisms?

a. producer

b. consumer

c. decomposer

d. omnivore

16. What is a plant’s role in the carbon cycle?

a. plants take in oxygen and release carbon dioxide

b. plants take in carbon dioxide and pass it on to animals

c. plants take in carbon dioxide produced by other organisms

d. plants use carbon dioxide to make protein

17. What is the process by which bacteria return nitrogen gas to the atmosphere?

a. reproduction

b. excretion

c. nitrogen fixation

d. denitrification

18. Which group of organisms releases oxygen as a waste product?

a. plants

b. animals

c. fungi

d. decomposers

19. What is the name of the process in which plants return water to the atmosphere through their leaves?

a. excretion

b. photosynthesis

c. transpiration

d. decomposition

20. Which of these biomes is characterized by cone-bearing plants with needle-like leaves?

a. wetland

b. tropical rain forest

c. grassland

d. taiga

## Cell Structure and Function

1. Bacteria, protists, fungi, plants. and animals are all types of living things. Whjch of the following must be true about all these organisms?

a. they all move

b. they are all made up of one or more cells

c. they all make their own food

d. they are all made by human

2. Which statement is part of cell theory?

a. unicellular organisms are composed of a single cell

b. cells vary in size and shape

c. all cells come from existing cells

d. cells may be specialized to perform a specific function

3. Which scientist first used the word cell to describe what he saw with a microscope?

a. van Leeuwenhoek

b. Hooke

c. Virchow

d. Schwann

4. To which type(s) of cells does the cell theory apply?

a. animal cells only

b. plant cells only

c. all cells

d. all cells except animal and plant cells

5. Which cell structures is found in plant and animal cells and controls what can eneter or leave a cell?

a. nucleus

b. cytoplasm

c. cell membrane

d. cell wall

6. All cells need energy to function. Which organelle in plant and animal cells provides energy for these cells?

a. nucleus

b. mitochondria

c. chloroplast

d. ribosome

7. What organelle in plant cells is responsible for photosynthesis?

a. vacuole

b. cell wall

c. nucleus

d. chloroplast

8. What is the fluid that fills most of a cell called?

a. vacuole

b. chloroplyll

c. cytoplasm

d. DNA

9. What do all eukaryotic cells have that all prokaryotic cells lack?

a. cytoplasm

b. cell membrane

c. cell wall

d. nucleus

10. By what process do cells increase in size?

a. growth

b. development

c. reproduction

d. response

11. Which of these do cells need to take in so they can carry out cellular respiration?

a. energy

b. carbon dioxide

c. water

d. oxygen

12. Plants make a sugar called glucose during photosynthesis. This sugar is broken down during cellular respiration. What does cellular respiration give cells?

a. energy

b. carbon dioxide

c. water

d. nutrients

13. In which cell structure does photosynthesis take place in plant cells?

a. nucleus

b. mitochondria

c. chloroplast

d. cell wall

14. Cells can divide to make more cells like themselves. What is this process called?

a. reproduction

b. photosynthesis

c. development

d. respiration

15. Which of the following shows the correct order of the levels of organization, from simplest to most complex?

a. organ system → organ → tissue → cell

b. cell → tissue → organ → organ system

c. organ → organ system → cell → tissue

d. tissue → organ → organ system → cell

16. A group of organ systems makes up

a. a cell

b. an organism

c. a tissue

d. an organelle

17. Which level of organization is a group of different tissues that work together to perform a function?

a. cell

b. tissue

c. organ

d. organism

Human Body systems

1. What type of tissue is skin made of?

a. epithelial

b. connective

c. muscle

d. nervous

2. Which of these correctly describes the path taken by air that is inhaled?

a. nose, trachea, alveoli, bronchi

b. trachea, alveoli, nose, bronchi

c. alveoli, bronchi, trachea, nose

d. nose, trachea, bronchi, alveoli

3. Which component of blood helps the body fight disease?

a. plasma

b. red blood cells

c. white blood cells

d. platelets

4. Which of these transport blood from the heart to the rest of the body?

a. arteries

b. veins

c. capillaries

d. bronchi

5. Where does blood flow to from the right side of the heart?

a. the lungs

b. the brain

c. the kidneys

d. the diaphragm

6. Which of the following organs make up the central nervous system?

a. nerve cells and brain

b. ear, nose, eyes, tongue, and skin

c. brain and spinal cord

d. nerve cells and spinal cord

7. How do nerve impulses travel from one nerve to another?

a. from the axon of the first nerve to a dendrite of the second

b. from the axon of the first nerve to the axon of the second

c. from a dendrite of the first nerve to the axon of the second

d. from the cell body of the first nerve to a dendrite of the second

8. Which of the following is true about a reflex?

a. it is a voluntary response controlled by the brain

b. it is an involuntary response controlled by the brain

c. it is a voluntary response controlled by the spinal cord

d. it is an involuntary response controlled by the spinal cord

9. Which organ connects the mouth to the stomach?

a. small intestine

b. esophagus

c. pancreas

d. gall bladder

10. Which of the following is LEAST directly involved with excretion?

a. lungs

b. kidneys

c. esophagus

d. large intestine

11. The bones of the ribcage have limited movement. The joints that connect the bones of the ribcage are MOST LIKELY

a. immovable joints

b. freely movable joints

c. slightly movable joints

d. ball-and-socket joints

12. Muscles of the bladder relax when urine is being stored and contract when urine is released. These muscles are under involuntary control. Which type of muscles are they?

a. smooth muscle

b. cardiac muscle

c. skeletal muscle

d. striated muscle

13. Certain types of blood cells are produced in

a. ligaments

b. tendons

c. bone marrow

d. cartilage

14. By which process can a person acquire active immunity to a disease?

a. injection with antibiotics

b. treatment with antibiotics

c. vaccination

d. following sanitary procedures

15. How do phagocytes help protect the body from disease?

a. they produce white blood cells

b. the engulf and kill pathogens

c. they produce T and B cells

d. they prevent pathogens from entering the body

16. Which organ system carries nutrients to cells?

a. circulatory

b. reproductive

c. excretory

d. digestive

17. Which organ shown is MOST responsible for controlling the activities of the body?

a. lungs

b. heart

c. liver

d. brain

## Classifying Living Things

1. What is one way that Archaebacteria are different from true bacteria?

a. Archaebacteria do not have cell walls

b. Archaebacteria are multicellular

c. Archaebacteria cells do not have a nucleus

d. Archaebacteria have different DNA than true bacteria

2. An organism is multicellular and made up of eukaryotic cells. The organism can move from one place to another. Its cells do not have cell walls or chloroplasts. In which kingdom does it belong?

a. Protista

b. Animalia

c. Plantae

d. Fungi

3. In which kingdom do mushrooms belong?

a. Eubacteria

b. Protista

c. Fungi

d. Plantae

4. You are studying a pond. You discover a multicelled autotroph living there. Which of the following have you MOST LIKELY found?

a. an animal

b. algae

c. a fungus

d. a bacterium

5. Why would a scientist use a dichotomous key?

a. to find out the habitat of an organism

b. to determine the organism’s method of feeding

c. to identify an unknown organism

d. to research the characteristics of a species

|  |  |
| --- | --- |
| 1. a. Has one pair of wings  b. Has two pairs of wings | Go to 2  Go to 3 |
| 2. a. Wings are vertical at rest  b. Wings are horizontal at rest | http://t3.gstatic.com/images?q=tbn:ANd9GcTy9q-8ZbgBNLIID41fCiFVw_N0giEPyzeEOY5S94axHJdpEBXUxQMayfly  Mosquito |
| 3. a. The front wings are shaped like the back wings  b. The front wings are not shaped like the back wings | Go to 4  Go to 5 |
| 4. a. Wings are covered with scales  b. Wings are not covered with scales | Moth  Cicada |
| 5. a. Abdomen with two tail-like projections  b. Abdomen without two tail-like projections | Stonefly  Termite |

6. According to the classification key, which type of insect is shown?

a. mayfly

b. mosquito

c. stonefly

d. termite

7. Which of the following kingdoms contains multicellular organisms that carry out photosynthesis?

a. Protista

b. Animalia

c. Fungi

d. Plantae

8. You are looking at a single-celled organism. The cell has no nucleus but it has a cell wall. and doe not have chloroplasts. In which kingdom should the organism be classified?

a. Archaebacteria

b. Protista

c. Fungi

d. Plantae

|  |  |
| --- | --- |
| 1. a. Single-celled  b. Multicelled | Go to 2  Go to 3 |
| 2. a. Prokaryote  b. Eukaryote | Go to 5  Kingdom Protista |
| 3. a. Heterotroph/consumer  b. Autotroph/producer | Go to 4  Kingdom Plantae |
| 4. a. Cell wall  b. No cell wall | Kingdom Fungi  Kingdom Animalia |
| 5. a. Lives in mild/moderate environment  b. Lives in harsh environment | Kingdom Eubacteria  Kingdom Archaebacteria |

9. You observe cells under a microscope. The cells are from a multicelled organism. Each cell has a nucleus, but lacks a cell wall or chloroplasts. Based on the dichotomous key above, in what kingdom is your organism classified?

a. Eubacteria

b. Animalia

c. Fungi

d. Plantae

10. You are developing a dichotomous key. What is true about the characteristics you include in your key?

a. they should always be about body size or shape

b. only one choice in each pair should be true for an organisms

c. they must be stated in the form of a question

d. they should focus only on traits shared by all organisms

11. You are given a microscope slide of cells from an unknown organism. You observe that the organism is multicelled and had both a nucleus and a cell wall. You see no chloroplasts, so you conclude that the cell is a heterotroph. How should the organism be classified?

a. kingdom Archaebacteria

b. kingdom Animalia

c. kingdom Fungi

d. kingdom Plantae

## Heredity and Evolution

1. What are two forms of a gene called?

a. phenotypes

b. genotypes

c. dominant traits

d. alleles

2. In humans, having dimples is a dominant trait. You meet a person and notice that she does not have dimples. What can you conclude about this person?

a. she has inherited two recessive alleles for the dimples trait

b. she has inherited one recessive allele for the dimples trait

c. she has inherited two dominant alleles for the dimples trait

d. she has inherited one dominant allele for the dimples trait

3. Where are an organism’s chromosomes located?

a. on the genes

b. on the alleles

c. in the cell membrane

d. in the nucleus

4. Which of these processes produces cells with hereditary information that differs from the parent?

a. binary fission

b. vegetative propagation

c. sexual reproduction

d. asexual reproduction

5. Binary fission produces

a. two cells with half as many chromosomes as the parent cell

b. two cells with chromosomes identical to that of the parent cell

c. two cells that then join together

d. two cells that have twoce as many chromosomes as the parent cell

6. Which of the following is NOT involved in sexual reproduction?

a. fertilization

b. bud

c. egg

d. sperm

7. Which of the following statements is true of asexual reproduction?

a. all offspring have different combinations of DNA

b. all offspring have half of their DNA from the male parent

c. all offspring have the same DNA as the parent

d. offspring have more DNA from the male parent than from the female parent

8. What is a change in a gene or chromosome called?

a. an allele

b. a mutation

c. a hybrid

d. a purebred

9. Which of the following BEST describes a purebred organism?

a. it has multiple alleles for a given trait

b. it is created only through asexual reproduction

c. it has matching alleles for a given trait

d. it has genes identical to its parent

10. Which best describes how selective breeding by mass selection changes the traits of organisms?

a. small differences in traits accumulate in successive generations over time, resulting in organisms that have desired traits

b. small differences in traits appear immediately and are passed to successive generations through asexual reproduction

c. large differences in traits appear immediately and are passed on to all offspring

d. small difference is traits appear only as a result of mutations

11. A plant species has evolved to contain a bad-tasting chemical. Which of the following is the MOST LIKELY outcome of this adaptation?

a. animals are less likely to eat the plant

b. the plant will be able to live in many different environments

c. the chemical will aid in photosynthesis

d. animals are more likely to eat the plant

12. Which of the following is the BEST example of an adaptation?

a. coyotes moving into a new area where they can hunt deer

b. a breeder mating two black dogs to get a little of black puppies

c. horses having long legs so they can run away from predators

d. people learning to ride horses for exercise

13. Which of the following is a major factor that drives biological evolution?

a. individuals share unlimited resources

b. variations exist within populations

c. organisms produce very few offspring

d. helpful variations cannot be inherited

14. What happens if the environment changes and a population in that environment has no adaptations for survival in the new conditions?

a. it is likely to become extinct

b. it tries to develop adaptations to prevent extinction

c. it forms a new species

d. it tries to change its environment

15. Which of the following is true about the fossil record?

a. it provides clues about how organisms have changed over time

b. it shows that Earth’s climate has been constant throughout history

c. it shows that all species found on Earth today are identical to all their ancestors

d. it is used to show that the youngest fossils will usually be discovered in the deepest layers of rock

16. Which of the following is an example of a relative age?

a. 30,000 years ago

b. during the Phenerozoic eon

c. in the beginning of the Cambrian period

d. after the extinction of the trilobites

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