

Name: _____ Date: _____ Block: _____

A Review of Biology: Cells and Their Processes

Directions: Use your Big Picture review sheet to answer the following questions in complete sentences.

1. Explain the difference between organic and inorganic compounds.
2. List the four types of organic compounds and describe the function of each.
3. Explain the difference between a eukaryotic cell and a prokaryotic cell.
4. List 5 organelles found in an animal cell and describe the function of each.
5. Which 2 organelles are found in plant cells but not animal cells? Describe the function of these 2 organelles.
6. Describe 2 differences between bacteria and animal cells.
7. What is a phospholipids bilayer?

8. Explain the major difference between active and passive transport.

9. What is the difference between diffusion and osmosis?

10. a. What is photosynthesis?

b. What is the chemical equation for photosynthesis?

11. a. What is cellular respiration?

b. Name and describe the two types of cellular respiration.

c. What is the chemical equation for aerobic respiration?

12. a. What are chromosomes?

b. How many types of chromosomes do humans have?

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A Review of Biology: Genetics

Directions: Use your Big Picture review sheet to answer the following questions in complete sentences.

c. How many chromosomes in all do humans have?

d. From whom do we get these chromosomes?

13. What are diploid cells? Give an example of a diploid cell in the human body.

14. What are haploid cells? Give an example of a haploid cell in the human body.

15. Explain the difference between autosomes and sex chromosomes.

16. What are the four phases of the cell cycle and what happens in each phase?

17. What is mitosis?

18. List the four phases of mitosis and describe the events in each phase.

1. What is meiosis?

2. Compare the number of chromosomes found in cells formed by mitosis and cells formed by meiosis.

3. What is fertilization?

4. What is the unique shape of DNA?

5. What are the four bases of DNA and how do they pair up?

6. What is semi-conservative replication?

7. What is unique job of RNA?

8. List and explain the 3 steps that cells use to make protein.

9. Write the complementary DNA and then RNA sequences for the following:

ATG CCA TTG GCA

10. What is a mutation?

11. When does a mutation in a parent affect the offspring?

12. What is genetics?

13. What are alleles?

14. Explain the difference between a dominant and a recessive gene. Give an example of each.

15. Explain the difference between the terms homozygous and heterozygous. Give an example of each.

16. Explain Mendel's law of segregation.

17. Explain Mendel's law of independent assortment.

18. Explain the difference between genotype and phenotype.

19. Draw a Punnett Square for the cross of a mother who is heterozygous for brown eyes and a father who has blue eyes.

20. What percentage of the children above will have brown eyes? Blue eyes?

21. Describe a trait that is controlled by multiple alleles.

22. Explain the difference between codominance and incomplete dominance.

23. What is a sex-linked trait? Give an example of a sex-linked trait.

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A Review of Biology: The Theory of Evolution

Directions: Use your Big Picture review sheet to answer the following questions in complete sentences.

1. What is evolution?
2. Who first stated the theory of evolution?
3. What is natural selection?
4. What is biodiversity?
5. List and describe 5 pieces of evidence that support the theory of evolution.
6. What is the difference between homologous structures and vestigial structures?
7. What is taxonomy?
8. What are the 7 different levels of taxonomy?
9. How can you determine how closely related organisms are from their taxonomy?
10. List and describe the six kingdoms of living things.
11. What is a scientific name?
12. List and describe the three domains.

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A Review of Biology: Ecology

Directions: Use your Big Picture review sheet to answer the following questions in complete sentences.

1. What is ecology?
2. What is the difference between a community and a habitat?
3. What is an ecosystem?
4. What is the difference between autotrophs and heterotrophs?
5. List and describe the three types of heterotrophs.
6. What is the difference between biotic and abiotic factors?
7. List and describe the three types of biotic factors.
8. Draw a food chain with four organisms and label the 1st, 2nd, 3rd, and 4th trophic levels.
9. How is energy transferred through trophic levels?
10. What is a food web?
11. Briefly explain the nitrogen cycle.
12. Briefly explain the water cycle.
13. Briefly explain the oxygen-carbon cycle.
14. What two cellular processes are involved in the oxygen-carbon cycle?
15. What is competition?
16. What is symbiosis?
17. List and describe the three types of symbiosis.

18. What is an adaptation? Give an example.

19. List the reasons why populations of organisms increase or decrease.

20. List the reasons why ecosystems are constantly changing.

ANATOMY

NAME THE SYSTEM (Fill in the blank with a name of one of the body systems)

1. _____ System that includes the heart, blood vessels, and blood.
2. _____ System that eliminates wastes from the body and regulates water.
3. _____ System that consists of glands and hormones.
4. _____ System that protects and supports the body and allows for movement.
5. _____ System that removes carbon dioxide and supplies the body with oxygen.
6. _____ System that transmits messages and responds to changes.
7. _____ System that drains leaked tissue fluids and stores white blood cells.
8. _____ System that functions in the production of offspring.
9. _____ System that covers and protects the body.
10. _____ System that allows for locomotion and movement.
11. _____ System that breaks down food and absorbs nutrients.

NAME THE SYSTEM (Fill in the blank with a name of one of the body systems)

1. Mouth, esophagus, stomach, small intestine, large intestine, rectum, and anus: _____
2. Brain, spinal cord, and neurons: _____
3. Heart, blood vessels, and blood: _____
4. Epidermis, dermis, sweat glands, oil gland, and receptors: _____
5. Kidneys, ureters, bladder, urethra: _____
6. Nose/mouth, trachea, bronchi, bronchioles, alveoli: _____
7. Bones, cartilage, and joints: _____
8. Ductless glands (pituitary, thyroid, adrenals etc.) and hormones: _____
9. Ovaries and testes: _____
10. Muscles and tendons: _____
11. Lymphatic nodes, lymphatic vessels, and lymph: _____