

Praxis Pennsylvania Grades 4-8 Core Assessment (5152) Practice Exam (Sample)

Study Guide



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SAMPLE

Questions

- 1. Which two kingdoms are considered the most primitive due to their prokaryotic organisms?**
 - A. Archaeobacteria and eukaryotes**
 - B. Eubacteria and archaeobacteria**
 - C. Fungi and protista**
 - D. Plantae and animalia**
- 2. Which type of exploitation in lakes can lead to vulnerable fish populations during certain seasonal conditions?**
 - A. Overfishing**
 - B. Pollution**
 - C. Eutrophication**
 - D. Habitat Destruction**
- 3. What type of relationship exists where one species benefits and the other neither benefits nor is harmed?**
 - A. Parasitism**
 - B. Mutualism**
 - C. Commensalism**
 - D. Competition**
- 4. Which type of tissue is primarily responsible for voluntary movement?**
 - A. Nervous tissue**
 - B. Muscle tissue**
 - C. Epithelial tissue**
 - D. Connective tissue**
- 5. Which property indicates that the way numbers are grouped does not affect the product when multiplying?**
 - A. Commutative Property**
 - B. Associative Property**
 - C. Distributive Property**
 - D. Additive Inverse**

- 6. Which type of clouds are found at upper levels of the atmosphere?**
- A. Cumulonimbus**
 - B. Stratus**
 - C. Cumulus**
 - D. Cirrus**
- 7. Which scientific principle is demonstrated by stating that gas pressure increases as temperature increases, assuming volume remains constant?**
- A. Ideal Gas Law**
 - B. Charles's Law**
 - C. Gay Lussac's Law**
 - D. Dalton's Law**
- 8. Which type of sedimentary rock is considered a secondary rock type?**
- A. Igneous**
 - B. Sedimentary**
 - C. Metamorphic**
 - D. All of the above**
- 9. What type of rocks are formed from accumulation of small pieces of broken-off pre-existing rocks?**
- A. Metamorphic**
 - B. Chemical**
 - C. Igneous**
 - D. Sedimentary**
- 10. What medical condition is characterized by a lack of iron?**
- A. Hemophilia**
 - B. Leukemia**
 - C. Anemia**
 - D. Diabetes**

Answers

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1. B
2. C
3. C
4. B
5. B
6. D
7. C
8. C
9. D
10. C

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Explanations

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1. Which two kingdoms are considered the most primitive due to their prokaryotic organisms?

- A. Archaeobacteria and eukaryotes**
- B. Eubacteria and archaeobacteria**
- C. Fungi and protista**
- D. Plantae and animalia**

The correct choice highlights that eubacteria and archaeobacteria are both composed of prokaryotic organisms, which are characterized by their lack of a defined nucleus and membrane-bound organelles. These two kingdoms represent some of the most ancient forms of life on Earth, existing in a wide variety of environments, including extreme conditions. Archaeobacteria often thrive in extreme environments like hot springs and salt lakes, while eubacteria can be found in soil, water, and as part of the human microbiome. In contrast, the other options involve kingdoms that are not prokaryotic. Eukaryotes, fungi, protista, plantae, and animalia consist of eukaryotic cells, which possess a defined nucleus and various organelles. Therefore, while they represent diverse life forms, they do not fall under the category of the most primitive kingdoms as defined by the presence of prokaryotic organisms.

2. Which type of exploitation in lakes can lead to vulnerable fish populations during certain seasonal conditions?

- A. Overfishing**
- B. Pollution**
- C. Eutrophication**
- D. Habitat Destruction**

Eutrophication is the process by which a body of water becomes overly enriched with nutrients, typically nitrogen and phosphorus. This nutrient influx can lead to excessive growth of algae, known as algal blooms. During certain seasonal conditions, particularly in warm months, these blooms can deplete oxygen in the water when the algae die and decompose. This process creates hypoxic or anoxic conditions, which can lead to fish kills and render fish populations vulnerable. In addition to affecting oxygen levels, eutrophication can also disrupt the food web within the lake, making it difficult for fish to find food or reproduce successfully. This can significantly alter the fish population dynamics, often favoring a few species that can tolerate such conditions while threatening the survival of others, particularly those that are already vulnerable. Understanding eutrophication is crucial for managing lake health and ensuring sustainable fish populations, especially in areas prone to nutrient runoff from agricultural or urban sources. Its impact on fish populations becomes particularly pronounced during specific seasonal cycles when temperature and light conditions promote algal growth.

3. What type of relationship exists where one species benefits and the other neither benefits nor is harmed?

- A. Parasitism**
- B. Mutualism**
- C. Commensalism**
- D. Competition**

The correct answer is commensalism, which describes a specific type of interaction between two species where one species benefits while the other is neither helped nor harmed. This means that in a commensal relationship, one organism may gain food, shelter, or some other benefit from its interaction with another species, while the other organism is unaffected by this relationship. For instance, a classic example of commensalism is barnacles attaching to the shell of a turtle. The barnacles benefit by gaining a place to live and access to nutrients in the water, while the turtle does not experience significant effects from the barnacles being there. Other types of relationships, such as parasitism, involve one species benefiting at the expense of the other, as seen in parasites who live on or in a host and derive nutrients to the host's detriment. Mutualism, on the other hand, describes interactions in which both species involved benefit from the relationship, like bees pollinating flowers while gathering nectar. Competition occurs when two species vie for the same resources, resulting in a negative impact on at least one of the species. Each of these other types of interactions has different implications for the species involved, further highlighting the uniqueness of commensalism.

4. Which type of tissue is primarily responsible for voluntary movement?

- A. Nervous tissue**
- B. Muscle tissue**
- C. Epithelial tissue**
- D. Connective tissue**

Muscle tissue is primarily responsible for voluntary movement in the body. It is composed of specialized cells that can contract and relax, which enables movement of the skeleton and, consequently, body parts. There are three types of muscle tissue: skeletal, cardiac, and smooth. Skeletal muscle is the type that is consciously controlled and is what we refer to when discussing voluntary movement; it operates under our control, allowing us to perform actions such as walking, running, and lifting. In contrast, nervous tissue is involved in transmitting signals throughout the body but does not contribute to movement itself. Epithelial tissue serves as a protective layer and is involved in absorption and secretion but also does not facilitate voluntary movement. Connective tissue supports and binds other tissues and organs in the body but lacks the capability for muscle contraction and voluntary actions. Thus, muscle tissue is the clear answer for its role in enabling voluntary movement.

5. Which property indicates that the way numbers are grouped does not affect the product when multiplying?

A. Commutative Property

B. Associative Property

C. Distributive Property

D. Additive Inverse

The Associative Property is the correct choice because it specifically refers to the ability to group numbers in different ways when performing multiplication (or addition) without affecting the overall product (or sum). For example, when multiplying the numbers 2, 3, and 4, both $(2 \times 3) \times 4$ and $2 \times (3 \times 4)$ will yield the same result of 24. This property essentially illustrates that the relationships between the numbers remain unchanged regardless of how they are grouped during multiplication. In contrast, the Commutative Property deals with the order of the numbers rather than their grouping, meaning it states that the product remains the same regardless of the order of the factors. The Distributive Property involves distributing a multiplication over addition or subtraction, such as $a(b + c) = ab + ac$, which does not speak to how numbers are grouped but rather how they can be combined. The Additive Inverse relates to the principle that a number plus its inverse (or negative) equals zero, which is unrelated to the grouping or order of multiplication.

6. Which type of clouds are found at upper levels of the atmosphere?

A. Cumulonimbus

B. Stratus

C. Cumulus

D. Cirrus

Cirrus clouds are found at upper levels of the atmosphere, typically at altitudes above 20,000 feet. They are thin and wispy in appearance, composed mainly of ice crystals due to the cold temperatures at such elevations. These clouds often indicate fair weather but can also signal the approach of a weather system. In contrast, other cloud types such as cumulus and stratus clouds are generally found at lower altitudes. Cumulonimbus clouds, known for their towering nature and association with thunderstorms, also form at lower to intermediate levels in the atmosphere. Recognizing the characteristics and altitudinal placements of these clouds provides insight into weather patterns and forecasts, making the identification of cirrus clouds as high-altitude formations essential for understanding atmospheric conditions.

7. Which scientific principle is demonstrated by stating that gas pressure increases as temperature increases, assuming volume remains constant?

- A. Ideal Gas Law**
- B. Charles's Law**
- C. Gay Lussac's Law**
- D. Dalton's Law**

The principle that describes the relationship between gas pressure and temperature, assuming the volume of the gas remains constant, is known as Gay-Lussac's Law. This law states that the pressure of a gas is directly proportional to its temperature measured in Kelvin when the volume is unchanged. Hence, as the temperature of the gas increases, the kinetic energy of the gas molecules also increases, resulting in more frequent and forceful collisions with the walls of the container, leading to an increase in pressure. Understanding this principle is key in various scientific applications, such as designing pressurized vessels and understanding weather patterns involving gases. Gay-Lussac's Law effectively captures this direct relationship and highlights the significance of temperature in influencing gas behavior under controlled conditions.

8. Which type of sedimentary rock is considered a secondary rock type?

- A. Igneous**
- B. Sedimentary**
- C. Metamorphic**
- D. All of the above**

The concept of a secondary rock type relates to how rocks are formed and the processes they undergo. In geology, sedimentary rocks are divided into two main categories: primary and secondary. Primary sedimentary rocks are those that form directly from the accumulation and lithification of sediments. Secondary sedimentary rocks, on the other hand, are typically formed from the alteration or reworking of already existing rocks, which can include both metamorphic and sedimentary origins. Metamorphic rocks, which is the correct answer, are formed when existing rocks—either igneous, sedimentary, or other metamorphic rocks—undergo transformation due to heat, pressure, and chemically active fluids. This transformation can lead to the creation of new minerals or structures within the rock, categorizing them as secondary because they exist as a result of the alteration of another rock type. In contrast, igneous rocks form from the solidification of molten material (magma or lava) and do not fit into the category of sedimentary or secondary rocks. While sedimentary rocks can sometimes contribute to the formation of metamorphic rocks, they themselves do not represent a secondary type but rather are categorized as a primary rock type formed from sediments. Thus, the correct identification of metamorphic rocks as

9. What type of rocks are formed from accumulation of small pieces of broken-off pre-existing rocks?

- A. Metamorphic**
- B. Chemical**
- C. Igneous**
- D. Sedimentary**

Sedimentary rocks are formed through the accumulation and compaction of sediments, which often consist of small pieces of broken-off pre-existing rocks. This process occurs over time as sediments are deposited in layers, typically in environments such as riverbeds, lakes, or ocean floors. The weight of the layers above compresses the sediments beneath, and eventually, they solidify into rock. In addition to fragments of other rocks, sedimentary rocks can also be formed from organic materials and chemical processes, but the key feature is their origin from the accumulation of sediments. This distinguishes them from metamorphic rocks, which are formed from existing rocks undergoing changes due to heat and pressure, and igneous rocks, which originate from cooled and solidified magma or lava. Chemical rocks, on the other hand, are specifically formed from the precipitation of minerals from solution, not from the aggregation of rock fragments.

10. What medical condition is characterized by a lack of iron?

- A. Hemophilia**
- B. Leukemia**
- C. Anemia**
- D. Diabetes**

Anemia is the condition characterized by a lack of iron, particularly iron-deficiency anemia, which is one of the most common types. Iron is essential for the body to produce hemoglobin, the protein in red blood cells that carries oxygen. When there is insufficient iron, the body cannot produce enough healthy red blood cells, leading to fatigue, weakness, and pale skin, among other symptoms. The other medical conditions listed do not primarily involve iron deficiency. Hemophilia is a genetic disorder affecting blood clotting, leukemia is a type of cancer affecting blood and bone marrow, and diabetes is a metabolic disorder that affects how the body processes blood sugar. Therefore, anemia directly correlates to a lack of iron, making it the correct response for this question.