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Last Updated on April 2, 2025 EOC Biology Practice Test 2025 Official Study Guide [UPDATED]. Prepare for the End-of-Course (EOC) Biology exam with our updated 2025 practice test. Download the practice PDF, including review questions and answers, to enhance your understanding and test-taking skills. Biology is a crucial subject that allows us to explore life’s complexities and surroundings. Use our comprehensive practice test to ensure you are well-prepared for the EOC Biology exam and increase your chances of success. The End-of-Course (EOC) Biology Test is a vital milestone for students aiming to showcase their expertise and secure academic accomplishments. This test evaluates a student’s command of core concepts, challenging their grasp of topics covered throughout the course. In this article, we will examine the essential aspects of the EOC Biology Practice Test, providing valuable insights and guidance to help students conquer this critical exam. 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Test Name End-of-Course (EOC) Subject Biology Total Items 65 Questions Types MCQs Time Limit either 90 minutes or not timed Passing Score Level 3 or higher Negative Marking N/A Fee N/A The passing score for the EOC Biology Practice Test may vary depending on the specific state or district administering the test. Generally, the minimum passing score ranges from 60-70%. It’s essential to check with your school or local education agency to determine the exact passing score required in your area. How is the score calculated? The EOC Biology Practice Test score is typically calculated based on the total number of questions answered correctly by the student. Here’s an overview of the scoring process: Raw Score: The raw score is determined by counting the number of correct answers. There is no penalty for incorrect answers, so students are encouraged to attempt every question. Scale Score: The raw score is then converted to a scale score. This process involves adjusting the raw score to account for differences in difficulty between various test forms or administration periods. The scale score ensures that results are comparable across different test versions. Performance Level: Based on the scale score, the student’s performance is categorized into specific performance levels. The state or local education agency usually defines these levels and often includes categories like “below proficient,” “proficient,” and “advanced.” How do prep? Here are some essential points to consider when preparing for the EOC Biology Practice Test: Thorough understanding of core concepts: Ensure you have a solid grasp of the main topics, including cellular structure and function, genetics and heredity, evolution and biodiversity, ecology and ecosystems, and biological processes and systems. Time management: To avoid running out of time, allocate appropriate time for each question during the test, with an average of one minute per question. 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Results should have been peer-reviewed and repeated producing the same findings. The results of the investigation should have been published in popular magazines. Explanation: For scientific results to be considered reliable, they should undergo peer review, where other experts in the field critically evaluate the research methodology and findings. Additionally, for validity, the results should be replicable, meaning that other researchers should be able to conduct the same experiment and achieve similar results independently. Communicating the results of experimentation Gathering the data for the investigation Generating explanations of phenomena Planning the investigation and experimentation Explanation: The invention of the microscope revolutionized the gathering of data for scientific investigations by allowing scientists to observe and study microscopic structures and organisms that were previously invisible to the naked eye. This advancement greatly expanded the scope of scientific inquiry and enabled researchers to gather detailed data about biological, cellular, and molecular phenomena. Cell theory has been tested, refined, and observed to be true over hundreds of years Large medical institutions have conducted their own experiments justifying cell theory The basics of cell theory have not changed much since the original experiments What we know about cell theory has been published in reputable journals Explanation: Cell theory, which states that all living organisms are composed of cells, cells are the basic units of structure and function in living organisms, and all cells come from pre-existing cells, has undergone rigorous testing and refinement over centuries. Its principles have been consistently observed and validated through scientific experimentation and observation, leading to confidence in its accuracy among medical professionals. Ionic compounds dissolve easily in water. The volume of water decreases by nearly half when it is frozen. Water molecules repel each other. Water molecules repel most other substances. Explanation: The polar nature of water molecules allows them to form hydrogen bonds with other polar or charged substances, such as ions. This property enables water to dissolve many ionic compounds, making it an effective solvent for a wide range of substances. Flooding would occur and animals would be forced to migrate. Harmful organisms living in water would reproduce at a rapid rate. Organisms that are sensitive to changes in temperature would die. Plants would not have enough water to effectively carry out photosynthesis Explanation: Water's high specific heat capacity helps to stabilize temperatures in aquatic environments and regulate the climate on Earth. If water had a low specific heat instead, it would heat up or cool down much more quickly with changes in energy input. This rapid temperature fluctuation could be detrimental to organisms, particularly those sensitive to temperature changes, potentially leading to their death. If amino acids and nucleic acids both formed If oxygen were slowly added as the experiment progressed If RNA segments that could act as catalysts formed If the mixture were repeatedly heated and cooled Explanation: RNA molecules, particularly ribozymes, can act as catalysts, facilitating chemical reactions necessary for the formation of large organic molecules. If RNA segments capable of catalyzing such reactions formed during a laboratory experiment, they could promote the synthesis of large organic molecules by facilitating the assembly of smaller molecules into larger ones. Loading Questions... It is possible for a cell similar to a modern cell to form under the conditions of the experiment. Modern cells developed from inorganic compounds in the conditions that existed on early Earth. The conditions of their experiment exactly replicated the conditions found on early Earth. The way modern cells function is the only way a cell could be constructed and survive. Explanation: The successful simulation of conditions leading to the formation of a cell with DNA using RNA to produce proteins suggests that it is possible for a cell similar to a modern cell to form under the conditions of the experiment. This conclusion implies that the experiment provided valuable insights into the origins of early life on Earth and the potential pathways for the development of cellular structures and functions. Both are made up of monosaccharide monomers, but lipids are hydrophobic and carbohydrates are hydrophilic. Both consist of carbon, hydrogen, and oxygen, but carbohydrates have repeating structural units and lipids do not. Both contain carbon and hydrogen, but carbohydrates also contain oxygen and lipids contain nitrogen. Both have a carbon backbone, but lipids also have an amino group and carbohydrates have a carboxylic acid group. Explanation: Option B provides an accurate comparison between lipids and carbohydrates. Both lipids and carbohydrates are composed of carbon, hydrogen, and oxygen atoms. However, carbohydrates have repeating structural units (monosaccharides) that form polysaccharides, while lipids do not have such repeating units. This succinctly highlights a key difference in their structural organization. Nucleic acids are used as the building blocks of proteins, while enzymes are used as the building blocks of phospholipids. Nucleic acids contain the genetic code for protein synthesis, while enzymes catalyze chemical reactions. Nucleic acids inhibit biochemical reactions, while enzymes provide structural support in cells. Nucleic acids transmit signals that begin biochemical processes, while enzymes convert carbohydrates into lipids and proteins. Explanation: Option B accurately describes the main differences between nucleic acids and enzymes. Nucleic acids, such as DNA and RNA, carry the genetic information needed for protein synthesis. Enzymes, on the other hand, are proteins that act as biological catalysts, speeding up chemical reactions in living organisms. This explanation succinctly captures the distinct functions of nucleic acids and enzymes in cellular processes. The cell would find a different type of protein to catalyze the reaction. The reaction the protein catalyzes would proceed very slowly or not at all. The reaction the protein catalyzes would only occur in some places in the cell. The reverse reaction of the one the protein catalyzes would begin to proceed. Explanation: Option B is the most likely outcome if a genetic defect prevents a protein catalyst from being produced. Proteins that act as catalysts (enzymes) facilitate biochemical reactions by lowering the activation energy required for the reaction to occur. Without the enzyme, the reaction would proceed much slower or may not occur at all, as the activation energy barrier would be too high for the reaction to proceed efficiently. It allowed for the development of the cell theory. It created a means of funding for cell research. It created public interest and support for research. It proved that cells could form spontaneously. Explanation: The invention of microscopes enabled scientists to observe and study cells, leading to the development of the cell theory, which states that all living organisms are composed of cells, cells are the basic units of structure and function in living organisms, and all cells come from pre-existing cells. This theory revolutionized our understanding of biology and laid the foundation for modern cell biology. Correct Answer Explanation The correct answer is "producers" because algae are photosynthetic organisms that can convert sunlight into energy through the process of photosynthesis. They are able to produce their own food and are at the beginning of the food chain, providing energy for other organisms. Correct Answer Explanation The snake is considered a third-level consumer because it is at the top of the food chain and feeds on a frog that has eaten an insect, which in turn feeds on a plant. In this scenario, the snake is consuming organisms that have already consumed other organisms, making it a third-level consumer. Correct Answer A. Number and kinds of predators in the ecosystem Explanation The number and kinds of predators in an ecosystem can greatly affect the size of a population. Predators feed on other organisms, which can lead to a decrease in the population size of the prey species. The presence of predators can create a selection pressure on the prey population, leading to adaptations such as increased vigilance or defensive mechanisms. Additionally, the types of predators present can also impact the population size, as different predators may have varying hunting strategies and prey preferences. Therefore, the number and kinds of predators in an ecosystem play a crucial role in determining the size of a population. Correct Answer A. The mice became prey to the intoduced snakes, allowing the snake population to increase but decreasing the mice population. Explanation The most likely explanation for the change in population size is that the introduced snakes preyed on the mice, leading to an increase in the snake population and a decrease in the mice population. This is supported by the observation of a decline in field mice presence and an increase in the number of snakes. The introduction of a new predator can disrupt the existing ecosystem dynamics, causing a shift in population sizes. Correct Answer A. The amount to available energy will decrease because fewer primary consumers will survive the lack of vegetation Explanation The correct answer is that the amount of available energy will decrease because fewer primary consumers will survive the lack of vegetation. This is because primary consumers rely on vegetation as their source of food. If the majority of trees in the state park are destroyed by a forest fire, there will be less vegetation available for primary consumers to eat. As a result, fewer primary consumers will be able to survive, leading to a decrease in the amount of energy available for secondary consumers in the ecosystem. Correct Answer A. The salamanders will decrease in number because of the water quality Explanation The flood causing tons of sediment to be suspended in the river will lead to a decrease in water quality. Salamanders require clear freshwater to survive, so the presence of muddy water will likely be detrimental to their health and survival. As a result, the salamander population is most likely to decrease in number due to the poor water quality. Correct Answer A. Mutualism because the flower provides the insect with food, and the insect pollinates the flower Explanation The symbiotic relationship between a flower and the insect that feeds on its nectar is an example of mutualism because both the flower and the insect benefit from the relationship. The flower provides the insect with food in the form of nectar, while the insect pollinates the flower by transferring pollen from one flower to another, aiding in reproduction. This mutually beneficial interaction ensures the survival and reproduction of both the flower and the insect. Correct Answer A. Polar bear populations will decrease, and seal populations will increase Explanation If global warming continues at its present rate, the melting of sea ice will significantly impact polar bears. As their main resting spot disappears, polar bears will have a harder time hunting for seals, their main source of food. This will lead to a decrease in polar bear populations. On the other hand, the increase in temperature and melting sea ice may benefit seal populations. With less ice cover, seals may have more access to open water and be able to find more food, resulting in an increase in seal populations. Correct Answer Explanation When a population exceeds the carrying capacity of its environment, it means that there are more individuals than the available resources can support. This leads to increased competition for resources such as food, water, and shelter. As a result, some individuals may not be able to access enough resources to survive, leading to an increase in the death rate. This helps to regulate the population size and bring it back in line with the carrying capacity of the environment. Correct Answer Explanation Species preservation is not a threat to biodiversity because it involves the conservation and protection of species, which helps maintain biodiversity. Biological magnification of toxic compounds, habitat fragmentation, and invasive species, on the other hand, can all have negative impacts on biodiversity. Biological magnification can lead to the accumulation of harmful substances in the food chain, habitat fragmentation can disrupt ecosystems and lead to loss of species, and invasive species can outcompete native species and cause their decline. Correct Answer A. It would decrease considerably since the finches are specifically adapted to their niche Explanation The cactus finches have specifically adapted to their niche of eating insects off cactus plants. If a disease kills off most of the cacti, the food source for the finches would significantly decrease. As a result, the carrying capacity of the island would decrease considerably because there would not be enough resources to support the population of cactus finches. Correct Answer A. Because of the competitive exclusion principle Explanation The competitive exclusion principle states that two species cannot occupy the same niche in the same habitat at the same time. This is because if two species have identical niches, they will compete for the same resources, such as food, water, and shelter. In such a competition, one species will eventually outcompete and eliminate the other species, leading to the exclusion of one species from that particular niche. Therefore, the correct answer is "because of the competitive exclusion principle." Correct Answer A. Secondary succession begins on soil, and primary succession begins on newly exposed surfaces Explanation Primary succession refers to the process of ecological succession that occurs in an area where no soil or organisms exist, such as after a volcanic eruption or glacial retreat. In this type of succession, the colonization of pioneer species, such as lichens and mosses, begins on newly exposed surfaces, such as rocks. Over time, as these pioneer species die and decompose, they contribute to the formation of soil, allowing for the establishment of more complex plant and animal communities. Secondary succession, on the other hand, occurs in areas where soil remains intact after a disturbance, such as a forest fire or clear-cutting. In this type of succession, the process begins on pre-existing soil, which already contains organic matter and a seed bank. This allows for a more rapid recolonization by a variety of plant and animal species compared to primary succession. Therefore, the correct answer is: Secondary succession begins on soil, and primary succession begins on newly exposed surfaces. Correct Answer Explanation While many living things exhibit movement, it's not a universal characteristic of life. Plants, for example, are stationary yet possess all the other essential traits of living organisms: they are made up of cells, they reproduce, they grow and develop, they obtain and use energy, they respond to their environment, and they maintain homeostasis. Quiz Review Timeline (Updated): Jan 9, 2025 + Our quizzes are rigorously reviewed, monitored and continuously updated by our expert board to maintain accuracy, relevance, and timeliness. Jan 09, 2025 Quiz Edited byProProfs Editorial Team Expert Reviewed byStephen Reinbold Here is a 208 page document that reviews each and every biology standard. This is not my own, this document was created by a textbook publisher and passed on to teachers from the administration. At the conclusion of each standard you will find a few questions that test yor knowledge and serve as examples of the type of questions you may asked on the EOC. Perhaps the most useful part lies near the end of the document, there you will find two practice exams each with an answer key at the end of the document. NOTICE I will also post below the answer key separately with the standards attached to each question, this way when you miss a question you can back and review that standard. This is the third practice exam and comes to us from Florida Virtual Schools. County Midterm Practice Questions A colleague of mine put this together last minute, it is not perfect but at this point something is better than nothing. The following is her message to me regarding the document above: "Warning... the numbers don't match up with the slides (or Teacher edition.) Have the students do this by slide number if you are having them do this to turn in. Also, #13, D, Cell Wall is different on their options, answer on Teacher edition is D, Ribosomes.Warning #2- Preview it. Some of the questions and answers are not great." Practice Questions (Answer Key) Midterm Topics & Tutorials Last Updated on April 2, 2025 EOC Biology Practice Test 2025 Official Study Guide [UPDATED]. Prepare for the End-of-Course (EOC) Biology exam with our updated 2025 practice test. Download the practice PDF, including review questions and answers, to enhance your understanding and test-taking skills. Biology is a crucial subject that allows us to explore life’s complexities and surroundings. Use our comprehensive practice test to ensure you are well-prepared for the EOC Biology exam and increase your chances of success. The End-of-Course (EOC) Biology Test is a vital milestone for students aiming to showcase their expertise and secure academic accomplishments. 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