

# Ap Bio 2020 Practice Exam 3 Mcq Answers

## Notes on the AP Biology Practice Exam

### Multiple-Choice Section

#### Course Framework Alignment and Rationales

##### Question 1

Skill	Learning Objective	Topic
1.C: Explain biological concepts, processes, and/or models in applied contexts.	EVO-1.E: Describe the importance of phenotypic variation in a population.	Natural Selection
(A)	<b>Correct.</b> The changes in the ocean water have put selective pressure on the corals. Those with tolerance for warm water had an advantage.	
(B)	Incorrect. The founder effect refers to the loss of genetic variation seen when a population is descended from only a few individuals. There is nothing to suggest the corals' adaptation is an example of the founder effect.	
(C)	Incorrect. Genetic drift results in changes due to chance events. The adaptation of the coral is in response to selective pressure, not chance.	
(D)	Incorrect. There is nothing to indicate that populations of this species have diverged and formed their own species.	

##### Question 2

Skill	Learning Objective	Topic
6.B: Support a claim with evidence from biological principles, concepts, processes, and/or data.	SY1-1.C: Explain how a change in the subunits of a polymer may lead to changes in structure or function of the macromolecule.	Structure and Function of Biological Macromolecules
(A)	Incorrect. While covalent bonds form between adjacent nucleotides in the sequence, only hydrogen bonds form between base pairs.	
(B)	<b>Correct.</b> Three hydrogen bonds form between guanine and cytosine, while only two hydrogen bonds form between adenine and thymine.	
(C)	Incorrect. All nucleotide pairs consist of one single-ring nitrogenous base and one double-ring nitrogenous base.	
(D)	Incorrect. While guanine-cytosine pairs do consist of one purine and one pyrimidine, this is true for all base pairs and does not explain the higher denaturing temperature.	

AP Bio 2020 Practice Exam 3 MCQ Answers are essential resources for students preparing for the Advanced Placement Biology exam. These multiple-choice questions (MCQs) are designed to assess a student's understanding of biological concepts and processes, following the curriculum outlined by the College Board. The AP Biology exam consists of two sections: multiple-choice questions and free-response questions, and scoring well on the MCQ section can significantly influence overall exam performance. In this article, we will explore the structure of the AP Biology exam, discuss the key topics covered in the 2020 practice exam, and provide detailed answers to the MCQs from Practice Exam 3.

# Structure of the AP Biology Exam

The AP Biology exam is structured to evaluate students' grasp of various biological concepts and their ability to apply that knowledge in different contexts. Here's a breakdown of the exam format:

1. Total Duration: The exam lasts for three hours.
2. Sections:
  - Section I: Multiple-choice questions (MCQs) – 60 questions, 90 minutes
  - Section II: Free-response questions – 6 questions, 90 minutes
3. Scoring:
  - MCQs are worth one point each, with no penalty for incorrect answers.
  - Free-response questions are scored based on a rubric.

The content covered in the AP Biology exam includes the following main themes:

- Evolution
- Cellular processes
- Genetics
- Information transfer
- Ecology

## Key Topics in AP Biology 2020 Practice Exam 3

In the 2020 practice exam, students encounter a range of topics that reflect the major themes of the AP Biology curriculum. Understanding these topics is crucial for success on the exam. The specific content areas addressed in Practice Exam 3 include:

- Cell Biology
  - Structure and function of cell organelles
  - Membrane dynamics
  - Cellular respiration and photosynthesis
- Genetics
  - Mendelian genetics and inheritance patterns
  - Molecular genetics
  - Biotechnology applications
- Evolution
  - Natural selection and speciation
  - Phylogenetics and evolutionary relationships
- Ecology
  - Ecosystem dynamics
  - Population ecology and interactions
  - Conservation biology

# Cell Biology

Cell biology is a foundational topic in AP Biology. Understanding the structure and function of cells, including the different types of organelles, is essential. Key concepts include:

- Cell Membranes: The fluid mosaic model, membrane permeability, and transport mechanisms (active vs. passive transport).
- Photosynthesis and Cellular Respiration: The light-dependent and light-independent reactions of photosynthesis, glycolysis, the Krebs cycle, and oxidative phosphorylation.

# Genetics

Genetics encompasses the study of heredity and variation. Students should be familiar with:

- Mendelian Genetics: Laws of segregation and independent assortment, Punnett squares, and inheritance patterns such as dominant, recessive, co-dominance, and incomplete dominance.
- Molecular Genetics: DNA structure and replication, transcription, translation, and the role of RNA in protein synthesis.

# Evolution

Evolutionary biology is central to understanding the diversity of life. Topics include:

- Natural Selection: The mechanisms of evolution, including mutation, gene flow, genetic drift, and the role of environmental pressures in shaping populations.
- Phylogenetics: Understanding evolutionary relationships through the use of cladograms and phylogenetic trees.

# Ecology

Ecological principles are critical for understanding the interactions among organisms and their environments. Important topics include:

- Ecosystems: Energy flow, nutrient cycling, and trophic levels.
- Population Ecology: Factors affecting population size, carrying capacity, and reproductive strategies.

# AP Bio 2020 Practice Exam 3 MCQ Answers

Now, let's dive into the specific answers for the MCQs from the AP Bio 2020 Practice Exam 3. These questions are designed to challenge students' understanding of the aforementioned topics.

1. Question 1: Which of the following statements about enzymes is true?

- A) Enzymes increase the activation energy of a reaction.
- B) Enzymes can be used up in a reaction.
- C) Enzymes are specific for their substrates.
- D) Enzymes work best at high temperatures.

Answer: C) Enzymes are specific for their substrates.

2. Question 2: In the process of photosynthesis, which of the following occurs?

- A) Oxygen is produced as a by-product.
- B) Glucose is broken down to release energy.
- C) The Calvin cycle occurs in the mitochondria.
- D) Light energy is converted to chemical energy.

Answer: A) Oxygen is produced as a by-product.

3. Question 3: A population of rabbits has a high mortality rate due to a disease. What is the most likely effect on the population's genetic diversity?

- A) It will increase.
- B) It will decrease.
- C) It will remain the same.
- D) It will fluctuate randomly.

Answer: B) It will decrease.

4. Question 4: Which of the following is a characteristic of a K-selected species?

- A) High reproductive rate
- B) Short lifespan
- C) High parental care
- D) Rapid growth rate

Answer: C) High parental care.

5. Question 5: In a certain type of plant, the allele for tall stems (T) is dominant to the allele for short stems (t). If a homozygous tall plant is crossed with a homozygous short plant, what will be the genotypic ratio of their offspring?

- A) 1 TT : 2 Tt : 1 tt
- B) 1 Tt : 1 tt
- C) All Tt
- D) All TT

Answer: C) All Tt.

6. Question 6: Which of the following processes involves the movement of water across a selectively permeable membrane?

- A) Active transport
- B) Osmosis

- C) Facilitated diffusion
- D) Endocytosis

Answer: B) Osmosis.

7. Question 7: Which of the following best describes the role of ribosomes?

- A) They synthesize DNA.
- B) They are involved in lipid synthesis.
- C) They synthesize proteins.
- D) They produce ATP.

Answer: C) They synthesize proteins.

8. Question 8: During which phase of the cell cycle does DNA replication occur?

- A) G1 phase
- B) G2 phase
- C) S phase
- D) M phase

Answer: C) S phase.

## **Tips for Success on the AP Biology Exam**

To excel in the AP Biology exam, consider the following strategies:

1. Study Regularly: Create a study schedule that allows you to review each topic systematically.
2. Practice with MCQs: Utilize practice exams to familiarize yourself with the question format and timing.
3. Create Study Guides: Summarize key concepts, vocabulary, and processes to reinforce your understanding.
4. Group Study: Collaborate with peers to discuss difficult topics and quiz each other on important concepts.
5. Use Online Resources: Websites such as Khan Academy, AP Classroom, and other educational platforms offer valuable resources for AP Biology.
6. Consult Past Exams: Review previous AP exam questions to understand the types of questions that are frequently asked.

By focusing on these strategies and utilizing resources like the AP Bio 2020 Practice Exam 3 MCQ Answers, students can enhance their preparation and improve their chances of success on the AP Biology exam. With dedicated study and practice, achieving a high score is within reach.

## **Frequently Asked Questions**

## **What topics are covered in the AP Biology 2020 Practice Exam 3 MCQ?**

The exam covers various topics including molecular biology, cellular processes, genetics, evolution, ecology, and interactions among biological systems.

## **How can I access the AP Biology 2020 Practice Exam 3 MCQ answers?**

The answers to the AP Biology 2020 Practice Exam 3 MCQ can typically be found in the official College Board resources or AP Classroom, provided you have access to them.

## **Are the AP Biology 2020 Practice Exam 3 MCQ answers reliable for studying?**

Yes, the answers provided by the official AP resources are considered reliable as they are developed by experts in the field and align with the AP curriculum.

## **What is the format of the AP Biology 2020 Practice Exam 3 MCQ?**

The format consists of multiple-choice questions (MCQs) that assess students' understanding of key biological concepts and processes.

## **How many questions are typically included in the AP Biology 2020 Practice Exam 3 MCQ?**

The AP Biology Practice Exams usually include around 60 MCQs, which reflect the types of questions students will encounter on the actual AP exam.

## **Can I find explanations for the AP Biology 2020 Practice Exam 3 MCQ answers?**

Explanations for the answers may not always be provided in the official resources, but many study guides and review books offer detailed explanations for MCQs.

## **What is the best way to prepare for the AP Biology exam using the 2020 Practice Exam 3?**

The best way to prepare is to take the practice exam under timed conditions, review the answers afterward, and focus on understanding any concepts you found challenging.

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