

NEET Biology Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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Table of Contents

Copyright	1
Table of Contents	2
Introduction	3
How to Use This Guide	4
Questions	5
Answers	8
Explanations	10
Next Steps	16

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Name the protein that helps in the transport of oxygen in the blood.**
 - A. Albumin**
 - B. Myoglobin**
 - C. Hemoglobin**
 - D. Globulin**

- 2. What is the primary role of neurotransmitters in the nervous system?**
 - A. To create new neurons**
 - B. To store memories**
 - C. To transmit signals across synapses between neurons**
 - D. To regulate hormonal levels**

- 3. What type of plants are known to have adaptations to dry environments?**
 - A. Xerophytes**
 - B. Hydrophytes**
 - C. Mesophytes**
 - D. Halophytes**

- 4. What type of respiration would yeast undergo in an oxygen-rich environment?**
 - A. Aerobic respiration**
 - B. Anaerobic respiration**
 - C. Fermentation**
 - D. Cellular respiration**

- 5. According to Oparin, which of the following gases was not present in the Earth's primitive atmosphere?**
 - A. Nitrogen**
 - B. Hydrogen**
 - C. Oxygen**
 - D. Methane**

- 6. What is the main function of the large intestine?**
- A. To digest proteins**
 - B. To absorb water and form feces**
 - C. To break down carbohydrates**
 - D. To synthesize vitamins**
- 7. What is the smallest unit of matter that retains the properties of an element?**
- A. Molecule**
 - B. Compound**
 - C. Atom**
 - D. Cell**
- 8. What is the primary function of fat in the human body?**
- A. Protein synthesis**
 - B. Energy storage and insulation**
 - C. Hormone production**
 - D. Cell structure maintenance**
- 9. Which macromolecule is most abundant in the structure of cell membranes?**
- A. Carbohydrates**
 - B. Proteins**
 - C. Nucleic acids**
 - D. Phospholipids**
- 10. What is the primary function of chlorophyll in plants?**
- A. Water absorption**
 - B. Photosynthesis**
 - C. Root development**
 - D. Respiration**

Answers

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

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Explanations

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1. Name the protein that helps in the transport of oxygen in the blood.

A. Albumin

B. Myoglobin

C. Hemoglobin

D. Globulin

Hemoglobin is the protein responsible for the transport of oxygen in the blood. It is found in red blood cells and consists of four polypeptide chains, each containing a heme group that can bind to oxygen. When blood passes through the lungs, hemoglobin binds to oxygen molecules, forming oxyhemoglobin. This highly efficient mechanism allows hemoglobin to pick up oxygen where it is abundant and release it where it is needed, such as in tissues where oxygen levels are lower. In addition to transporting oxygen, hemoglobin also plays a role in transporting carbon dioxide, a waste product of metabolism, from tissues back to the lungs. The ability to carry both oxygen and carbon dioxide is crucial for maintaining the body's pH balance and supporting cellular respiration. While albumin primarily functions as a carrier protein for various substances in the blood, myoglobin is more specialized for oxygen storage in muscle tissues rather than transport. Globulins are a group of proteins involved in immune functions and transport but do not specifically serve the primary role of oxygen transport that hemoglobin does. Thus, the unique structure and function of hemoglobin make it the key protein for oxygen transport in the blood.

2. What is the primary role of neurotransmitters in the nervous system?

A. To create new neurons

B. To store memories

C. To transmit signals across synapses between neurons

D. To regulate hormonal levels

Neurotransmitters play a crucial role in the nervous system by transmitting signals across synapses, which are the junctions between neurons. When a neuron is activated, it releases neurotransmitters into the synaptic cleft. These chemical messengers then bind to specific receptors on the postsynaptic neuron, leading to various responses such as muscle contraction, initiation or inhibition of action potentials, and modulation of mood and cognition. This process is fundamental for communication within the nervous system, allowing for rapid and precise control of numerous functions, including reflexes, sensory processing, and complex behaviors. Without neurotransmitters, the ability of neurons to communicate and transmit information effectively would be severely impaired, which could disrupt the entire nervous system's functioning. The other options, while related to brain functions, do not directly describe the primary role of neurotransmitters. Creating new neurons refers to neurogenesis, storing memories involves complex processes in the brain, and regulating hormonal levels pertains to the endocrine system rather than the specific function of neurotransmitters in neuronal communication.

3. What type of plants are known to have adaptations to dry environments?

- A. Xerophytes**
- B. Hydrophytes**
- C. Mesophytes**
- D. Halophytes**

Xerophytes are the type of plants that have developed specific adaptations to thrive in dry environments where water is scarce. These adaptations enable them to conserve water and survive in conditions that would be detrimental to other types of plants. Common examples of xerophytic adaptations include thick, waxy cuticles that minimize water loss, reduced leaf surface area to limit transpiration, and specialized structures like stomata that can close during the hottest part of the day to further restrict water loss.

Additionally, xerophytes may have deep root systems to access underground water sources or modified photosynthesis processes that are more efficient in arid conditions. In contrast, hydrophytes are plants that live in water or very moist environments and would not be suited to dry conditions. Mesophytes thrive in moderate moisture environments, which means they require a balanced level of water and cannot adapt well to extreme dryness. Halophytes are plants that live in saline environments, like salt marshes, and while they can tolerate high salt levels, they don't necessarily have adaptations specific to dry conditions. Therefore, xerophytes are specifically adapted for survival and growth in arid environments, making them the correct choice.

4. What type of respiration would yeast undergo in an oxygen-rich environment?

- A. Aerobic respiration**
- B. Anaerobic respiration**
- C. Fermentation**
- D. Cellular respiration**

Yeast primarily undergo aerobic respiration when they are in an oxygen-rich environment. This process involves the complete oxidation of glucose to produce carbon dioxide, water, and a significant amount of energy (ATP). In aerobic respiration, glucose is broken down in the presence of oxygen, utilizing pathways like glycolysis, the Krebs cycle, and the electron transport chain. Aerobic respiration is efficient and yields a greater amount of ATP compared to anaerobic processes. It allows yeast to maximize energy production, which is especially advantageous for growth and reproduction when oxygen is available. This type of metabolism supports the yeast's needs for energy and is often preferred when oxygen is abundant, making it the optimal choice in such conditions. In contrast, options like anaerobic respiration (which occurs in the absence of oxygen) and fermentation (a process that some yeasts perform to generate energy without oxygen, producing alcohol or lactic acid) are not utilized in an environment where oxygen is present and plentiful. Cellular respiration is a broad term that encompasses both aerobic and anaerobic processes, but in the specific context of an oxygen-rich environment, the dominant process is aerobic respiration.

5. According to Oparin, which of the following gases was not present in the Earth's primitive atmosphere?

- A. Nitrogen**
- B. Hydrogen**
- C. Oxygen**
- D. Methane**

Oparin's theory on the origin of life posits that the Earth's primitive atmosphere was quite different from what we have today. He suggested that early atmospheric conditions lacked free oxygen, which is fundamentally important for understanding the early biochemical processes that could have led to the formation of life. Free oxygen is a byproduct of photosynthesis and was not prevalent in the primordial atmosphere. Instead, the atmosphere was primarily composed of gases like methane, ammonia, hydrogen, and nitrogen. The absence of oxygen created a reducing environment, which Oparin argued would have been conducive to the synthesis of organic compounds. The presence of nitrogen, hydrogen, and methane is consistent with Oparin's hypothesis, whereas the lack of free oxygen aligns with the notion that biological material needed to evolve in an environment where oxidative processes were minimal. This understanding is crucial for the context of early Earth's atmosphere and the development of life.

6. What is the main function of the large intestine?

- A. To digest proteins**
- B. To absorb water and form feces**
- C. To break down carbohydrates**
- D. To synthesize vitamins**

The primary function of the large intestine is to absorb water and electrolytes from the indigestible food matter that arrives from the small intestine. This process is crucial for maintaining the body's hydration and electrolyte balance. As the large intestine absorbs water, the remaining material becomes more solid and is transformed into feces. Furthermore, the large intestine also plays a significant role in the fermentation of unabsorbed material by the gut microbiota, which contributes to the production of certain short-chain fatty acids and gases. While it does participate in some synthesis of vitamins through the actions of beneficial bacteria, the main and most critical function remains the absorption of water and the formation of feces. This function ensures that the body retains essential fluids while efficiently disposing of waste products, making it a vital component of the digestive system.

7. What is the smallest unit of matter that retains the properties of an element?

- A. Molecule**
- B. Compound**
- C. Atom**
- D. Cell**

The smallest unit of matter that retains the properties of an element is an atom. Atoms are the basic building blocks of all matter and are composed of protons, neutrons, and electrons. Each element is defined by the number of protons in its nucleus, which determines its identity and properties. For instance, an atom of carbon will always have six protons, and this unique arrangement of subatomic particles gives carbon its characteristic chemical behavior. Molecules and compounds, while they are indeed forms of matter, are made up of two or more atoms bonded together. Molecules are formed from the same element or different elements, and compounds specifically refer to molecules composed of different elements. In both cases, the properties of the resulting substance can be different from those of the individual elements that compose them. Cells are the structural and functional units of living organisms and are much larger and more complex than atoms. Cells comprise various molecules, including proteins, lipids, carbohydrates, and nucleic acids, which are themselves made up of atoms. Thus, an atom is the fundamental unit that maintains the specific properties associated with each element, setting it apart from molecules, compounds, and cells.

8. What is the primary function of fat in the human body?

- A. Protein synthesis**
- B. Energy storage and insulation**
- C. Hormone production**
- D. Cell structure maintenance**

Fat primarily serves as a critical energy source and is essential for insulation in the human body. It provides a concentrated form of energy, yielding more than double the energy per gram compared to carbohydrates and proteins. This energy reserve becomes particularly important during times when food is scarce or during prolonged physical activity. In addition to energy storage, fat plays a vital role in insulating the body, helping to maintain a stable internal temperature by providing a layer of insulation beneath the skin. This function is crucial for protecting internal organs and ensuring that the body can effectively regulate its temperature in varying environmental conditions. While fat is also involved in hormone production and contributes to cell structure maintenance, these roles are secondary to its primary functions of energy storage and insulation. Hormones can be synthesized from lipids, and fats are integral to cell membrane structure; however, these processes rely on the energy reserves that fat provides, highlighting its foundational importance in overall bodily function.

9. Which macromolecule is most abundant in the structure of cell membranes?

- A. Carbohydrates**
- B. Proteins**
- C. Nucleic acids**
- D. Phospholipids**

Phospholipids are the most abundant macromolecules in the structure of cell membranes, primarily due to their unique amphipathic nature. A phospholipid molecule consists of a hydrophilic ("water-loving") phosphate head and two hydrophobic ("water-repelling") fatty acid tails. This structure allows phospholipids to arrange themselves into a bilayer, with the hydrophilic heads facing outward towards the aqueous environment, while the hydrophobic tails face inward, away from water. This bilayer formation is crucial for creating a semi-permeable membrane that separates the internal environment of the cell from the external surroundings. The fluid mosaic model of cell membranes depicts this arrangement, where phospholipids provide the foundational matrix in which various proteins and carbohydrates are embedded, giving the membrane its characteristic fluidity and functionality. While proteins and carbohydrates are also integral to the function of cell membranes, they are present in comparatively lower amounts than phospholipids. Proteins perform essential roles in transport, signaling, and structural support, and carbohydrates are involved in cell recognition and signaling, but the foundational structure primarily relies on the phospholipid bilayer. Nucleic acids, such as DNA and RNA, do not play a direct structural role

10. What is the primary function of chlorophyll in plants?

- A. Water absorption**
- B. Photosynthesis**
- C. Root development**
- D. Respiration**

The primary function of chlorophyll in plants is photosynthesis. Chlorophyll is a green pigment found in the chloroplasts of plant cells, and it plays a crucial role in the process of converting light energy into chemical energy. Through photosynthesis, chlorophyll absorbs light, primarily from the blue and red wavelengths of the spectrum, and uses this energy to convert carbon dioxide and water into glucose and oxygen. This process not only provides food for the plant but also releases oxygen into the atmosphere, which is essential for the survival of aerobic organisms, including humans. The other options relate to processes that, while important for plant life, do not directly involve chlorophyll. Water absorption is facilitated by roots and does not require chlorophyll. Root development is concerned with the growth and structure of roots, again unrelated to chlorophyll's function. Respiration is the process by which plants convert glucose into energy, and although it occurs in plant cells, it does not directly involve chlorophyll. Thus, the unique ability of chlorophyll to capture light energy and drive photosynthesis makes it essential for plant growth and the ecosystem as a whole.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://neetbiology.examzify.com>

We wish you the very best on your exam journey. You've got this!

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