PYQ-NEET PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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.

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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!

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Questions

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1. In which cellular structure is double stranded circular DNA found?

A. Nucleus

B. Ribosome

C. Mitochondria

D. Lysosome

2. Which of the following ecosystems is most easily damaged but can recover over time?

A. Coral reefs

B. Wetlands

C. Forests

D. Grasslands

3. Facial isomerism is associated with which type of complex?

A. MA3B3

B. MA2B2

C. MA4B2

D. MA2B6

4. In what phase of mitosis do chromosomes align at the cell's equatorial plane?

A. Prophase

B. Anaphase

C. Metaphase

D. Telophase

5. What is the primary component of the cell wall in plants?

A. Protein

B. Chitin

C. Cellulose

D. Lignin

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6. Which family does Poaceae, commonly known for cereals, belong to?

A. Fabaceae

B. Rosaceae

C. Asteraceae

D. Poaceae

7. What are the two main types of genetic inheritance?

A. Autosomal and mitochondrial inheritance

B. Autosomal and sex-linked inheritance

C. Sex-linked and polygenic inheritance

D. Mitochondrial and epigenetic inheritance

8. What occurs during the capacitation of sperm?

A. Increasing motility of sperm

B. Decreasing the chance of fertilization

C. Formation of the acrosome reaction

D. Decreasing the sperm lifespan

9. During aerobic respiration, which element does pyruvate dehydrogenase require?

A. Iodine

B. Magnesium

C. Calcium

D. Nitrogen

10. What did the Air Act amend in 1987 to include?

A. Water as a pollutant

B. Noise as pollutants

C. Soil as a pollutant

D. Light as a pollutant

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Answers

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

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Explanations

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1. In which cellular structure is double stranded circular DNA found?

A. Nucleus

B. Ribosome

C. Mitochondria

D. Lysosome

Double-stranded circular DNA is found in mitochondria, which is a unique feature of these organelles. Mitochondria are known as the powerhouses of the cell because they generate ATP (adenosine triphosphate) through aerobic respiration. Unlike the linear DNA present in the nucleus, mitochondrial DNA (mtDNA) is circular and resembles the DNA of prokaryotes. This similarity supports the endosymbiotic theory, which proposes that mitochondria were once free-living bacteria that were engulfed by ancestral eukaryotic cells. In contrast, the other cellular structures do not contain double-stranded circular DNA. The nucleus houses linear DNA organized into chromosomes, ribosomes are primarily composed of RNA and proteins essential for protein synthesis, and lysosomes contain enzymes for digestion but do not have any DNA. Therefore, the presence of double-stranded circular DNA is a defining characteristic of mitochondria, making them distinct among cellular organelles.

2. Which of the following ecosystems is most easily damaged but can recover over time?

A. Coral reefs

B. Wetlands

C. Forests

D. Grasslands

Wetlands are recognized as ecosystems that can be easily damaged but possess the ability to recover over time. They provide vital ecological services, such as water filtration, flood control, and habitat for diverse species. However, they are particularly sensitive to disturbances, including pollution, drainage for agriculture, and habitat alteration. When these ecosystems are disturbed, their complex hydrology and biotic interactions can be disrupted, leading to immediate negative impacts on water quality and biodiversity. Despite this vulnerability, wetlands have a remarkable capacity for regeneration. With appropriate management and restoration practices, they can gradually return to a more stable state, allowing for the re-establishment of plant and animal communities. In contrast, coral reefs, while also sensitive and subject to damage from climate change, pollution, and overfishing, typically require longer recovery periods due to their complex structures and the slow growth rates of corals. Forests may be resilient in some instances but often take many years to recover after significant disturbances such as logging or intense fires. Grasslands can regenerate, but their recovery can be impeded by invasive species and human activities. Thus, wetlands exemplify an ecosystem that is particularly at risk from human influence while still having the potential for recovery, making them a significant focal point for conservation efforts

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3. Facial isomerism is associated with which type of complex?

A. MA3B3

B. MA2B2

C. MA4B2

D. MA2B6

Facial isomerism occurs in octahedral complexes where two types of ligands are present, and specifically, it is observed in complexes of the type MA3B3. In these complexes, the three identical ligands (A) can occupy one face of the octahedron, while the three other identical ligands (B) occupy the opposite face. This arrangement creates two distinct arrangements of ligands, allowing for the possibility of geometrical isomers, specifically facial and meridional isomers. The facial isomer has all three identical ligands on one face of the octahedron, while the meridional isomer has the identical ligands arranged around the equator. The ability to form such distinct groups of ligands based on their spatial arrangement is what defines facial isomerism. In contrast, the other options represent complex types that do not facilitate facial isomerism. For instance, MA2B2 and MA4B2 complexes arrange their ligands differently and do not have the same potential for isomerism as an MA3B3 complex. MA2B6 also does not showcase facial isomerism due to having more dominant ligand types that fill the octahedral coordination sphere. Therefore, MA3B

4. In what phase of mitosis do chromosomes align at the cell's equatorial plane?

A. Prophase

B. Anaphase

C. Metaphase

D. Telophase

During mitosis, chromosomes align at the cell's equatorial plane during the metaphase. This is a critical stage where the chromosomes, which have already been replicated and condensed, are arranged along the middle of the cell, known as the metaphase plate. In this phase, spindle fibers attached to the kinetochores of the chromosomes ensure that each chromosome aligns precisely at the center of the cell. This alignment is essential for ensuring that when the chromosomes are pulled apart to opposite poles in the subsequent anaphase, each daughter cell receives an identical set of chromosomes. This precise organization during metaphase is crucial for maintaining genetic stability in the daughter cells. If the chromosomes were not properly aligned, it could lead to unequal distribution of genetic material, which can result in conditions such as aneuploidy.

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5. What is the primary component of the cell wall in plants?

A. Protein

B. Chitin

C. Cellulose

D. Lignin

The primary component of the cell wall in plants is cellulose. Cellulose is a complex carbohydrate, specifically a polysaccharide formed from long chains of glucose molecules. It provides structural support, rigidity, and strength to plant cells, allowing them to maintain their shape and resist external pressure. In the plant cell wall, cellulose fibers form a rigid framework. This is essential for the plant's overall structure and integrity, as it helps the plant stand upright and grow towards sunlight. The arrangement of cellulose molecules also plays a vital role in water regulation within plant cells, contributing to the plant's ability to withstand various environmental conditions. While proteins, chitin, and lignin are also important cellular components in various contexts, they do not serve as the primary structural component in plant cell walls. Proteins may be involved in structural roles and cell signaling, chitin is found in the cell walls of fungi and not in plants, and lignin is present in secondary cell walls, providing additional strength and resistance to decay but is not the main component of the primary cell wall in most plants. Therefore, cellulose is the correct answer as it is the foundational element that makes plant cell walls functionally and structurally unique.

6. Which family does Poaceae, commonly known for cereals, belong to?

A. Fabaceae

B. Rosaceae

C. Asteraceae

D. Poaceae

Poaceae is the scientific name for the grass family, which includes a wide variety of grasses and is particularly known for its members that produce cereals, such as wheat, rice, corn, and oats. This family plays a crucial role in agriculture and food production worldwide due to its importance in providing staple foods. The members of Poaceae are characterized by specific features such as hollow stems, narrow leaves with parallel venation, and flowering structures known as inflorescences. This family encompasses many economically important species that serve as major sources of carbohydrates in the human diet. This makes the identification of Poaceae as the correct answer clear, as it directly correlates to the family in question regarding cereals. In contrast, the other families listed—Fabaceae (legumes), Rosaceae (roses and related plants), and Asteraceae (daisies and sunflowers)—do not primarily encompass the grass species and cereals that are the hallmark of Poaceae. Each of those families is distinct in its own right, with its own unique characteristics and members, further highlighting why Poaceae specifically is the correct choice when discussing cereals.

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7. What are the two main types of genetic inheritance?

A. Autosomal and mitochondrial inheritance

B. Autosomal and sex-linked inheritance

C. Sex-linked and polygenic inheritance

D. Mitochondrial and epigenetic inheritance

The two main types of genetic inheritance refer to how traits and characteristics are passed down through generations, and the most commonly recognized categories are autosomal inheritance and sex-linked inheritance. Autosomal inheritance involves genes located on the autosomes, which are the non-sex chromosomes. Traits that follow this pattern can be dominant or recessive and affect both males and females equally. For instance, a dominant trait can appear in an individual even if only one copy of the gene is present, while a recessive trait typically appears only when an individual has two copies of the gene. Sex-linked inheritance, on the other hand, involves genes located on the sex chromosomes (X and Y chromosomes). Traits that follow this inheritance pattern may exhibit different patterns of expression in males and females due to the presence of one X and one Y chromosome in males and two X chromosomes in females. A well-known example of sex-linked inheritance is color blindness, which is more prevalent in males because they have only one X chromosome. The other options include terms that either represent specific mechanisms or types of inheritance that are not considered the two main types. For instance, mitochondrial inheritance refers to the transmission of genetic information found in mitochondria, distinct from classical Mendelian inheritance. Polygenic inheritance refers to traits that are

8. What occurs during the capacitation of sperm?

A. Increasing motility of sperm

B. Decreasing the chance of fertilization

C. Formation of the acrosome reaction

D. Decreasing the sperm lifespan

Capacitation is a crucial physiological process that sperm undergo in order to gain the ability to fertilize an egg. During capacitation, several key changes occur in sperm that enhance their motility, which is vital for navigating through the female reproductive tract to reach the oocyte. The changes include the destabilization of the sperm membrane, which allows for the enhancement of motility and prepares the sperm for the acrosome reaction—a process needed to penetrate the egg's protective layers. As sperm undergo capacitation, factors such as increased intracellular calcium levels and changes in the permeability of the sperm membrane occur, all of which contribute to improved movement and swimming vigor. This increase in motility is essential because it facilitates the sperm's ability to travel great distances within the female reproductive system, ultimately leading to a successful encounter with the ovum. The other options do not accurately represent the primary purpose of capacitation. While the acrosome reaction is indeed a crucial step that follows capacitation, it is not part of the capacitation process itself. Capacitation does not decrease the chance of fertilization; instead, it increases the likelihood. Similarly, capacitation does not decrease sperm lifespan; on the contrary, it's a necessary maturation step that enables successful fertilization, and

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9. During aerobic respiration, which element does pyruvate dehydrogenase require?

A. Iodine

B. Magnesium

C. Calcium

D. Nitrogen

During aerobic respiration, pyruvate dehydrogenase plays a crucial role in converting pyruvate, derived from glycolysis, into acetyl-CoA, which then enters the citric acid cycle. This enzyme is a multi-enzyme complex that catalyzes this essential step in cellular respiration. Magnesium is required as a cofactor for pyruvate dehydrogenase to function correctly. It assists in stabilizing the structure of the enzyme and is involved in the binding of substrates and cofactors. Magnesium ions help facilitate the enzymatic activity necessary for the decarboxylation of pyruvate, allowing the subsequent formation of acetyl-CoA and NADH, which are critical for energy production in cells. The other elements listed do not serve this specific purpose in relation to pyruvate dehydrogenase. Iodine and nitrogen do not play a direct role in this particular enzymatic reaction, while calcium is involved in various cellular signaling and muscular functions but is not a necessary cofactor for pyruvate dehydrogenase activity. Understanding the need for magnesium in this process underscores the importance of metal ions as cofactors in enzymatic reactions, particularly in metabolic pathways like aerobic respiration.

10. What did the Air Act amend in 1987 to include?

A. Water as a pollutant

B. Noise as pollutants

C. Soil as a pollutant

D. Light as a pollutant

The Air Act of 1987 was a significant amendment to the original Air (Prevention and Control of Pollution) Act of 1981. The principal focus of the amendment was to broaden the definition of pollution, leading to the inclusion of noise as a pollutant. Noise pollution had increasingly become a concern due to its adverse effects on human health and environmental quality. By incorporating noise into the definition of pollutants, the Act recognized the necessity of regulating sound levels, which can affect both physical and mental well-being. This inclusion reflects a growing awareness of the various forms of pollution and their impacts beyond just the chemical and particulate contaminants that were initially the focus of air quality legislation. By addressing noise pollution through legal frameworks, the amendment allowed for more comprehensive strategies to mitigate its effects, thus safeguarding public health and enhancing the quality of the environment. In contrast, while water, soil, and light pollution are significant environmental issues, they were not specifically included under the purview of this particular amendment to the Air Act. The focus on noise indicates a targeted approach to addressing a burgeoning issue in urbanized and industrialized settings.

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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:

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

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