

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.

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. At which wavelength is light most absorbed by chlorophyll a?**
 - A. 500 nm
 - B. 400 nm
 - C. 600 nm
 - D. 700 nm
- 2. 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
- 3. What is the viability duration for pollen mentioned in the context provided?**
 - A. 15 minutes
 - B. 30 minutes
 - C. 1 hour
 - D. 24 hours
- 4. Which type of plant is the most efficient converter of light energy into chemical energy?**
 - A. C3 plants
 - B. C4 plants
 - C. CAM plants
 - D. Dicotyledonous plants
- 5. What is the primary site of nutrient absorption in the digestive system?**
 - A. Large intestine
 - B. Stomach
 - C. Pancreas
 - D. Small intestine
- 6. What is the average resting heart rate for an adult?**
 - A. 50 to 70 beats per minute
 - B. 60 to 100 beats per minute
 - C. 70 to 90 beats per minute
 - D. 80 to 120 beats per minute

7. Facial isomerism is associated with which type of complex?
- A. MA_3B_3
 - B. MA_2B_2
 - C. MA_4B_2
 - D. MA_2B_6
8. In which group of plants do male and female gametophytes not have an independent existence?
- A. Angiosperms
 - B. Gymnosperms
 - C. Pteridophytes
 - D. Algae
9. Hemoglobin is a complex of which metal ion?
- A. Fe^{2+}
 - B. Cu^{2+}
 - C. Mn^{2+}
 - D. Co^{2+}
10. What is the name for the process by which energy is produced in the mitochondria?
- A. Photosynthesis
 - B. Aerobic respiration
 - C. Glycolysis
 - D. Protein synthesis

Answers

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

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Explanations

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1. At which wavelength is light most absorbed by chlorophyll a?

- A. 500 nm
- B. 400 nm**
- C. 600 nm
- D. 700 nm

Chlorophyll a predominantly absorbs light in the blue-violet region and the red region of the electromagnetic spectrum. The light wavelengths around 400 nm fall into the blue-violet range, where chlorophyll a exhibits significant absorption. This absorption is crucial for photosynthesis, as it allows the chlorophyll molecules to capture light energy, which is then converted into chemical energy for plant growth and energy production. While chlorophyll a does absorb light at other wavelengths, such as in the red region around 660-680 nm, the most effective absorption occurs at about 430-450 nm, aligning closely with the 400 nm wavelength indicated in the question. Thus, the absorption peak around 400 nm is essential for maximizing the efficiency of photosynthesis in plants.

2. 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

3. What is the viability duration for pollen mentioned in the context provided?

- A. 15 minutes
- B. 30 minutes**
- C. 1 hour
- D. 24 hours

The viability duration for pollen refers to the length of time that pollen grains remain capable of fertilizing ovules after they land on a compatible stigma. In many flowering plants, the pollen tends to have a relatively short viability period, commonly around 30 minutes to a few hours. When the answer highlights a duration of 30 minutes, it reflects the understanding that while some pollen types may last longer, a significant number lose their viability quickly after dispersal. This rapid loss of fertility underscores the importance of timing in pollination, especially in plants that rely on specific pollinators or particular environmental conditions for successful fertilization. In contrast, other durations suggested may not accurately represent the typical pollen viability for the majority of flowering species, which tend to emphasize the critical nature of the short window in which pollen must act effectively. Understanding this concept is crucial for studying plant reproduction and the strategies that plants have evolved to optimize fertilization.

4. Which type of plant is the most efficient converter of light energy into chemical energy?

- A. C3 plants
- B. C4 plants**
- C. CAM plants
- D. Dicotyledonous plants

C4 plants are indeed recognized as the most efficient converters of light energy into chemical energy, primarily due to their specialized photosynthetic pathway. This pathway allows them to efficiently fix carbon dioxide even in conditions where other plants might struggle, such as high temperatures and low atmospheric CO₂ concentrations. In C4 photosynthesis, CO₂ is first captured and fixed into a four-carbon compound in mesophyll cells. This compound is then transported to bundle sheath cells, where it releases CO₂ for the Calvin cycle, significantly boosting the concentration of CO₂ around the enzyme RuBisCO. This process not only enhances the efficiency of carbon fixation but also minimizes photorespiration, a wasteful process that occurs in C3 plants under similar conditions. Furthermore, C4 plants are adapted to environments characterized by high light intensity and temperature, enabling them to thrive in a variety of ecosystems, including tropical and subtropical regions. This adaptation gives them a competitive edge in terms of both growth and energy conversion efficiency in those conditions. By contrast, while C3 plants are common and perform well in cooler, moist environments, they are less efficient under high light and temperature. CAM plants, on the other hand, have adapted to arid conditions and open their stomata at night to minimize

5. What is the primary site of nutrient absorption in the digestive system?

- A. Large intestine
- B. Stomach
- C. Pancreas
- D. Small intestine**

The small intestine is the primary site of nutrient absorption in the digestive system due to its specialized structure and large surface area. It is equipped with villi and microvilli, which are tiny finger-like projections that increase the surface area for absorption. This adaptation allows for the efficient uptake of essential nutrients such as carbohydrates, proteins, fats, vitamins, and minerals into the bloodstream. The small intestine is divided into three sections: the duodenum, jejunum, and ileum, each playing a role in both digestion and absorption. The majority of nutrient absorption occurs in the jejunum, while the ileum absorbs specific nutrients, including vitamin B12 and bile salts. In contrast, other organs mentioned, such as the large intestine, stomach, and pancreas, have specific functions that do not include significant nutrient absorption. The large intestine primarily absorbs water and electrolytes, the stomach is mainly engaged in the mechanical and chemical breakdown of food, and the pancreas produces digestive enzymes rather than being involved directly in the absorption process. This highlights the small intestine's critical role in the digestive system as the main site for nutrient absorption.

6. What is the average resting heart rate for an adult?

- A. 50 to 70 beats per minute
- B. 60 to 100 beats per minute**
- C. 70 to 90 beats per minute
- D. 80 to 120 beats per minute

The average resting heart rate for a healthy adult typically ranges from 60 to 100 beats per minute. This range is considered normal and reflects a standard measure of cardiac function. Factors such as age, fitness level, and overall health can influence a person's resting heart rate; however, the 60 to 100 beats per minute range is widely accepted in medical guidelines as the baseline for assessing normal heart rhythm at rest. Other ranges presented in the choices do not align with the established medical consensus. For example, the option suggesting a lower range of 50 to 70 beats per minute might be considered normal for athletic individuals or highly conditioned athletes; however, it is not applicable to the general population. Similarly, the option indicating a higher average of 70 to 90 beats per minute does not encompass the full normal range, and the 80 to 120 beats per minute option exceeds the normative limit for resting heart rates, indicating possible health concerns. Thus, the broad acceptance of 60 to 100 beats per minute embodies the most comprehensive understanding of what an average resting heart rate should be for adults.

7. 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

8. In which group of plants do male and female gametophytes not have an independent existence?

A. Angiosperms

B. Gymnosperms

C. Pteridophytes

D. Algae

In angiosperms, male and female gametophytes do not exist independently; instead, they are developed within the structures of the parent plant. In angiosperms, the male gametophyte is represented by pollen grains, which develop from microspores within the anthers of flowers. The female gametophyte, known as the embryo sac, develops from megaspores within the ovules located in the ovary of the flower. This encapsulated development of gametophytes is significant because it provides them with protection and nourishment from the sporophyte, which enhances their chances of successful fertilization and subsequent seed development. This contrasts with other plant groups where gametophytes can be free-living and independent, such as in pteridophytes, where the gametophyte is a separate and photosynthetic entity, or in algae, where both gametophytes and sporophytes may exist independently in many species. In summary, in angiosperms, male and female gametophytes rely entirely on the parent sporophyte for their existence, indicating a further advancement in plant evolution.

9. Hemoglobin is a complex of which metal ion?

- A. Fe 2+**
- B. Cu 2+
- C. Mn 2+
- D. Co 2+

Hemoglobin is a complex protein that plays a crucial role in the transport of oxygen in the blood. The central metal ion in the hemoglobin molecule is iron, which exists in the +2 oxidation state, denoted as Fe^{2+} . This iron ion is integral to hemoglobin's ability to bind oxygen molecules reversibly. The presence of Fe^{2+} allows for the formation of coordination complexes with oxygen due to its ability to donate electron pairs, facilitating the binding of oxygen to the heme group within hemoglobin. Each hemoglobin molecule can carry up to four oxygen molecules in this manner. In contrast, the other metal ions listed do not play the same role in hemoglobin. Copper, manganese, and cobalt do not feature in the structure of hemoglobin and do not have the same affinity for oxygen binding as iron does. Thus, the choice of iron as the metal ion in hemoglobin is not only correct but essential for its primary function of oxygen transport in the body.

10. What is the name for the process by which energy is produced in the mitochondria?

- A. Photosynthesis
- B. Aerobic respiration**
- C. Glycolysis
- D. Protein synthesis

The process by which energy is produced in the mitochondria is known as aerobic respiration. This is a multi-step process that involves the conversion of glucose and oxygen into carbon dioxide, water, and adenosine triphosphate (ATP), which is the energy currency of the cell. Aerobic respiration occurs in the presence of oxygen and is highly efficient, yielding significantly more ATP compared to anaerobic processes. During aerobic respiration, the pathways include glycolysis (which occurs in the cytoplasm), the Krebs cycle (which occurs in the mitochondrial matrix), and the electron transport chain (which takes place across the inner mitochondrial membrane). The final result of these processes is the transfer of energy stored in chemical bonds of nutrients to ATP, enabling the cell to perform various functions. Understanding aerobic respiration is crucial as it highlights the role of mitochondria as the powerhouse of the cell, providing the energy necessary for cellular activities. In contrast, photosynthesis primarily involves the conversion of solar energy into chemical energy by plants and occurs in chloroplasts, while glycolysis is a preliminary step of glucose breakdown before aerobic pathways, and protein synthesis is a process of building proteins from amino acids, not directly related to energy production.

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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