

NEET Chemistry Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. Which class of drugs is used primarily for treating anxiety and stress?**
 - A. Stimulants**
 - B. Tranquilizers**
 - C. Anticonvulsants**
 - D. Antidepressants**
- 2. Which of the following is an example of a disaccharide?**
 - A. Glucose**
 - B. Galactose**
 - C. Fructose**
 - D. Sucrose**
- 3. What is the main component of the reagent thionyl chloride?**
 - A. Sulfur**
 - B. Chlorine**
 - C. Oxygen**
 - D. Carbon**
- 4. What type of reaction is represented by the equation: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$?**
 - A. Decomposition reaction**
 - B. Combustion reaction**
 - C. Synthesis reaction**
 - D. Exothermic reaction**
- 5. What type of medication are brompheniramine and terfenadine classified as?**
 - A. Antipyretics**
 - B. Antihistamines**
 - C. Analgesics**
 - D. Antacids**

- 6. Which drug class includes substances used primarily to alleviate insomnia?**
- A. Stimulants**
 - B. Hypnotics**
 - C. Tranquilizers**
 - D. Antidepressants**
- 7. How do enzyme inhibitors affect enzyme activity?**
- A. By providing more substrate for reaction**
 - B. By blocking the binding site of the enzyme**
 - C. By increasing the temperature of the reaction**
 - D. By enhancing the binding affinity of the substrate**
- 8. Which of the following is an example of a homogeneous mixture?**
- A. Sand and salt**
 - B. Salt water**
 - C. Oil and water**
 - D. Granite**
- 9. What class of medications do barbiturates belong to?**
- A. Analgesics**
 - B. Hypnotics**
 - C. Tranquilizers**
 - D. Stimulants**
- 10. Which reagent is used to prepare primary alkyl halides?**
- A. Hydrogen bromide**
 - B. Thionyl chloride**
 - C. Bromine**
 - D. Phosphorus tribromide**

Answers

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

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Explanations

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1. Which class of drugs is used primarily for treating anxiety and stress?

A. Stimulants

B. Tranquilizers

C. Anticonvulsants

D. Antidepressants

Tranquilizers are a class of drugs specifically designed to alleviate anxiety and stress. They work by acting on the central nervous system to produce a calming effect, which can help reduce feelings of anxiety and promote relaxation. This calming mechanism is crucial in treating various anxiety disorders, making tranquilizers one of the primary therapeutic options for individuals suffering from anxiety-related conditions. Stimulants, on the other hand, are typically associated with increasing alertness, energy, and attention, which is counterproductive for treating anxiety. Anticonvulsants are mainly used to manage seizures and certain types of pain, while some may have off-label uses for mood stabilization, they are not primarily indicated for anxiety. Antidepressants, although helpful in treating some anxiety disorders, typically address mood regulation rather than directly alleviating stress and anxiety symptoms in the same way that tranquilizers do. Therefore, tranquilizers are particularly suited for the specific treatment focus on anxiety and stress.

2. Which of the following is an example of a disaccharide?

A. Glucose

B. Galactose

C. Fructose

D. Sucrose

Disaccharides are carbohydrates composed of two monosaccharide units linked together by a glycosidic bond. Sucrose is a prime example of a disaccharide because it is formed from the combination of glucose and fructose molecules. This bond creates a compound that has unique properties distinct from its monosaccharide components. In contrast, glucose, galactose, and fructose are all monosaccharides, which means they consist of single sugar units. Each of these plays a significant role in metabolism and energy production, but they do not meet the definition of a disaccharide since they are not composed of two sugar units. Understanding the structure and classification of carbohydrates is crucial in biochemistry, as different sugars can have varying functions and implications in biological systems.

3. What is the main component of the reagent thionyl chloride?

- A. Sulfur**
- B. Chlorine**
- C. Oxygen**
- D. Carbon**

Thionyl chloride is primarily composed of sulfur and chlorine, with the chemical formula SOCl_2 . The name itself indicates that sulfur is a key component. In this reagent, sulfur takes a central role in its reactivity, particularly in the context of converting alcohols to alkyl chlorides and in various other reactions where it acts as a source of chloride ions. Chlorine is also present and plays an important role, but the presence of sulfur is what characterizes thionyl chloride specifically, distinguishing it from other chlorinating agents. Oxygen is present in thionyl chloride in the form of a double bond to sulfur, but it is not the main component by mass or substance in comparison to sulfur and chlorine. Similarly, carbon is not a component of thionyl chloride at all.

4. What type of reaction is represented by the equation: $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$?

- A. Decomposition reaction**
- B. Combustion reaction**
- C. Synthesis reaction**
- D. Exothermic reaction**

The reaction represented by the equation $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$ is a synthesis reaction. In a synthesis reaction, two or more reactants combine to form a single product, which is precisely what happens here; hydrogen and oxygen gas combine to form water. While combustion reactions often involve reactions like hydrogen with oxygen to release energy in the form of heat, the core aspect of this particular reaction is focused on the formation of a new compound, which is water. The terms used here tend to mingle, but as per the strict definitions in chemistry, this specific example primarily illustrates synthesis rather than combustion. Additionally, although the reaction is exothermic, as it releases energy in the form of heat, that characteristic distinctly categorizes it but does not define the fundamental type of reaction occurring. Therefore, the main identifying feature of the reaction in question is its classification as a synthesis reaction, combining elements to create a compound.

5. What type of medication are brompheniramine and terfenadine classified as?

- A. Antipyretics**
- B. Antihistamines**
- C. Analgesics**
- D. Antacids**

Brompheniramine and terfenadine are classified as antihistamines, which are a group of medications used primarily to relieve allergic symptoms. They work by blocking the action of histamine, a substance in the body that causes allergic reactions such as itching, sneezing, runny nose, and hives. Brompheniramine is often used to treat cold and allergy symptoms, while terfenadine was historically used for allergies but is now largely replaced by newer agents due to safety concerns. The effectiveness of these drugs is rooted in their ability to bind to histamine receptors, thereby preventing histamine from eliciting its effects. In this context, antipyretics are medications that reduce fever, analgesics relieve pain, and antacids neutralize stomach acid, making them unrelated to the function of brompheniramine and terfenadine. Antihistamines are specifically tailored to combat the symptoms arising from allergic reactions, making them the correct classification for these drugs.

6. Which drug class includes substances used primarily to alleviate insomnia?

- A. Stimulants**
- B. Hypnotics**
- C. Tranquilizers**
- D. Antidepressants**

Hypnotics are a class of drugs specifically designed to promote sleep and manage insomnia. They function by depressing the central nervous system, resulting in sedative effects that help individuals fall asleep more easily and improve the quality of their sleep. Common examples of hypnotics include medications like benzodiazepines and certain non-benzodiazepine sleep aids that are prescribed for those experiencing sleep disorders. In contrast, stimulants are used to increase alertness and attention, making them unsuitable for treating insomnia. Tranquilizers can help reduce anxiety, but they are not primarily aimed at inducing sleep. While some antidepressants may have sedative properties, their main purpose is to treat mood disorders rather than to specifically alleviate insomnia. Thus, hypnotics are the most accurate classification for drugs focused on treating sleep disturbances.

7. How do enzyme inhibitors affect enzyme activity?

- A. By providing more substrate for reaction
- B. By blocking the binding site of the enzyme**
- C. By increasing the temperature of the reaction
- D. By enhancing the binding affinity of the substrate

Enzyme inhibitors play a crucial role in regulating enzyme activity by interacting with the enzyme in a way that reduces its ability to catalyze reactions. The most direct way that this occurs is through the inhibition of the enzyme's active site, which is the specific region where substrate molecules bind. When an inhibitor occupies this active site, it prevents the substrate from binding effectively. This blockage can occur in various forms, such as competitive inhibition, where the inhibitor competes with the substrate for the same binding site, or non-competitive inhibition, where the inhibitor binds to a different site but still alters the enzyme's function. Ultimately, when the active site is blocked, the enzyme cannot convert substrates into products, leading to decreased enzyme activity and affecting overall metabolic processes in the cell. The other options highlight phenomena that do not result in inhibition. Providing more substrate does not inhibit enzyme activity; instead, it could potentially increase the rate of reaction up to a certain point. Increasing temperature might enhance reaction rates to a point, but extremely high temperatures can denature enzymes instead of inhibiting them effectively. Enhancing the binding affinity of the substrate would actually promote enzyme activity rather than inhibit it. Thus, the correct understanding of enzyme inhibitors is essential for grasping biochemical regulation and

8. Which of the following is an example of a homogeneous mixture?

- A. Sand and salt
- B. Salt water**
- C. Oil and water
- D. Granite

A homogeneous mixture is defined as a mixture that has a uniform composition throughout, meaning that the different components are indistinguishable from one another at the macroscopic level. In the case of salt water, when table salt (sodium chloride) is dissolved in water, it forms a solution where the salt ions are evenly distributed throughout the water. This uniformity means that if you take a sample of the salt water from any part of the solution, it will have the same composition as any other sample. In contrast, the other choices represent mixtures that are not homogeneous. For instance, sand and salt are a heterogeneous mixture because the individual granules of sand and salt can be seen and separated. Oil and water do not mix uniformly, leading to distinct layers, while granite is a solid rock composed of different minerals that can be visually identified as separate components. These examples highlight the key distinction between homogeneous and heterogeneous mixtures, underlining why salt water is the correct choice as a homogeneous mixture.

9. What class of medications do barbiturates belong to?

- A. Analgesics
- B. Hypnotics
- C. Tranquilizers**
- D. Stimulants

Barbiturates belong to the class of medications known as hypnotics. They are primarily used to induce sleep and are effective as sedatives due to their ability to depress the central nervous system. These medications work by enhancing the effects of the neurotransmitter gamma-aminobutyric acid (GABA), which slows down brain activity and promotes drowsiness. While barbiturates can also have anxiolytic (anti-anxiety) effects similar to some tranquilizers, their primary classification is within hypnotics due to their primary role in sleep induction. They are distinct from analgesics, which are pain relievers, and stimulants, which increase alertness and energy levels. Thus, recognizing the main therapeutic use and effect of barbiturates is key to understanding their classification as hypnotics.

10. Which reagent is used to prepare primary alkyl halides?

- A. Hydrogen bromide
- B. Thionyl chloride**
- C. Bromine
- D. Phosphorus tribromide

To prepare primary alkyl halides, thionyl chloride is a highly effective reagent. The reaction between a primary alcohol and thionyl chloride results in the formation of an alkyl chloride. This process involves the conversion of the alcohol group (-OH) into a leaving group, which is then substituted by chloride ion to form the primary alkyl halide. Thionyl chloride acts as a reagent that facilitates this transformation by forming an intermediate that allows for the efficient substitution of the hydroxyl group, leading to a more favorable reaction pathway. Moreover, thionyl chloride is ideal for this reaction because it produces byproducts that are gases (such as sulfur dioxide and hydrochloric acid), making the reaction easier to drive to completion. In contrast, hydrogen bromide is generally used to prepare alkyl bromides and is not specifically geared towards primary alcohols. Bromine is a halogen that can lead to various reactions not limited to primary alkyl halide formation, and phosphorus tribromide, while it can convert alcohols to alkyl bromides, is less commonly used compared to thionyl chloride for the preparation of primary alkyl halides.

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://neetchemistry.examzify.com>

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

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