

# Chem 105 Exam 1

## Chemistry 105 Practice Exam 1

### Multiple Choice Section

1. An element \_\_\_\_\_

- a. can be separated into its components by physical methods.
- b. always has the same chemical properties regardless of its source.
- c. cannot be separated into simpler substances by chemical methods.
- d. can also be a compound.
- e. exists only as atoms, not as molecules.

2. Which one of the following represents a chemical change?

- a. Mercury (II) oxide is heated to and forms mercury metal and oxygen gas.
- b. Rubbing alcohol evaporates. – physical
- c. Iodine vapor deposits on a surface. – physical
- d. Iron metal is separated from sand using a magnet. – physical
- e. Rock salt is pulverized. – physical

3. Equal amounts of water are present under the following conditions. In which case do the water molecules have the highest kinetic energy?

- a. as ice at  $-10^{\circ}\text{C}$  ( $14^{\circ}\text{F}$ )
- b. as steam at  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ )
- c. in the liquid phase at  $80^{\circ}\text{C}$  ( $176^{\circ}\text{F}$ )
- d. in the gas phase at  $150^{\circ}\text{C}$  ( $302^{\circ}\text{F}$ )
- e. in the solid phase at  $0^{\circ}\text{C}$  ( $32^{\circ}\text{F}$ )

4. Which of the following represents the largest mass?

- a. 250 ng
- b. 25  $\mu\text{g}$
- c. 2.5 g
- d. 0.25 kg
- e. 25 mg

5. A student conducts repeated trials to determine the density of a sample of seawater and obtains the following results: 1.321 g/mL, 1.323 g/mL, 1.319 g/mL, and 1.321 g/mL. Known values are reported to be in the 1.02 to 1.09 g/mL range. The experimental results are \_\_\_\_\_

- a. less precise than the known values.
- b. more accurate than the known values.
- c. imprecise but accurate.
- d. precise and accurate.
- e. inaccurate but precise.

6. According to the law of definite proportions, \_\_\_\_\_

- a. atoms forming a given compound react in variable proportions depending on conditions.
- b. different samples of the same compound contain the same proportions of the same elements.
- c. all compounds containing the same types of atoms have identical properties.
- d. all compounds containing the same types of atoms have relative masses that are whole-number multiples.
- e. only one type of molecule can be produced when two elements combine.

7. Which of the following statements is NOT true regarding blackbody radiation, the ultraviolet catastrophe, and Planck's view of electromagnetic radiation?

**Chem 105 Exam 1** is a pivotal milestone for students embarking on their journey through introductory chemistry. This exam typically covers fundamental concepts that are critical for success in more advanced chemistry courses and practical applications in scientific fields. Understanding what to expect from Chem 105 Exam 1 can help students prepare effectively, minimize test anxiety, and ultimately achieve better results. In this article, we will explore the key topics covered in the exam, effective study strategies, and tips for success.

## Overview of Chem 105

Chem 105 is usually an introductory course designed for students majoring in

sciences, engineering, or health-related fields. The course introduces fundamental concepts of chemistry that form the foundation for more complex topics encountered in later courses.

## Key Topics Covered in Chem 105 Exam 1

Chem 105 Exam 1 often encompasses a range of topics that include, but are not limited to:

- **Atomic Structure:** Understanding atoms, subatomic particles, isotopes, and atomic mass.
- **Periodic Table:** Learning about the arrangement of elements, trends such as electronegativity, ionization energy, and atomic radius.
- **Chemical Bonding:** Differentiating between ionic and covalent bonds, understanding bond polarity, and molecular geometry.
- **Stoichiometry:** Mastering mole calculations, balancing chemical equations, and understanding concentrations.
- **States of Matter:** Exploring the characteristics of solids, liquids, and gases, as well as phase changes and gas laws.

By mastering these topics, students will not only do well on the exam but will also build a strong foundation for future chemistry coursework.

## Study Strategies for Chem 105 Exam 1

Preparing for Chem 105 Exam 1 requires a strategic approach. Here are several effective study strategies that can enhance your preparation:

### 1. Review Lecture Notes

Regularly revisiting your lecture notes is essential for retention. Focus on understanding the concepts rather than rote memorization. Highlight key points and create summaries for each topic.

### 2. Utilize Textbook Resources

Many textbooks offer additional resources such as practice problems, quizzes, and study guides. Take advantage of these resources to reinforce your understanding of the material.

### **3. Form Study Groups**

Collaborating with peers can significantly enhance your learning experience. Form a study group to discuss challenging concepts, quiz each other, and share different perspectives on the material.

### **4. Practice Problem-Solving**

Chemistry often involves problem-solving, particularly in areas like stoichiometry and gas laws. Completing practice problems will not only help you understand the concepts better but also prepare you for the types of questions you may encounter on the exam.

### **5. Take Advantage of Office Hours**

Don't hesitate to seek help from your instructor. Attending office hours can provide clarity on confusing topics and give you insights into what is expected on the exam.

## **Tips for Success on Chem 105 Exam 1**

Once you have established a study routine, here are some additional tips to ensure success on Chem 105 Exam 1:

### **1. Understand the Exam Format**

Familiarize yourself with the format of the exam. Knowing whether it will consist of multiple-choice questions, short answer, or problem-solving questions can help tailor your study approach.

### **2. Manage Your Time Wisely**

During the exam, time management is crucial. Allocate time for each section based on the number of questions, and ensure you leave time to review your answers.

### 3. Read Questions Carefully

Take a moment to read each question thoroughly before answering. Misunderstanding a question can lead to avoidable mistakes.

### 4. Show Your Work

For quantitative problems, always show your calculations. This practice can earn you partial credit even if your final answer is incorrect, as it demonstrates your understanding of the problem-solving process.

### 5. Stay Calm and Focused

Test anxiety can hinder performance, so practice relaxation techniques such as deep breathing before and during the exam. Ensure you get a good night's sleep before the exam day to enhance focus and clarity.

## Resources for Further Preparation

To ensure you are well-prepared for Chem 105 Exam 1, consider utilizing the following resources:

- **Online Tutorials and Videos:** Websites like Khan Academy and Coursera offer free resources that cover various chemistry topics in depth.
- **Practice Exams:** Many universities provide past exams or sample tests. These can be invaluable for understanding the types of questions you may face.
- **Flashcards:** Create flashcards for key terms, formulas, and concepts. This technique can aid in memorization and quick recall.
- **Study Apps:** Consider downloading study apps that offer interactive quizzes and flashcards tailored to chemistry topics.

## Conclusion

**Chem 105 Exam 1** is a significant step in your academic journey. By understanding the key topics, employing effective study strategies, and

utilizing available resources, you can enhance your preparation and approach the exam with confidence. Remember, consistent study and a positive mindset can make a substantial difference in your performance. Embrace the challenge, and good luck!

## **Frequently Asked Questions**

### **What topics should I focus on for the Chem 105 Exam 1?**

You should focus on the foundational concepts of chemistry including atomic structure, periodic trends, chemical bonding, stoichiometry, and basic thermodynamics.

### **Are there any recommended study materials for the Chem 105 Exam 1?**

Yes, you should review your textbook chapters, lecture notes, and any supplementary materials provided by your instructor. Additionally, practice problems and past exams can be very helpful.

### **How is the Chem 105 Exam 1 structured?**

The exam typically consists of multiple-choice questions, short answer questions, and problem-solving questions that assess your understanding of the material covered in the first part of the course.

### **What is the typical format of questions on the Chem 105 Exam 1?**

Questions may include calculations, conceptual questions about chemical principles, and interpretations of chemical equations or graphs.

### **How much time is usually allocated for the Chem 105 Exam 1?**

Students are usually given 1.5 to 2 hours to complete the exam, depending on the specific course policy and the number of questions.

### **What strategies can I use to prepare effectively for the Chem 105 Exam 1?**

Create a study schedule, form study groups, utilize flashcards for key concepts, and practice with old exams and quizzes to familiarize yourself with the format.

# Is it possible to retake the Chem 105 Exam 1 if I do poorly?

Retake policies vary by institution and instructor, so it's best to check with your professor or syllabus for specific guidelines regarding retakes or remedial assessments.

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## Chem 105 Exam 1

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### **Airbnb - Wikipedia**

After temporarily banning parties in homes rented on the platform in August 2020 due to the COVID-19 pandemic, [55] in June 2022, Airbnb announced that it would permanently ban parties and events in homes on its platform, a position supported by hosts and their neighbors who complained of nuisances at Airbnb properties. [56]

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