

Chapter 2 Quiz (32 Points)

True/False Questions (10 Points)

1. **True or False:** Exact numbers have an infinite number of significant figures.
Answer: True
Point Value: 1
2. **True or False:** In the number 0.00340, the digits 3 and 4 are the only significant figures.
Answer: False
Point Value: 1
3. **True or False:** The number 6.022×10^{23} represents an exact number.
Answer: False
Point Value: 1
4. **True or False:** Scientific notation is a method used to express very large or very small numbers conveniently.
Answer: True
Point Value: 1
5. **True or False:** A conversion factor must always be experimentally determined.
Answer: False
Point Value: 1
6. **True or False:** To accurately measure a mass of 12.00 g means the mass is precise to the hundredth gram.
Answer: True
Point Value: 1
7. **True or False:** The density of a substance remains constant regardless of temperature and pressure.
Answer: False
Point Value: 1
8. **True or False:** 150.0 has more significant figures than 0.01500.
Answer: False (Both have four significant figures)
Point Value: 1
9. **True or False:** Units must always be included in scientific measurements.
Answer: True
Point Value: 1
10. **True or False:** When multiplying measurements, the number of significant figures in the result is determined by the measurement with the greatest number of significant figures.
Answer: False (It's determined by the measurement with the fewest significant figures)
Point Value: 1

Multiple Choice Questions (22 Points)

1. Which of the following numbers has four significant figures?

- A) 0.0540
- B) 4050.0
- C) 203.0
- D) 300

Answer: C) 203.0

Point Value: 2

2. What is the scientific notation for the number 678?

- A) 6.78×10^4
- B) 67.8×10^{-5}
- C) 6.78×10^2
- D) 67.8×10^{-2}

Answer: C) 6.78×10^2

Point Value: 2

3. What is the correct scientific notation for the number 0.00789?

- A) 7.89×10^{-3}
- B) 7.89×10^{-4}
- C) 0.789×10^{-2}
- D) 789×10^4

Answer: A. 7.89×10^{-3}

Point Value: 2

4. Express the number 0.00056 in scientific notation.

- A) 5.6×10^{-4}
- B) 5.6×10^{-3}
- C) 5.6×10^{-5}
- D) 5.6×10^{-2}

Answer: A) 5.6×10^{-4}

Point Value: 2

5. The correct decimal representation of 1.709×10^{-5} is:

- A) 170900
- B) 0.0001709
- C) 0.00001709
- D) 1709
- E) none of the above

Answer: C) 0.00001709

Point Value: 2

6. 2 kg is equivalent to how many grams?

- A) 20 g
- B) 200 g
- C) 2000 g
- D) 20000 g

Answer: C) 2000 g

Point Value: 2

7. Which of the following is an example of an exact number?

- A) The mass of a textbook
- B) The number of students in a class
- C) The volume of water in a graduated cylinder
- D) The density of mercury

Answer: B) The number of students in a class

Point Value: 2

8. Convert 25.0 milliliters to liters.

- A) 0.0025 L
- B) 0.25 L
- C) 0.0250 L
- D) 0.00250 L

Answer: C) 0.025 L

Point Value: 2

9. What is the density of an object that has a mass of 300.0 g and occupies a volume of 150.0 cm³?

- A) 0.5 g/cm³
- B) 2.000 g/cm³
- C) 150 g/cm³
- D) 450 g/cm³

Answer: b) 2 g/cm³

Point Value: 2

10. Convert 2.5 kilometers to meters.

- A) 2500 meters
- B) 25000 meters
- C) 2.50 meters
- D) 250 meters

Answer: A. 2500 meters

Point Value: 2

11. What is the standard SI unit for mass?

- A) kilogram
- B) gram
- C) pound
- D) ton
- E) none of the above

Answer: A) kilogram

Point Value: 2