

Chemistry Unit 2 Exam Outline

Chapter 3 – Scientific Measurement

1. Express numbers in scientific notation and long form
2. Distinguish between precision and accuracy and be able to illustrate it
3. Calculate percent error
4. Identify number of significant figures and round calculations to correct number of significant figures (or decimal places)
5. Convert metric units and dimensional analysis
 - a. 1-Step Conversions
 - b. 2-Step Conversions
6. Convert between Celsius and Kelvin
7. Calculate density

Unit 2 Practice Test: Chapters 3

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. The expression of 8902 km in scientific notation is _____.
 - a. 8.902×10^3 km
 - b. 8.902×10^4 km
 - c. 89.02×10^4 km
 - d. 8.902×10^{-3} km
2. Which of the following measurements contains two significant figures?
 - a. 0.004 00 L
 - b. 0.004 04 L
 - c. 0.000 44 L
 - d. 0.004 40 L
3. How many significant figures are in the measurement 0.003 4 kg?
 - a. two
 - b. four
 - c. five
 - d. This cannot be determined.
4. Express the sum of 1111 km and 222 km using the correct number of significant digits.
 - a. 1300 km
 - b. 1330 km
 - c. 1333 km
 - d. 1333.0 km
5. If the temperature changes by 100 K, by how much does it change in °C?
 - a. 0°C
 - b. 37°C
 - c. 100°C
 - d. 273°C
6. Density is found by dividing _____.
 - a. mass by volume
 - b. volume by mass
 - c. mass by area
 - d. area by mass

Calculations:

1. Determine the number of sig figs in the following measurements
 - a. 456 m
 - b. 7,800 mm
 - c. 0.00034 L
 - d. 20,501 sec
2. Round the answers below correctly:
 - a. $5.4 + 13.34 + 22 =$
 - b. $4.4 \times 0.334 =$

3. A student predicted there to be 88 jelly beans in a jar that actually contained 104 jelly beans. Calculate the students percent error:
4. What conversion factor do you need to convert the following problems
 - a. 128 m = _____cm
 - b. 2.4 g = _____dkg
 - c. 45 lbs = _____kg
 - d. 45 min = _____ days
5. A car driving to school is traveling 35 mph, what is its speed in meters per second?
6. Calculate the density of a gas if 25.0g occupies 47.6 mL of space:
7. What is the value 24°C in Kelvin?

Unit 2 Practice Test: Chapters 3 Answer Section

MULTIPLE CHOICE

- | | |
|-----------|--------------------|
| 1. ANS: A | REF: p. 63 |
| 2. ANS: C | REF: p. 66 |
| 3. ANS: A | REF: p. 66 |
| 4. ANS: C | REF: p. 68 |
| 5. ANS: C | REF: p. 77 p. 78 |
| 6. ANS: A | REF: p. 90 p. 91 |

CALCULATIONS

1. A.) 3 B.) 2 C.) 2 D.) 5
2. A.) 41 B.) 1.5
3. 15% error
4. A.) $\frac{100cm}{1m}$ B.) $\frac{1dkg}{10g}$ C.) $\frac{1kg}{2.2lbs}$ D.) $\frac{1hr}{60min} \times \frac{1day}{24hr}$
5. 1.57×10^{-2} m/s
6. 0.53 g/mL
7. 297 K