CH 221 Sig Figs / Chapter 1
Self Quiz Name: _____ Lab Section: _____

This is a sample quiz for CH 221 providing examples from Chapter 1. Answers are provided at the end of this handout. *Good luck!*

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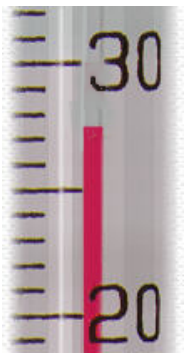
1. How many significant digits are present in the temperature read from the thermometer illustrated to the right?



   a) 1 b) 2 c) 3 d) 4

2. The dimensions of a rectangular solid are 8.00 cm long, 4.00 cm wide, and 2.00 cm high. If the density of the solid is 10.0 g/cm^3, what is its mass?
   a) 10/64 grams
   b) 10.0 grams
   c) 64.0 grams
   d) 320. grams
   e) 640. grams

3. A metal sample weighing 30.9232 grams was added to a graduated cylinder containing 23.26 mL of water. The volume of water plus the sample was 24.85 mL. Which setup will result in the density of this metal?
   a) 30.9232 x (24.85-23.26)
   b) $\dfrac{30.9232}{24.85 - 23.26}$
   c) $\dfrac{24.85 - 23.26}{30.9232}$
   d) $30.9232 \times \dfrac{24.85}{23.26}$
   e) $\dfrac{30.9232}{24.85 + 23.26}$

4. The number of significant digits in 0.30500 is
   a) 1
   b) 2
   c) 3
   d) 4
   e) 5

5. A box measures 3.50 cm x 2.915 cm. The product of these numbers = 10.2025 cm^2. What is the proper way to report the area of the box?
   a) 10.20 cm^2
   b) 10.2 cm^2
   c) 10 cm^2
   d) 10. cm^2

6. The result of 2.350 x (4.0 + 6.311) is,
   a) 24 b) 24.2 c) 24.21 d) 24.205

7. A student does a calculation using her calculator and the number 280.27163 is shown on the display. If there are actually three significant figures, how should she show the final answer?
   a) 280
   b) 280.3
   c) 280.27
   d) 2.80×10^{-2}
   e) 2.80×10^{2}

8. The term that refers to the reproducibility of a laboratory measurement is
   a) precision
   b) repeatability
   c) accuracy
   d) exactness

9. Which measurement below is NOT written with three significant digits?
   a) 2.00 cm
   b) 550. grams
   c) 0.003 L
   d) 12.7 mm

10. The number 6.33×10^{2} equals,
    a) 6.33
    b) 0.633
    c) 633
    d) 0.0633

11. The number 6.33×10^{-2} equals,
    a) 6.33
    b) 0.633
    c) 633
    d) 0.0633

12. Calculate the following:
    150.3 - 107.240
    a) 43
    b) 43.1
    c) 43.06
    d) 43.060

13. Calculate the following:
    322.44 - 0.321 - 72.0 - 68.9555
    a) 181.1635
    b) 181.164
    c) 181.16
    d) 181.2
    e) 181

14. Calculate the following:

    18.3 * (375 - 289) / 1.16

    a) 1356.72
    b) 1356.7
    c) 1357
    d) 1360
    e) 1400

15. Which exhibits the largest length?

    a) 0.100 km
    b) 250 cm
    c) 1.7×10^6 mm
    d) 450,000 nm

16. The prefix “nano-” corresponds to what multiplication factor?

    a) 10^{-9}
    b) 10^{-6}
    c) 10^{-3}
    d) 10^{-2}
    e) 10^{3}

17. The prefix “milli-” corresponds to what multiplication factor?

    a) 10^{-9}
    b) 10^{-6}
    c) 10^{-3}
    d) 10^{-2}
    e) 10^{3}

18. The prefix “micro-” corresponds to what multiplication factor?

    a) 10^{-9}
    b) 10^{-6}
    c) 10^{-3}
    d) 10^{-2}
    e) 10^{3}

19. The prefix “centi-” corresponds to what multiplication factor?

    a) 10^{-9}
    b) 10^{-6}
    c) 10^{-3}
    d) 10^{-2}
    e) 10^{3}

20. Convert 32.0 cm into nm.

    a) 3.2×10^{-6}
    b) 3.20×10^{-6}
    c) 3.2×10^{8}
    d) 3.20×10^{8}
    e) 320.

21. Convert 475 mL into L.
    a) 4.75 L
    b) 0.475 L
    c) 47.5 L
    d) 0.0475 L
    e) .5 L

22. Convert 367 K into °C.
    a) 93.85 °C
    b) 93.9 °C
    c) 94 °C
    d) 90 °C
    e) 640. °C

23. Convert -212.1 °C into K.
    a) -61.05 K
    b) 61.05 K
    c) 61.1 K
    d) 61 K
    e) 60 K

24. Convert 32.1 °C into °F.
    a) 89.78 °F
    b) 89.8 °F
    c) 90. °F
    d) 90 °F
    e) 100 °F

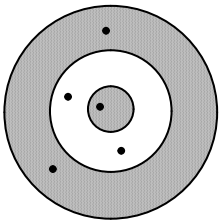
25. You measure the density of a slab of lead as 11.10 g/mL. The accepted value is 11.34 g/mL. The percent error for your measurement is
    a) 2.1 %
    b) 2.4 %
    c) 3.7 %
    d) 5.1 %

26. A sample of ore with a mass of 44.15 g contains aluminum and oxygen. Chemical analysis shows the sample contains 23.0 g of aluminum. The percent oxygen in the sample is
    a) 47.90 %
    b) 47.9 %
    c) 52.1 %
    d) 52.10 %

27. Which one of the following elements is correctly matched with its symbol?
    a) Ag, gold
    b) Ni, nickel
    c) Fl, fluorine
    d) Mg, manganese
    e) H, helium

28. Which one of the following elements is correctly matched with its symbol?
    a) P, potassium
    b) S, sodium
    c) Mn, magnesium
    d) Os, osmium
    e) B, beryllium

29. The marks on the following target represent someone who is:



    a) accurate, but not precise.
    b) precise, but not accurate.
    c) both accurate and precise.
    d) neither accurate nor precise.

30. You need 36.7 g of Fe from a sample that is 36.0% iron by mass. How many grams of the sample will you need?
    a) 101.94 g
    b) 101.9 g
    c) 102 g
    d) 13.212 g
    e) 13.2 g

Answers:

1.	**C**	16.	**A**
2.	**E**	17.	**C**
3.	**B**	18.	**B**
4.	**E**	19.	**D**
5.	**B**	20.	**D**

6.	**B**	21.	**B**
7.	**E**	22.	**C**
8.	**A**	23.	**C**
9.	**C**	24.	**B**
10.	**C**	25.	**A**

11.	**D**	26.	**B**
12.	**B**	27.	**B**
13.	**D**	28.	**D**
14.	**E**	29.	**D**
15.	**C**	30.	**C**