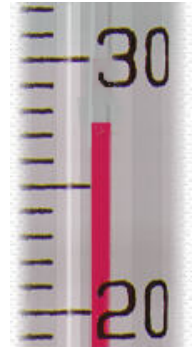


This is a sample quiz for CH 221 providing examples from Chapter 1. Answers are provided at the end of this handout. *Good luck!*

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/cm³, what is its mass?
- a) 10/64 grams d) 320. grams
b) 10.0 grams e) 640. grams
c) 64.0 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) $30.9232 \times (24.85 - 23.26)$
b) $\frac{30.9232}{24.85 - 23.26}$
c) $\frac{24.85 - 23.26}{30.9232}$
d) $30.9232 \times \frac{24.85}{23.26}$
e) $\frac{30.9232}{24.85 + 23.26}$
4. The number of significant digits in 0.30500 is
- a) 1 d) 4
b) 2 e) 5
c) 3
5. A box measures 3.50 cm x 2.915 cm. The product of these numbers = 10.2025 cm². What is the proper way to report the area of the box?
- a) 10.20 cm² c) 10 cm²
b) 10.2 cm² d) 10. cm²
6. The result of $2.350 \times (4.0 + 6.311)$ 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 %

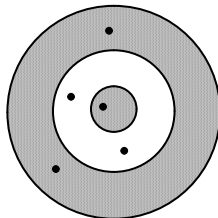
27. Which one of the following elements is correctly matched with its symbol?

- 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