

Study Guide –Chapter 2

CHM1033. Summer 2020

Test # 1: Jun. 8th (1.4 on Chapter 1 and Chapter 2)

1. How many significant figures are in each of the following numbers?
 - a) 13001
 - b) 13111
 - c) 1.30×10^4
 - d) 0.00013
2. Carry out the following operations, and express the answers with the appropriate number of significant figures:
 - a) $12.0450 + 9.47$

 - b) $257.6 - 19.751$

 - c) $(6.28 \times 10^3)(0.1065)$

 - d) $0.0531 / 0.744$

3. a) A sample of carbon tetrachloride, a liquid once used in dry cleaning, has a mass of 39.73 g and a volume of 25.0 mL at 25 °C. What is its density at this temperature? Will carbon tetrachloride float on water? (Materials that are less dense than water will float.)

b) What is the mass in kilograms of 2.00 L of an intravenous glucose solution with a density of 1.15 g/mL?

4. Using conversion factors solve the following clinical problems:
 - a) The physician has ordered 0.500 g of tetracycline to be given every 6 hours to a patient. If your stock on hand is 500mg- tablets, how many tablets will you need for 1 day's treatment?

b) An intramuscular medication is given at 5.30 mg/kg of body weight. If you give 415 mg of medication to a patient, what is the patient's weight in pounds? 1 kg = 2.20 lb

c) A physician has ordered 0.58 mg of atropine, intramuscularly. If atropine were available as 0.10 mg/mL of solution, how many milliliters would you need to give?

5. State the name of the unit and the type of measurement indicated for each of the following quantities.

a) 4.8 mm

b) 325 mg

c) 1.5 mL

d) 480 ms

e) 28 °C

6. Select the correct prefix to complete the equality.

a) 1 mL = _____ L

b) 1 m = _____ mm

c) 1 cm = _____ mm

d) 1 dL = _____ mL

e) 1 mL = _____ cc

f) 1 kg = _____ g

7. Round off each of the following to three significant figures.

a) 504.85

b) 8.3158

c) 25225

d) 6.3477×10^4

e) 399870

f) 58.5422

g) 0.0034088

ANSWERS

1. a) 5 b) 5 c) 3 d) 2
2. a) 21.52 b) 237.8 c) 6.69×10^2 d) 7.14×10^{-2}
3. a) 1.59 g/cm^3 ; No b) 2.30 kg
4. a) 4 tablets b) 172 lb c) 5.8 mL
5. a) millimeter; length
b) milligram; mass
c) milliliter; volume
d) millisecond; time
e) degree Celsius; temperature
6. a) 0.001 or 1×10^{-3} b) 1000 or 1×10^3 c) 10 d) 100 or 1×10^2 e) 1 f) 1000 or 1×10^3
7. a) 505 b) 8.32 c) 25200 or 2.52×10^4 d) 6.35×10^4 e) 4.00×10^5 f) 58.5 g)
0.00341 or 3.41×10^{-3}