Problem Set – Significant Figures – 2 $/20*$

Name: _____   Period _____

Part I: Give the number of significant figures in each number shown below. (1 point each)

1.) 8060.   _____   2.) 0.0808   _____   3.) 2060   _____   4.) 910.00   _____

5.) 9.300   _____   6.) 550$\bar{0}$00   _____   7.) 0.470 _____

Part II: Round the following numbers to two significant digits and use proper scientific notation. (1 point each)

8.)   21.208   _____   13.) 4.7001×10^9 _____

9.)   0.64705   _____   14.)   2.005   _____

10.)   0.08955   _____   15.) 1.000×10^{-6} _____

11.)   47.821   _____   16.) 9.99935×10^{12} _____

12.) 9.035×10^5 _____   17.) 1.250×10^8 _____

Part III: Perform the following operations, round your answer to the correct number of significant figures and use proper scientific notation. (1 point each)

18.) $(1.34 \times 10^{21} \bullet 9.4 \times 10^{22}) / 7.93 \times 10^{21}$ =   _____

19.) $2.48 \times 10^{37} \ / \ 7.154 \times 10^{16}$ =   _____

20.) $5.1 \ / \ (919 \bullet 3001)$ =   _____

21.) $1.5000 \times 10^{38} \ / \ 0.00459$ =   _____

22.)   55880.0 - 41035.954 =   _____

23.) $2.77 \times 10^{-13} \ / \ 9.172 \times 10^{-33}$ =   _____

24.)   37005 $\bullet$ 620100 =   _____

25.)   6591.6 - 718.5210 =   _____

26.)   0.15325 / 0.00015 =   _____

27.)   (0.495) (0.4060) =   _____

Metric conversions: Convert the following SI units to the designated unit. (1 point each)

28.)   14.8$^{\circ C}$ to Kelvin   _____ K

29.)   34 cs to ms   _____ ms

30.)   83 cm to meters   _____ m

31.)   830 mL to liters   _____ L

32.)   24.8991 K to Celsius   _____ $^{\circ}$C

33.)   0.55 mg to grams   _____ g

34.)   0.0020 kilograms to grams   _____ g

35.)   cubic centimeters in a milliliter?   _____ cm^3

36.)   cubic decimeters in 2.5 liters?   _____ dm^3

37.) If the average value, that you determine experimentally, is 9.40 s and the accepted value is 9.80 s, what is your percent error? (Show your work, write your answer with the correct number of significant digits. 3 points)

38.) If the mass of alcohol is 85.0 g and the density is 0.82 g / mL, what is the volume of alcohol? (Show your work and write units after every number. Write your answer with the correct number of significant digits. 3 points)

39.) If the volume of a brick is 1050 mL and its density is 12.50 g / mL, what is the mass of the brick? (Show your work and write units after every number. Write your answer with the correct number of significant digits. 3 points)

* The grade for this assignment can be reduced to the percentage that you earn on the original unit 1 test.