**Organizing Data** (p. 22 – 28)

**I. Presenting Scientific Data**

**1. Organizing and presenting data are necessary for a scientist.**

Circle One : True False

**2. Match the correct type of graph with the correct definition.**

1. \_\_\_\_\_\_\_\_ Line Graph A. Shows a comparison of several items or events

2. \_\_\_\_\_\_\_\_ Bar Graph B. Illustrates continuous change

3. \_\_\_\_\_\_\_\_ Pie Graph C. Displays parts of a whole

**3. On a line graph, the dependent variable belongs on the y-axis.**

Circle One : True False

**4. On a line graph, the independent variable belongs on the x-axis.**

Circle One : True False

**II. Writing Numbers In Scientific Notation**

**1. Define the term scientific notation.**

Scientific Notation –

**2. The coefficient (first number) of a value in scientific notation is between 0 and 10.**

Circle One : True False

**3. The zeros in scientific notation are represented as powers of 10.**

Circle One : True False

**4. Negative powers of 10 are represent are number less than 1.**

Circle One : True False

**5. Write the following numbers in scientific notation.**

300,000,000 m/s (speed of light) : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

0.0015 kg : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Write the following numbers in long form.**

4.5 x 103 g : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.99 x 10-8 cm : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7. Match the correct function with the correct procedure when using scientific notation.**

1. \_\_\_\_\_\_\_\_ Addition A. Multiply coefficients; add powers of 10

2. \_\_\_\_\_\_\_\_ Subtraction B. Convert to similar powers of 10; Add coefficients

3. \_\_\_\_\_\_\_\_ Multiplication C. Divide coefficients; subtract powers of 10

4. \_\_\_\_\_\_\_\_ Division D. Convert to similar powers of 10; Subtract coefficients

**III. Using Significant Figures**

**1. Define the term significant figures.**

Significant Figures -

**2. Why do scientists use significant figures?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. Which of the following rules is false concerning significant figures?** (Not in the book.)

a. Non-zero digits are significant.

b. Final zeros after a decimal point are significant.

c. Zeros between two significant digits are significant.

d. Zeros used only as placeholders are not significant.

**4. How many significant digits does each of the following numbers possess?**

1. 1,405 m \_\_\_\_\_\_\_\_\_\_ 4. 12.007 kg \_\_\_\_\_\_\_\_\_\_

2. 2.50 km \_\_\_\_\_\_\_\_\_\_ 5. 5.8 x 106 kg \_\_\_\_\_\_\_\_\_\_

3. 0.034 m \_\_\_\_\_\_\_\_\_\_ 6. 3.03 x 10-5 mL \_\_\_\_\_\_\_\_\_\_

**5. Define the terms precision and accuracy.**

Precision –

Accuracy -

**6. The result of an arithmetic operation can never be more precise than the least-precise**

**measurement.**

Circle One : True False

**7. Solve the following equations using the correct number of significant digits.**

1. 5.012 km + 3.4 km + 2.33 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km

2. 45 g – 8.3 g = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ g

3. 3.40 cm x 7.125 cm = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

4. 54 m / 6.5 s = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m/s