**Quizzes on *Calculations In Chemistry* – Modules/Chapters 1 and 2**

Below are quizzes to cover an assignment of“As homework, complete Modules/Chapters 1 and 2 in *Calculations in Chemistry* and be quiz ready.” If part of those chapters are assigned, part of the quiz can be given. The quiz can be used with

* The two chapters/modules of *Calculations in Chemistry* posted online for free student use, or
* The full (39 modules) book and ebook versions of *Calculations in Chemistry* for General Chemistry, or
* The 22 chapter book and ebook versions of *Calculations in Chemistry – An Introduction* designed for courses in Preparation for General Chemistry.

The quiz is intended to be given on the day the assignment is due.

The quiz can be shortened by editing the copy or by asking students to X off certain easier or harder questions of your choice. Quizzing just a sample of the assignment should be enough to encourage future homework completion.

If used with the *Introduction* lessons, Question 6 should be deleted or marked out (adding and subtracting with exponentials is omitted as a topic in the *Introduction* version).

The quiz is intended to be easy IF they have done the assignment, hoping to encourage them to do homework.

The quiz as written says “Do NOT use a calculator.” This can be deleted and calculators allowed. However, the arithmetic is VERY simple. Studies have found that student “automaticity” in arithmetic has shown to be the best predictor of general chemistry success. In Module/Chapter 1 they were encouraged to “Try solving without a calculator.” In Lesson 2C they were quizzed and asked to “flashcard their math facts” if they are rusty. The lessons encourage practicing mental math where possible.

The last question is intended as an indicator of “do they know mental arithmetic?” If calculators are allowed, that question should be deleted.

There are 3 versions of the quiz, but each quiz should be at the same level of difficulty. On the day before the real quiz, one version may be handed out as a practice quiz, to then go over in class to allow for questions. If that is done, in question 7 on the practice (or real) quiz, change *smallest* to *largest* so that the real quiz will differ from the practice.

For the real quiz, it is suggested that 2 or more versions be printed and distributed in an alternating pattern if possible. (If there is a respected honor code, this may not be warranted.)

To achieve the different versions, some questions have altered numbers. On others, the questions and answers are the same, but the order of the answers is scrambled.

To speed grading, stack several copies so only the answers show.

Similar quizzes are available to instructors for all chapters of both the Prep and Gen Chem full versions of the lessons. For additional info, see [www.ChemReview.Net](http://www.ChemReview.Net) or the Resources tab at [www.ChemReview.Net/blog](http://www.ChemReview.Net/blog) .

Critical feedback is appreciated: feedback@ChemReview.Net

**Quiz: Modules 1 and 2** Your Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You may *NOT*  use a calculator on this quiz. You may scribble on this paper or on a sheet of scratch paper. Do not round answers on this quiz. On Questions 1-6, *convert* your answers to *scientific* notation**.**

**Transfer your answers to the columns at the right.**

1. Change to scientific notation**:**  0.74 =

2. (4 x 10―2) (6 x 1014) =

3. 6 x 10―9 =

 ― 3 x 104

4. 10―16 =

 ― 2.0 x 10―4

5. 4.00 x 10―12 =

 (2)(2.0 x 10―7)

6. ( 4.00 x 10―15 ) + ( 2.00 x 10―13 ) =

7. Which of these is the smallest? Put the correct LETTER at the right.

 a. 1 kilosecond b. 1 picosecond c. 1 microsecond d. 1 nanosecond

Fill in the blanks. Add an exponential term ( 10**?** ) to 8 and 9:

8. 1 watt = \_\_\_\_\_\_\_\_\_\_\_ megawatts 9. 1 kPa = \_\_\_\_\_\_\_\_\_\_\_\_ Pa

Add written-out metric *prefixes* to 10 and 11:

10. 1 x 10―2 grams = 1 \_\_\_\_\_\_\_\_\_gram 11. 1 x 109 meters = 1 \_\_\_\_\_\_\_\_\_meter

12. Write the decimal equivalent: 1/8 = \_\_\_.\_\_\_ \_\_\_ \_\_\_

13. 6.0 x 10─1 L • g • 2.0 m • 4.0 s4 =

 s 3.0 x 10─5 L

14. Multiply 76 x 89 =

Write your answers below.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Quiz: Modules 1 and 2** Your Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You may *NOT*  use a calculator on this quiz. You may scribble on this paper or on a sheet of scratch paper. Do not round answers on this quiz. On Questions 1-6, *convert* your answers to *scientific* notation**.**

**Transfer your answers to the columns at the right.**

1. Change to scientific notation**:**  0.074 =

2. (4 x 10―2) (8 x 1016) =

3. 8 x 10―8 =

 ― 2 x 105

4. 10―18 =

 ― 4.0 x 10―3

5. 4.00 x 10―16 =

 (2)(1.0 x 10―5)

6. ( 2.00 x 10―8 ) + ( 4.00 x 10―6 ) =

7. Which of these is the smallest? Put the correct LETTER at the right.

a. 1 microsecond b. 1 nanosecond c. 1 kilosecond d. 1 picosecond

Fill in the blanks. Add an exponential term ( 10**?** ) to 8 and 9:

8. 1 watt = \_\_\_\_\_\_\_\_\_\_\_ nanowatts 9. 1 mPa = \_\_\_\_\_\_\_\_\_\_\_\_ Pa

Add written-out metric *prefixes* to 10 and 11:

10. 1 x 10―12 grams = 1 \_\_\_\_\_\_\_\_\_gram 11. 1 x 1012 meters = 1 \_\_\_\_\_\_\_\_\_meter

12. Write the decimal equivalent: 1/30 = \_\_\_.\_\_\_ \_\_\_ \_\_\_

13. 2.0 x 10─2 L • g • 2.0 m • 4.0 s3 =

 s 8.0 x 10─5 L

14. Multiply 76 x 79 =

Write your answers below.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Quiz: Modules 1 and 2** Your Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

You may *NOT*  use a calculator on this quiz. You may scribble on this paper or on a sheet of scratch paper. Do not round answers on this quiz. On Questions 1-6, *convert* your answers to *scientific* notation**.**

**Transfer your answers to the columns at the right.**

1. Change to scientific notation**:**  0.0074 =

2. (3 x 10─4) (6 x 1016) =

3. 9 x 10―14 =

 ― 3 x 106

4. 10―12 =

 ― 5.0 x 10─8

5. 8.00 x 10─14 =

 (2)(2.0 x 10─5)

6. ( 4.00 x 10─10 ) + ( 6.00 x 10─8 ) =

7. Which of these is the smallest? Put the correct LETTER at the right.

a. 1 picosecond b. 1 microsecond c. 1 kilosecond d. 1 nanosecond

Fill in the blanks. Add an exponential term ( 10**?** ) to 8 and 9:

8. 1 watt = \_\_\_\_\_\_\_\_\_\_\_ milliwatts 9. 1 GPa = \_\_\_\_\_\_\_\_\_\_\_\_ Pa

Add written-out metric *prefixes* to 10 and 11:

10. 1 x 10─6 grams = 1 \_\_\_\_\_\_\_\_\_gram 11. 1 x 106 meters = 1 \_\_\_\_\_\_\_\_\_meter

12. Write the decimal equivalent: 1/40 = \_\_\_.\_\_\_ \_\_\_ \_\_\_

13. 8.0 x 10─3 L • g • 2.0 m • 3.0 s5 =

 s 4.0 x 10─5 L

14. Multiply 76 x 85 =

Write your answers below.

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_