Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class period: \_\_\_\_\_\_

![MMj02889280000[1]]()Unit 1: Introduction to Chemistry

Test Review ANSWER KEY

**What to study?**

* Quizzes
* Homework
* Notes
* Bell Ringers

**What will the questions be like? What can I expect?**

This test will be just like the previous quizzes you have taken.

* Matching
* Multiple choice
* Short answer
* Calculations

**Sample questions/Important Topics**

1. **Fill in the following with the best answer:**
	1. Chemistry the study of matter and the changes it undergoes.
	2. The observation is the step in the scientific method in which you use your 5 senses in order to define the problem.
	3. Density is a physical property of a substance
	4. Leading zeros are never significant
	5. Paper burning is an example of a chemical change.
	6. Mass is a measure of the amount of matter in an object.
	7. In a chemical equation the reactants are always written on the left side of the arrow.
	8. Pure substances always have uniform and definite compositions.
2. Describe 3 differences between ice, liquid water and steam.

|  |  |  |
| --- | --- | --- |
| **Ice** | **Liquid Water** | **Steam** |
| Solid | Liquid | Gas |
| Particles are very close together, vibrate in place | Particles can slide past each other - flow | Particles are very far apart, chaotic motion |
| Definite volume/shape | Indefinite shapeDefinite volume | Indefinite shape/volume |

1. You come home after work on Saturday, and although your family is always home at this time, you find the house empty upon your return. Describe how you would use the scientific method to determine where they are. **Make sure you describe each step fully**.

**Observation** – I **see** that my family is not home. I cannot **hear** any talking or noise.

**Hypotheses** – It is my dad’s birthday tonight – I bet my mom and dad ran to the store to get a birthday cake. My mom and dad could be out buying presents.

**Experiment/Analysis** – There are newly wrapped birthday presents sitting on the counter. They must have gone out for a cake. I checked the fridge, there is no birthday cake in there. They must be out to get one.

**Conclusion** – My mom and dad are out getting a birthday cake for my dad’s birthday.

1. Identify the following as: Element (E), Compound (C), Heterogeneous Mixture (HE), Homogeneous Mixture (HO).
2. C hydrochloric acid
3. E phosphorous
4. HE sand & water
5. HO cake batter
6. HO vanilla ice cream
7. E boron (B)
8. C sodium chloride (NaCl)
9. HE granite
10. Identify the following as either a chemical change (CC) or a physical change (PC)
11. CC burning paper
12. PC ripping paper
13. PC breaking a glass window
14. CC digesting food
15. PC boiling water
16. PC dissolving salt in water
17. PC pulverizing a rock
18. PC mixing salt & pepper
19. Identify the following as either a chemical property (CP) or a physical property (PP) of water.
20. PP density = 1.0 g/mL
21. PP tasteless
22. CP not combustible
23. PP not magnetic
24. CP reacts with sodium to produce sodium hydroxide and water
25. PP sweet smell
26. PP freezes at 0oC
27. PP dissolves in water
28. A 100 g mass is weighed three times on a balance and the following results are obtained: 95.0g, 94.9g, 95.1 g. Are these measurements accurate? Are they precise? Explain your answer **completely.**

**Not accurate –** these measurements are NOT close enough to the true value

**Precise –** these measurements are very close to each other, and therefore these results were reproduced multiple times.

1. Indicate how many significant figures are in each of the following numbers:
	1. 128 (3)
	2. 0.00250 (3)
	3. 2050 (3)
	4. 0.135 (3)
	5. 10,000 (1)
	6. 0.30 (2)
	7. 70.0 (3)
	8. 100.5 (4)
	9. 0.0020300 (5)
	10. 24.00000 (7)
2. Perform the following calculations and round your answers to the correct number of significant figures. Answers may be in either long form or scientific notation.
3. 45,000 x 128,000 5.8x109
4. 15,000,000,000 / 0.4317 3.5x1010
5. 0.000 032 x 0.000 000 7 2x10-11
6. 3.145 + 2.1 5.2
7. 65.7912 - 0.33 65.46
8. (1.22 x 10-13)/(3.445 x 106) 3.54x10-20
9. 99.999 + 1 101
10. (3.1 x 108) x (4.792 x 105) 1.5x1014
11. 79.321 - 5.9218 73.399
12. 000 000 000 02 / 0.00311 6x10-12