U4 C1 test study guide – Law of conservation of mass/ open and closed systems

1. Define the Law of Conservation of mass

2. What is a closed system?

3. Give an example of closed system.

4. What is an open system?

5. Give an example of an open system.

6. Is mass conserved in a in a closed system?

7. Is volume always conserved in a closed system?

8. What is uncertainty? How is uncertainty used to determine if a conclusion is valid?

9. Does air have mass?

10. Do all gases have mass?

11. Does the mass of an open system always change?

12. If you have an open soda and it goes flat, has it lost mass?

13. Toby has a jar filled with ice cubes. The jar has a tight fitting lid. The mass of the jar is 80 g. He sets the jar of ice outside in the sun. What type of system is this? What do you expect will happen to the mass when the ice has melted?

14. Betty's cat has a mass of 4500 g. She feeds her cat 100 g of cat food and 50 g of water. Hours later Betty's cat has a mass of 4630 g. How much cat food and water did the cat eliminate?

15. A soccer ball has a mass of 420 g. Tim and Jim take the soccer ball and play a game of soccer. After they are finished the soccer ball has a mass of 405 g. How much air did the soccer ball lose?

16. Tim has a mass of 80 kg. He enters an all you can eat ice cream competition and wins. After the competition he has a mass of 80.6 kg. How much ice cream did Tim eat?

17. Tammy performs an experiment that is a fair test to see if she gains mass after a long swim. Before the swim her mass is 69.6 kg. Immediately after her swim she measures her mass on the same scale as 69.8 kg. The uncertainty of the scale is 0.5 kg. What can you conclude about Tammy's experiment?