Name _______________________

CHE/PHY 125
FALL 2004
TEST 1

T  F   1. A liquid’s shape depends on the container, but its volume does not.
T  F   2. Observational information used to describe something is called data.
T  F   3. A 100 ml piece of iron has twice the volume as a 50 ml piece of iron.
T  F   4. The dependent variable is usually placed on the horizontal axis.
T  F   5. A theory is a hypothesis that has been supported by many experiments.
T  F   6. A compound is a pure substance that cannot be broken down into something simpler by physical or chemical means.
T  F   7. A mixture can only be separated by chemical means.
T  F   8. The air that we breathe is a mixture.
T  F   9. All matter has mass.
T  F  10. A compound is a mixture with fixed proportions of its components.

11. Which of the following senses provide the most accurate data?
   A. Smell  B. Touch
   C. Hearing  D. Taste
   E. None of these provide data

12. Many great scientific discoveries were made not through the use of the Scientific Method, but by accident, a process called:
   A. Experimentation  B. Modeling
   C. Serendipity  D. Luck
   E. Chance

13. Which science process skill was not used in the M&M experiment?
   A. Communicating  B. Observing
   C. Predicting  D. Classifying

14. A tentative explanation of a scientific problem is called a(n):
   A. Experiment  B. Hypothesis  C. Theory  D. Law  E. Model

15. Three students measure the length of the same block using a standard meter stick and recorded its length as shown below. Which student recorded the results in an unacceptable manner?
   A. 2567.12 mm  B. 2567 mm
   C. 2570 mm  D. No answer – they are all acceptable.

16. In the Three Cups exercise, what science process skill was used primarily?
   A. Predicting  B. Controlling variables
   C. Experimenting  D. Observing

17. If it is 40°C outside, you would most like wear a ___________________.
   A. bathing suit  B. heavy coat.
   C. long sleeve shirt  D. pair of jeans

18. An adult mouthful is closest to a ________________.
   A. liter  B. deciliter  C. a centiliter

19. The English unit closest in size to a meter is
   A. Yard  B. Inch  C. Foot
20. Which of the following is not a SI unit of the property it measures?
A. length – meter  
B. volume – liter  
C. mass - pound

21. The ISU unit of volume closest in size to a quart is
A. deciliter  
B. liter  
C. decaliter

22. Another name for the manipulated variable is
A. output  
B. independent  
C. effect  
D. dependent

23. If a cube of JELLO is cut into two pieces, what total property of the two pieces changes?
A. mass  
B. volume  
C. density  
D. surface area

24. The property of volume is a measure of
A. how much matter the object contains  
B. the compactness of matter in a given space  
C. the extent of the surface of the object  
D. how much space the object occupies

25. The width of an adult hand is closest to a ________.
A. decimeter  
B. meter  
C. centimeter  
D. deciliter

26. When you measure the length of a hall you find that it is 2 dam plus 1 dm plus 3 cm long. What is its length in dm?
A. .02013 dm  
B. 2.13 dm  
C. 201.3 dm  
D. 2.013 dm

27. Which of the following are not the same?
A. 1 liter and 1000 cc  
B. 1 ml and 1 cm³  
C. 1 cl and 1 cm  
D. 100 seconds and 1 hectosecond

28. When a student measures the dimensions of a wooden block, they find the following dimensions: length – 14.2 cm; width – 6.8 cm; thickness – 4.8 cm. What is the volume of the block in deciliters?
A. 0.463 dl  
B. 463 dl  
C. 4.63 dl

29. If your students were to measure a distance on the school playground that was over 30 meters long, the best choice for the instrument (s) to use are________.
A. a meter stick  
B. a meter stick and a trundle wheel  
C. a meter stick and a roll of string  
D. a ruler and a roll of string.

30. The prefix deci means ____________.
A. 0.1  
B. 10  
C. 100  
D. 1000

31. Which of the following is not a vector?
A. 100 pounds @ 180°  
B. Your height  
C. Velocity (speed and direction)  
D. Your location

32. What is normal body temperature?
A. 98.6 °C  
B. 37 °C  
C. 48 °C  
D. none of these answers
33. How many hectometers are in a centimeter?
A. 10000  
B. 0.001  
C. 0.0001  
D. none of the above

34. The nature of science is such that
A. Eventually a scientific law becomes a scientific theory.  
B. Nature always obeys all the scientific laws.  
C. Scientific laws describe relationships observed in nature.  
D. Scientific theories are statements of absolute truth.

35. Which of the following conclusions can not be made from the graph you made in the “Hot Stuff” experiment?
A. An exothermic chemical reaction took place.  
B. The temperature of the sample changed.  
C. The chemical reaction did not give off significant heat over the whole observation period.  
D. The mass of the sample did not change.

36. Scientific method involves each of the following except
A. Systematic search for information.  
B. Reformulating observations to agree with scientific laws.  
C. Forming and testing possible solutions.  
D. Observation and experimentation.

37. In the paper towel experiment (quicker picker upper), what science process skill was not used?
A. Measuring  
B. Observing  
C. Making models

38. A student measured the length of a table and got the results below. Which is the best choice to use to record the length of the table?
A. 1.543 m  
B. 15.43 dm  
C. 154.3 cm  
D. 1543 mm

39. The graph below shows the results of an experiment that a student conducted. The student measured the distance an object fell and the time taken to fall that distance. What mistake did the student make on the graph shown?
A. The vertical axis is labeled incorrectly  
B. The horizontal is labeled incorrectly  
C. The graph is does not have a meaningful title  
D. The graph does not have a smooth curve through the data.