T  F   1.  The property of volume is a measure of how much matter is in an object.
T  F   2.  The dependent variable is usually placed on the vertical axis of a graph.
T  F   3.  Serendipity is the process of identifying and controlling variables.
T  F   4.  In graphing scientific data, one rarely simply connects the data points.
T  F   5.  In the exercise Candle Observations, most observers collect many pieces of data.
T  F   6.  A Law is a hypothesis that has been widely supported by experimentation.
T  F   7.  Another term for Observations is Facts.
T  F   8.  All great discoveries were made through the use of the Scientific Method.

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

10. You haven’t eaten for days. Somebody gives you a decagram of cake. Most likely you would
   A. Eat as much as you could and save the rest for later
   B. Call up a dozen friends and have a party
   C. Eat the cake and then order a pizza

11. 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.

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

13. If you add a vector 4 units long to a vector 5 units long you could not get a vector ____ units long.
    A. zero  B. 9  C. 4  D. 10
    E. Neither A and D are possible

14. Which of the following is not a vector?
    A. 180 degrees due south  B. 100 m/s @ 45° NE
    C. 100 pounds straight up  D. NOTA, they are all vectors

15. The classroom balances that we used in class should not be used to measure masses less than _____ grams if you
    want less that 10 % error.
    A. 100  B. 1  C. 10  D. 1000

16. Which of the following are the same?
    A. 1 liter and 1000 cl  B. 1 ml and 1 cm
    C. 1 cl and 1 cc  D. 1000 seconds and 1 kilosecond

17. Which of the following is equal to 2.468 dam?
    A. 2468 mm  B. 24.68 km  C. 246.8 dm  D. 0.2468 hm
18. The prefix hecto means ____________.
   A. 0.1  B. 10  C. 100  D. 1000

19. The mass of a penny is closest to
   A. a kilogram  B. a gram  C. a decaliter  D. a milligram

20. How many centimeters are in a kilometer?
   A. 10000  B. 0.0001  C. 100000  D. NOTA

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

22. If a student says that the “best” paper towel is the prettiest one, they have made a(n)
   A. Observation  B. Prediction  C. Hypothesis  D. Operational Definition

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

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

25. When you measure the length of a hall you find that it is 2 dam plus 4 m plus 6 cm plus 8 mm long. What is its length in dm?
   A. 0.24068 dm  B. 24.068 dm  C. 2468 dm  D. 240.68 dm

26. An adult mouthful is closest to a ____________.
   A. liter  B. deciliter  C. a centiliter

27. When a student measures the dimensions of a wooden block, they find the following dimensions: length – 21.5 cm; width – 10.4 cm; thickness – 9.3 cm. What is the volume of the block in deciliters?
   A. 20.80 dl  B. 2080 dl  C. 20800 dl

28. 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

29. 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.

30. If it is 20 °C outside, you would most likely say it was ___________ outside.
   A. cold  B. cool  C. comfortable  D. warm  E. hot
31. 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.

32. In the M&M experiment What’s in the Bag, what science process skill was not involved?
A. Classifying
B. Communicating
C. Using numbers
D. Controlling Variables

33. Using the senses to determine the properties of an object is called
A. Inferring
B. Classifying
C. Observing
D. Defining Operationally

34. Arranging the hands-on exercises by common properties in your notebook involves what science process skill?
A. Classifying
B. Inferring
C. Measuring
D. Controlling variables

35. If you use a standard meter stick to measure the length of an object that is one decimeter long, what will be the experimental percent error due to the instrument?
A. 100 %
B. 10 %
C. 1 %
D. 0.1 %

35. The plot below shows the result that a 5th grade student obtained when plotting the mass of base ten blocks versus the number of blocks. What do you conclude from this graph?
A. The student did not draw the independent variable axis correctly.
B. The student did not draw the dependent variable axis correctly.
C. The mass of all the blocks is not the same
D. The student made a mistake.
E. Either of answers C or D could be true.

36. The graphs on the next page were plotted by a students who recorded distance versus time data for a toy car. Which graph was done correctly?
A.

B.

C.

D. All of these graphs are acceptable.