T  F  1. A liquid’s shape depends on the container, but its volume does not.
T  F  2. A referent is a familiar object one can use to describe the property of an object.
T  F  3. Measurement information used to describe something is called data.
T  F  4. A 100 g piece of iron has twice the volume as a 50 g piece of iron.
T  F  5. The mass of 1000 cm³ of water is a kilogram.
T  F  6. The density of a 100 g piece of iron is twice as great as the density of a 50 g piece of iron.
T  F  7. The dependent (or effect) variable is usually placed on the x-axis.
T  F  8. A theory is a hypothesis that has been shown to be correct by many experiments.
T  F  9. The symbol $\propto$ has the meaning of “proportional to”

10. Equations are used to
A. describe a property
B. define a concept
C. describe how quantities change together
D. all of the above

11. Which of the following is not a SI unit of the property it measures?
A. length - meter
B. volume - liter
C. time - second
D. mass - kilogram

12. The English unit of volume closest in size to a liter is
A. gallon
B. ounce
C. quart

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

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

15. The volume of a sample of water is 20 cm³. The mass of this sample is
A. 20 kilograms
B. 20 grams
C. 20 milligrams
D. 20 ounces

16. 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
17. A rock with a volume of 5.0 cm\(^3\) has a mass of 30.0 g. Its density is
A. 150 g/cm\(^3\)
B. 35 g/cm\(^3\)
C. 0.167 g/cm\(^3\)
D. 6.0 g/cm\(^3\)

18. A tentative scientific explanation which may or may not be rejected upon further experimentation is called a
A. theory
B. hypothesis
C. model
D. principle

19. Imagine a 10 g chunk of aluminum (density 2.7 g/ml) and a 10 g chunk of iron (density = 7.9 g/ml) Which of the following are true?
A. The chunk of iron is smaller than the chunk of aluminum.
B. The chunk of iron is more massive than the chunk of aluminum
C. The chunk of aluminum is smaller than the chunk of iron.
D. Both objects have the same volume.

20. Consider the graph to the right. The density of substance (b) is most nearly
A. 0.63 g/ml
B. 1.0 g/ml
C. 1.3 g/ml
D. 2.4 g/ml

21. Three liquids A, B and C were carefully poured into a cylinder so that they wouldn’t mix. Then a solid was placed in the cylinder. It came to rest at the boundary between liquids B and C. What is the correct order of the four substances, from lowest density to highest density?
A. A, B, C, solid
B. C, B, solid, A
C. A, solid, B, C
D. A, B, solid, C

22. The horizontal axis on a standard Cartesian (rectangular) graph is called the ____________.
A. ordinate
B. x axis
C. abscissa
D. y axis

23. A Diet Coke and a regular Coke can easily be distinguished from each other without opening the cans by the difference in their:
A. Shape
B. Density
C. Volume
D. Temperature
24. Which of the following are not the same?
A. 1 liter and 1000 cm\(^3\)
B. 1 ml and 1 cm\(^3\)
C. 1 cl and 1 cc
D. 100 seconds and 1 hectosecond

25. Which of the following is not a SI unit of the property it measures?
A. length - meter
B. volume - quart
C. time - second
D. mass - kilogram

26. If your students were to measure a distance on the school play ground 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.

27. The prefix hecto means ____________.
A. .1
B. 10
C. 100
D. 1000

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

29. What is normal body temperature?
A. 98.6 °C
B. 37 °C
C. 48 °C
D. none of the above

30. How many decameters are in a centimeter?
A. 10000
B. .0001
C. 100
D. NOTA

31. If you had a clock that you could only read to the nearest second, what is the least number of seconds that you should measure to produce an error no less that 1%?
A. 100
B. 10
C. 1000
D. 1

32. What is the minimum mass that should be measured using the balance that we constructed in class?
A. 100 g
B. 1 g
C. 10 g
D. It doesn’t matter how much mass you use.