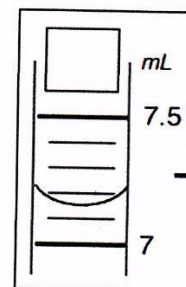


Measurement Unit Exam
80 points

DO NOT WRITE ON THIS TEST! PLACE ALL ANSWERS ON ANSWER SHEET.

Use a pencil to darken in the circles on answer sheet. Be sure to completely erase incorrect choices.

- A 1. What is the metric system prefix for the quantity 0.01?
a. *centi-* c. *kilo-*
b. *deci-* d. *micro-*
- A 2. Density is found by dividing _____.
a. mass by volume c. mass by area
b. volume by mass d. area by mass
- D 3. A chicken farmer counted 1350 chickens on his ranch. How many sig figs is that?
a. one c. three
b. two d. four
- D 4. How many significant figures are in the measurement 811.40 grams?
a. two c. four
b. three d. five
- B 5. What is the volume of 45.6 g of silver if the density of silver is 10.5 g/mL?
a. 0.23 mL c. 479 mL
b. 4.34 mL d. none of the above
- B 6. The 65 ____ man so thirsty that he drank 1500 ____ of water.
a. g, mL c. g, L
b. kg, mL d. kg, L
- D 7. Which of the following equalities is NOT correct?
a. $100 \text{ cg} = 1 \text{ g}$ c. $1 \text{ cm}^3 = 1 \text{ mL}$
b. $1000 \text{ mm} = 1 \text{ m}$ d. $10 \text{ kg} = 1 \text{ g}$



- D 8. What is the most precise reading of the volume in the image on the right?
a. 7.3 mL c. 71.5 mL
b. 7.150 mL d. 7.15 mL
- C 9. All of the following changes to a substance are physical changes EXCEPT _____.
a. bending c. burning
b. melting d. polishing
- C 10. Which of the following is a physical change?
a. corrosion c. evaporation
b. explosion d. rotting of food

- __B__ 11. As the volume of a substance increases, the density of that substance ____.
- increases
 - is not affected
 - decreases
 - fluctuates
- __B__ 12. What is the quantity 987 milligrams expressed in grams?
- 0.000 987 g
 - 0.987 g
 - 9.87 g
 - 98,700 g
- __C__ 13. What is the result of multiplying 2.5×10^{10} cm by 3.5×10^{-7} cm?
- 8.75×10^3 cm
 - 8.75×10^{17} cm²
 - 8.75×10^3 cm²
 - 8.75×10^{-17} cm
- __B__ 14. The closeness of a measurement to its true value is a measure of its ____.
- precision
 - accuracy
 - reproducibility
 - usefulness
- __A__ 15. Which is NOT an example of a determinate error?
- three measurements taken on a balance were all slightly different
 - all measurements on a balance were 0.2g too low
 - student misread the meniscus on the graduate cylinder
 - student used a beaker to measure exactly 50.0mL
- __C__ 16. In the measurement 0.503 L, which digit is the estimated digit (digit of uncertainty)?
- 5
 - the 0 immediately to the left of the 3
 - 3
 - the 0 to the left of the decimal point
- __C__ 17. The bright blue color of the copper solution is an example of a _____ observation.
- quantitative
 - functional
 - qualitative
 - characteristic
- __C__ 18. Which set of measurements has the highest precision?
- 2g, 3g, 4g
 - 2.0g, 3.0g, 4.0g
 - 2.00g, 2.50g, 3.00g
 - 1g, 3.0g, 5g
- __D__ 19. What is the SI unit of mass?
- liter
 - joule
 - candela
 - kilogram
- __D__ 20. A sample of metal with a mass of 45.2 grams is an example of a
- chemical property
 - characteristic property
 - qualitative observation
 - quantitative observation
- __C__ 21. What is the product of 4.0×10^{-2} m and 8.1×10^2 m?
- 3×10^1
 - 3.0×10^1
 - 3.2×10^1
 - 3.24×10^1
- __B__ 22. The number 1529 rounded to two sig figs would be:
- 15
 - 1500
 - 15.00
 - 1500.
- __B__ 23. What is the measurement 111.009 mm rounded off to four significant digits?
- 111 mm
 - 111.0 mm
 - 111.01 mm
 - 110 mm

- __A__ 24. What is the quantity 7896 millimeters expressed in meters?
 a. 7.896 m c. 789.6 m
 b. 78.96 m d. 789,600 m
- __B__ 25. How many significant figures are in the measurement 40,500 mg?
 a. two c. four
 b. three d. five
- __B__ 26. Which of the following is NOT a hazardous material category?
 a. reactivity hazard c. health hazard
 b. mutation hazard d. fire hazard
- __D__ 27. The diameter of a carbon atom is 0.000 000 000 154 m. What is this number expressed in scientific notation?
 a. 1.54×10^{12} m c. 1.54×10^{10} m
 b. 1.54×10^{-12} m d. 1.54×10^{-10} m
- __C__ 28. I ate a hot dog for lunch that was 18 ____ long.
 a. meters c. centimeters
 b. grams d. kilometers
- __C__ 29. The boiling point of a substance is a _____.
 a. physical property c. both a & b
 b. characteristic property d. neither a & b
- __B__ 30. What is the sum of 7.68 m + 5.0 m?
 a. 12.68 m c. 13 m
 b. 12.7 m d. 10 m
- __A__ 31. What is the density of an object having a mass of 8.0 g and a volume of 25 cm³?
 a. 0.32 g/cm³ c. 3.1 g/cm³
 b. 2.0 g/cm d. 200 g/cm
- __A__ 32. The expression of num km in scientific notation is _____.
 a. dec $\times 10^3$ km c. dec $\times 10^{-3}$ km
 b. wr2 $\times 10^{-4}$ km d. dec $\times 10^4$ km
- __C__ 33. Which of the following measurements is expressed to three significant figures?
 a. 0.007 m c. 7.30×10^{-7} km
 b. 7077 mg d. 0.070 mm
- __C__ 34. A chemical change occurs when a piece of wood _____.
 a. is split c. decays
 b. is painted d. is cut
- __A__ 35. What is the volume of a crystal measuring 2.44×10^{-2} m by 1.4×10^{-3} m by 8.4×10^{-3} m?
 a. 2.9×10^{-7} m³ c. 2.9×10^{-5} m³
 b. 2.9×10^{-6} m³ d. 2.9×10^{-4} m³
- __A__ 36. How many significant figures are in the measurement 0.0034 kg?
 a. two c. five
 b. four d. This cannot be determined.
- __B__ 37. What quantity is represented by the metric system prefix kilo-?
 a. 100 c. 0.1

- b. 1000
d. 0.01
- __B__ 38. The weight of an object ____.
- a. is the same as its mass
 - b. depends upon the location
 - c. is not affected by gravity
 - d. is always the same
- __A__ 39. The number 0.00345 rounded to three significant figures would be
- a. 0.00345
 - b. 3.45
 - c. 3.50
 - d. 0.00350
- __B__ 40. When a balance is calibrated, does its accuracy, precision, or reliability improve?
- a. precision
 - b. accuracy
 - c. reliability
 - d. none of the above

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Answer Section

MULTIPLE CHOICE

1.	ANS: A STO: 3.1.10.D.2	DIF: L1	REF: p. 74	OBJ: 3.2.1
2.	ANS: A	DIF: L1	REF: p. 90, p. 91	OBJ: 3.4.1
3.	ANS: D			
4.	ANS: D	DIF: L1	REF: p. 66	OBJ: 3.1.3
5.	ANS: B	DIF: L2	REF: p. 91	OBJ: 3.4.1
6.	ANS: B			
7.	ANS: D STO: 3.1.10.D.2	DIF: L2	REF: p. 84	OBJ: 3.3.2
8.	ANS: B	DIF: L2	REF: p. 91	OBJ: 3.4.1
9.	ANS: C	DIF: L2	REF: p. 53	OBJ: 2.4.1
10.	ANS: C	DIF: L2	REF: p. 42	OBJ: 2.1.4
11.	ANS: B	DIF: L2	REF: p. 91	OBJ: 3.4.2
12.	ANS: B STO: 3.1.10.D.2	DIF: L1	REF: p. 84	OBJ: 3.3.2
13.	ANS: C	DIF: L2	REF: p. 63, p. 71	OBJ: 3.1.1
14.	ANS: B	DIF: L1	REF: p. 64	OBJ: 3.1.2
15.	ANS: A			
16.	ANS: C	DIF: L1	REF: p. 66	OBJ: 3.1.3
17.	ANS: C			
18.	ANS: C STO: 3.1.10.E.3	DIF: L2	REF: p. 64	OBJ: 3.1.2
19.	ANS: D STO: 3.1.10.D.2	DIF: L1	REF: p. 76	OBJ: 3.2.1
20.	ANS: D			
21.	ANS: C	DIF: L2	REF: p. 68, p. 71	OBJ: 3.1.3
22.	ANS: B			
23.	ANS: B	DIF: L2	REF: p. 66, p. 68	OBJ: 3.1.3
24.	ANS: A STO: 3.1.10.D.2	DIF: L1	REF: p. 84	OBJ: 3.3.2
25.	ANS: B	DIF: L1	REF: p. 66	OBJ: 3.1.3
26.	ANS: B STO: 3.1.10.D.2	DIF: L1	REF: p. 84	OBJ: 3.3.2
27.	ANS: D	DIF: L1	REF: p. 63	OBJ: 3.1.1
28.	ANS: C			
29.	ANS: C			
30.	ANS: B	DIF: L1	REF: p. 68, p. 70	OBJ: 3.1.3

31.	ANS: A	DIF: L2	REF: p. 90, p. 91	OBJ: 3.4.1
32.	ANS: A	DIF: L1	REF: p. 63	OBJ: 3.1.1
33.	ANS: C	DIF: L2	REF: p. 66	OBJ: 3.1.2
34.	ANS: C	DIF: L2	REF: p. 53	OBJ: 2.4.1
35.	ANS: A	DIF: L3	REF: p. 68	OBJ: 3.1.3
36.	ANS: A	DIF: L1	REF: p. 66	OBJ: 3.1.3
37.	ANS: B	DIF: L1	REF: p. 74	OBJ: 3.2.1
	STO: 3.1.10.D.2			
38.	ANS: B	DIF: L2	REF: p. 76	OBJ: 3.2.2
39.	ANS: A			
40.	ANS: B	DIF: L2	REF: p. 64	OBJ: 3.1.2
	STO: 3.1.10.E.3			