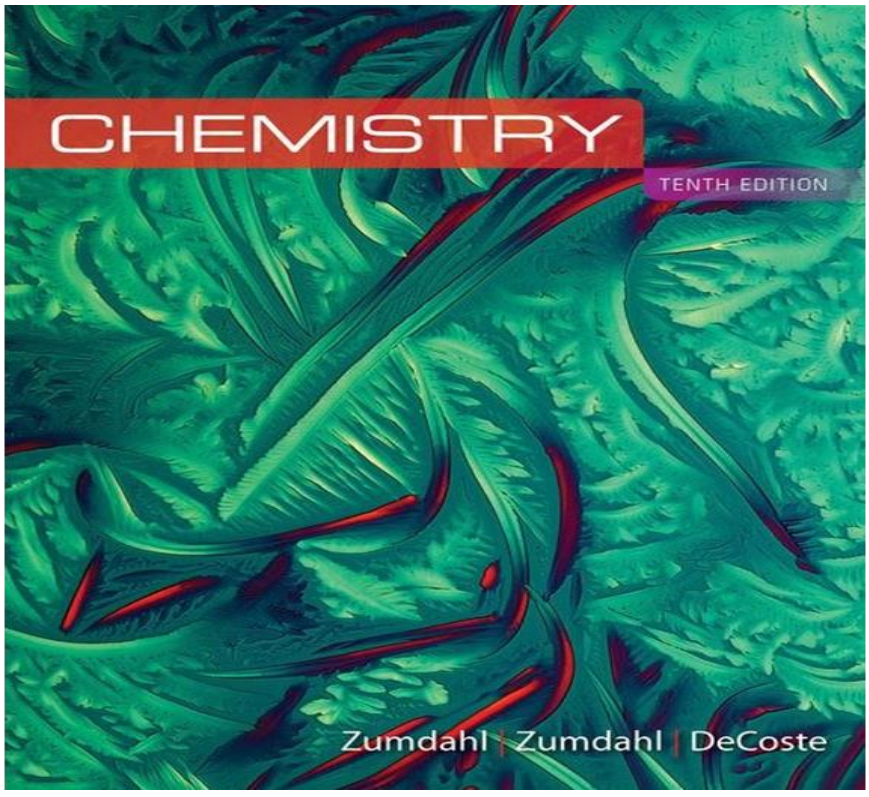
TEST BANK

CHEMISTRY,

10th Edition,

Zumdahl, DeCoste



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Test Bank for Chemistry, 10th Edition, Steven S. Zumdahl, Susan A. Zumdahl, Donald J. DeCoste, ISBN-10: 1305957407, ISBN-13: 9781305957404

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Chapter 1: Chemical Foundations
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1. Which of the following is an example of a quantitative observation?
   A) The piece of metal is longer than the piece of wood.
   B) Solution 1 is much darker than solution 2.
   C) The liquid in beaker A is blue.
   D) The temperature of the liquid is 60°C.
   E) At least two of the above (A-D) are quantitative observations.

   ANS: D DIF: Easy REF: 1.2
   KEY: Chemistry | general chemistry | general concepts | scientific method
   MSC: Conceptual

2. A quantitative observation
   A) contains a number and a unit
   B) does not contain a number
   C) always makes a comparison
   D) must be obtained through experimentation
   E) is none of these

   ANS: A DIF: Easy REF: 1.2
   KEY: Chemistry | general chemistry | general concepts | scientific method
   MSC: Conceptual

3. Generally, observed behavior that can be formulated into a statement, sometimes mathematical in nature, is called a(n)
   A) observation
   B) measurement
   C) theory
   D) natural law
   E) experiment

   ANS: D DIF: Easy REF: 1.2
   KEY: Chemistry | general chemistry | general concepts | scientific method
   MSC: Conceptual

4. The statement "The total mass of materials is not affected by a chemical change in those materials" is called a(n)
   A) observation
   B) measurement
   C) theory
   D) natural law
   E) experiment

   ANS: D DIF: Easy REF: 1.2
   KEY: Chemistry | general chemistry | general concepts | scientific method
   MSC: Conceptual

5. A chemical theory that has been known for a long time becomes a law.

ANS: F DIF: Easy REF: 1.2
KEY: Chemistry | general chemistry | general concepts | scientific method
MSC: Conceptual

6. Which of the following metric relationships is incorrect?
   A) 1 microliter = 10^{-6} liters
   B) 1 gram = 10^{3} kilograms
   C) 10^{3} milliliters = 1 liter
   D) 1 gram = 10^{2} centigrams
   E) 10 decimeters = 1 meter

   ANS: B DIF: Easy REF: 1.3
   KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
   MSC: Quantitative

7. For which pair is the SI prefix not matched correctly with its meaning?
   A) $\text{mega} = 10^{6}$
   B) $\text{kilo} = 1000$
   C) $\text{deci} = 10$
   D) $\text{nano} = 10^{-9}$
   E) $\text{centi} = 0.01$

   ANS: C DIF: Easy REF: 1.3
   KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
   MSC: Conceptual

8. A metric unit for length is
   A) gram
   B) milliliter
   C) yard
   D) kilometer
   E) pound

   ANS: D DIF: Easy REF: 1.3
   KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | base unit
   MSC: Conceptual

9. Which of the following is *not* a unit in the SI system?
   A) ampere
   B) candela
   C) Kelvin
   D) meter
   E) calorie

   ANS: E DIF: Easy REF: 1.3
   KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | base unit
   MSC: Conceptual

10. Order the four metric prefixes from smallest to largest.

A) nano- < milli- < centi- < kilo-
B) milli- < nano- < centi- < kilo-
C) kilo- < centi- < nano- < milli-
D) kilo- < centi- < milli- < nano-
E) centi- < nano- < kilo- < milli-

ANS: A DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
MSC: Conceptual

11. 8.1 kilogram(s) contains this many grams.
A) 8.1×10^{2}
B) 8.1×10^{3}
C) 81
D) 0.81
E) 8.1×10^{-3}

ANS: B DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | mass
MSC: Conceptual

12. Convert 0.3980 m to mm.
A) 398.0 mm
B) 3.980×10^{-3} mm
C) 3.980×10^{-4} mm
D) 0.03980 mm
E) none of these

ANS: A DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
MSC: Conceptual

13. 6.1 seconds contain this many picoseconds.
A) 6.1×10^{12}
B) 6.1×10^{-12}
C) 6.1×10^{-9}
D) 6.1×10^{9}
E) 6.1×10^{15}

ANS: A DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
MSC: Conceptual

14. 9.49 seconds contain this many nanoseconds.
A) 9.49×10^{7}
B) 9.49×10^{9}
C) 9.49×10^{12}
D) 9.49×10^{10}
E) 9.49×10^{8}

ANS: B DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
MSC: Conceptual

15. The distance of 21 km equals
A) 0.021 m
B) 0.21 m
C) 210 m
D) 2100 m
E) 2.1×10^4 m

ANS: E DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement | SI unit | prefixes
MSC: Conceptual

16. What is the measure of resistance an object has to a change in its state of motion?
A) mass
B) weight
C) volume
D) length
E) none of these

ANS: A DIF: Easy REF: 1.3
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual

17. The degree of agreement among several measurements of the same quantity is called _____. It reflects the reproducibility of a given type of measurement.
A) accuracy
B) error
C) precision
D) significance
E) certainty

ANS: C DIF: Easy REF: 1.4
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual

18. As part of the calibration of a new laboratory balance, a 1.000-g mass is weighed with the following results:

Trial	**Mass**
1	1.201 ± 0.001
2	1.202 ± 0.001
3	1.200 ± 0.001

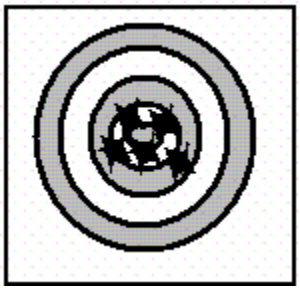
The balance is:
A) Both accurate and precise.
B) Accurate but imprecise.
C) Precise but inaccurate.
D) Both inaccurate and imprecise.
E) Accuracy and precision are impossible to determine with the available information.

ANS: C DIF: Easy REF: 1.4
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual

Consider the following three archery targets:

I. 

II. 

III. 

19. Which of the following figure(s) represent a result having high precision?
A) Figure I only
B) Figure II only
C) Figure III only
D) Figure I and Figure II
E) Figure II and Figure III

ANS: E DIF: Easy REF: 1.4
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual

20. Which of the following statements concerning these figures is correct?
A) Figure I represents systematic error and Figure II represents random error.
B) Figure I represents random error and Figure II represents systematic error.
C) Figure I and Figure II represent random error.
D) Figure I and Figure II represent systematic error.
E) Figure III represents no errors.

ANS: B DIF: Easy REF: 1.4
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual

21. Which of the following is the least probable concerning five measurements taken in the lab?
A) The measurements are accurate and precise.
B) The measurements are accurate but not precise.
C) The measurements are precise but not accurate.
D) The measurements are neither accurate nor precise.
E) All of these are equally probable.

ANS: B DIF: Easy REF: 1.4
KEY: Chemistry | general chemistry | general concepts | measurement
MSC: Conceptual