

- (1) Matter is defined as anything that is visible to the human eye. (1 Point)
- True False
- (2) An amorphous solid has long range, repeating order. (1 Point)
- True False
- (3) Liquids have definite volume and indefinite shape. (1 Point)
- True False
- (4) Solids have indefinite shape and volume. (1 Point)
- True False
- (5) Water is a mixture. (1 Point)
- True False
- (6) Saltwater is a homogeneous mixture. (1 Point)
- True False
- (7) Flammability of gasoline is a chemical property. (1 Point)
- True False
- (8) The melting of ice is a physical change. (1 Point)
- True False
- (9) In physical changes, the atoms or molecules that compose the matter do not change their identity, even though the matter may change its appearance. (1 Point)
- True False
- (10) A chemical change occurs when matter does not change its composition. (1 Point)
- True False
- (11) Like mass, energy can neither be created nor destroyed. (1 Point)
- True False
- (12) Temperature is simply a measure of the motion of atoms and molecules. (1 Point)
- True False
- (13) The coldest temperature possible is 0 K. (1 Point)
- True False
- (14) Which of the following statements about matter is FALSE? (2 Point)
- A) Matter occupies space and has mass.
B) Matter exists in either a solid, liquid or gas state.
C) Matter is ultimately composed of atoms.
D) Matter is smooth and continuous.
E) none of the above
- (15) A pure substance is: (2 Point)
- A) composed of two or more different types of atoms or molecules combined in variable proportions.
B) composed of only one type of atom or molecule.
C) composed of two or more regions with different compositions.
D) composed of two or more different types of atoms or molecules that has constant composition.
E) none of the above

(16) When methane is burned with oxygen, the products are carbon dioxide and water. If you produce 18 grams of water from 8 grams of methane and 32 grams of oxygen, how many grams of carbon dioxide were produced in the reaction? (2 Point)

- A) 40
- B) 22
- C) 58
- D) 18
- E) none of the above

(17) How many joules are there in a 255 calorie snack bar? (2 Point)

- A) 2.55×10^5
- B) 1.07×10^6
- C) 1.07×10^3
- D) 6.09×10^4
- E) none of the above

(18) If a particular process is endothermic, the reverse process must be a (an)

- A) chemical change. (2 Point)
- B) isothermal process.
- C) exothermic process.
- D) endothermic process.
- E) none of the above

(19) What is the value of 27°C on the Kelvin temperature scale? (2 Point)

- A) 273
- B) 246
- C) 300
- D) 81
- E) none of the above

(20) What is the value of 27°C on the Fahrenheit temperature scale? (2 Point)

- A) -6.8
- B) 106
- C) 300
- D) 81
- E) none of the above

(21) A 15.0 gram lead ball at 25.0°C was heated with 40.5 joules of heat. Given the specific heat of lead is 0.128 J/g•°C, what is the final temperature of the lead? (2 Point)

- A) 21.1°C
- B) 46.1°C
- C) 77.8°C
- D) 0.844°C
- E) none of the above

(22) How much heat (kJ) is needed to raise the temperature of 100.0 grams of water from 25.0°C to 50.0°C?

(2 Point)

A) 10450

B) 0.598

C) 1.05

D) 10.5

E) none of the above