Name: _____ **Class:** _____ **Date:** _____ **ID: C**

Ch.11-Q4W2-Chemical reactions and energy-Test.

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. The major product formed during the process of photosynthesis is _____.
a. sugar
b. water
c. DNA
d. carbon dioxide

____ 2. The energy involved in endothermic and exothermic reactions is _____.
a. light
b. chemical
c. heat
d. electrical

____ 3. In a chemical change, energy can be _____.
a. either created or destroyed
b. neither created nor destroyed
c. destroyed, but not created
d. created, but not destroyed

____ 4. If a reaction results in increased energy and increased entropy, will the reaction be spontaneous?
a. yes, if the temperature is low
b. yes, if the temperature is high
c. yes
d. no

____ 5. The process that uses carbon dioxide and water, in the presence of sunlight and chlorophyll, to form simple sugar and oxygen is _____.
a. capillary action
b. respiration
c. photosynthesis
d. digestion

____ 6. When photosynthesis is compared to the burning of fossil fuels, photosynthesis is a(n) _____ efficient process.
a. equally
b. less
c. more

____ 7. Spontaneous reactions occur if energy _____ and disorder _____.
a. decreases, increases
b. decreases, decreases
c. increases, increases
d. increases, decreases

____ 8. A _____ is the heat required to raise the temperature of 1 g of liquid water by 1ºC.
a. joule
b. kilocalorie
c. Calorie
d. calorie

____ 9. A cake is placed in a heated oven and baked. The reactions that take place during this process are _____.
a. exothermic
b. inhibited
c. endothermic
d. catalyzed

____ 10. Why is the natural process of photosynthesis far more efficient than electricity production by industrial processes?
a. Photosynthesis releases waste heat and increases the entropy of the environment.
b. Industrial processes that produce electricity convert energy from one form to another yet maintain low-entropy systems.
c. Industrial processes that produce electricity increase entropy through the combustion of carbon dioxide and water.
d. Photosynthesis builds complex high-energy molecules in a process in which entropy decreases.

____ 11. In processes that produce electricity, some of the energy used is wasted as _____ energy.
a. kinetic
b. heat
c. light
d. chemical

____ 12. If the heat of reaction is negative, the reaction is _____.
a. exothermic
b. endothermic
c. positive
d. negative

____ 13. The energy value of foods is measured in units of _____.
a. nutrients
b. Calories
c. joules
d. calories

____ 14. If 16 cans are produced from aluminum made from ore, how many cans can be made from recycled aluminum for the same cost?
a. 16
b. 8
c. 48
d. 32

____ 15. The burning of gasoline in an automobile engine is an example of a(n) _____.
a. endothermic reaction
b. exothermic reaction
c. reversible reaction
d. photosynthesis reaction

____ 16. The energy released in the formation of a compound from its elements is always _____ the energy required to decompose that compound into its elements.
a. similar to
b. identical to
c. greater than
d. less than

____ 17. In a(n) _____ reaction, the products are at a higher energy level than are the reactants.
a. exothermic
b. activation
c. catalytic
d. endothermic

____ 18. The two terms below that are identical in meaning are _____.
a. Calorie and joule
b. calorie and Calorie
c. kilocalorie and Calorie
d. calorie and joule

____ 19. The most common form of energy encountered in chemical reactions is _____.
a. light energy
b. nuclear energy
c. heat
d. electrical energy

____ 20. Even in an exothermic reaction, _____ is needed to get the reaction started.
a. activation energy
b. a catalyst
c. an inhibitor
d. an endothermic reaction

____ 21. The ultimate source of energy in the food web is _____.
a. photosynthesis
b. the sun
c. the Calvin cycle
d. light reactions

____ 22. How can industrial processes be as efficient as photosynthesis?
a. increase entropy by a decrease of waste heat
b. decrease entropy by a decrease of waste heat
c. increase entropy by an increase of waste heat
d. decrease entropy by an increase of waste heat

____ 23. If the energy graphs of a reaction, catalyzed and uncatalyzed, are examined, the peak representing activation energy is _____ for the catalyzed reaction.
a. equal
b. lower
c. unchanged
d. higher

____ 24. An example of a process in which entropy decreases is _____.
a. vaporization
b. melting
c. freezing
d. boiling

____ 25. When bowling pins at the end of an alley are hit by a bowling ball, the entropy of the pins _____.
a. decreases
b. is spontaneous
c. increases
d. stays the same

Ch.11-Q4W2-Chemical reactions and energy-Test.
Answer Section

MULTIPLE CHOICE

1.	ANS:	A	PTS: 1	DIF:	B	OBJ:	20-9
2.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-1
3.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-2
4.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-3
5.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-7
6.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-8
7.	ANS:	A	PTS: 1	DIF:	B	OBJ:	20-3
8.	ANS:	D	PTS: 1	DIF:	B	OBJ:	20-4
9.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-2
10.	ANS:	D	PTS: 1	DIF:	A	OBJ:	20-8
11.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-8
12.	ANS:	A	PTS: 1	DIF:	B	OBJ:	20-2
13.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-5
14.	ANS:	C	PTS: 1	DIF:	A	OBJ:	20-6
15.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-1
16.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-2
17.	ANS:	D	PTS: 1	DIF:	B	OBJ:	20-1
18.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-4
19.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-2
20.	ANS:	A	PTS: 1	DIF:	B	OBJ:	20-2
21.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-9
22.	ANS:	B	PTS: 1	DIF:	A	OBJ:	20-8
23.	ANS:	B	PTS: 1	DIF:	B	OBJ:	20-2
24.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-3
25.	ANS:	C	PTS: 1	DIF:	B	OBJ:	20-3