



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 The ability of carbon to **attract** electrons is

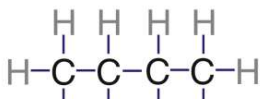
- A greater than that of nitrogen, but less than that of oxygen
- B less than that of nitrogen, but greater than that of oxygen
- C greater than that of nitrogen and oxygen
- D less than that of nitrogen and oxygen

2 In a **potential energy diagram**, the difference between the potential energy of the products and the potential energy of the reactants is **equal** to the

- A heat of reaction
- B entropy of the reaction
- C activation energy of the forward reaction
- D activation energy of the reverse reaction

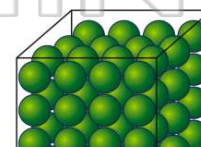
3 When butane burns in an excess of oxygen, the **principal products** are

- A  $\text{CO}_2$  and  $\text{H}_2\text{O}$
- B  $\text{CO}_2$  and  $\text{H}_2$
- C  $\text{CO}$  and  $\text{H}_2\text{O}$
- D  $\text{CO}$  and  $\text{H}_2$



4 Which **substance** has vibrating particles in regular, fixed positions?

- A  $\text{Ca(s)}$
- B  $\text{Hg(l)}$
- C  $\text{Cl}_2(\text{g})$
- D  $\text{CaCl}_2(\text{aq})$



## PREVIEW

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- 5
- 6
- 7
- C released, only
  - C both absorbed and released
  - D neither absorbed nor released

- C  $\text{NH}_3(\text{s})$
- D  $\text{NH}_3(\text{aq})$



9 The **activation energy** required for a chemical reaction can be decreased by

- A increasing the surface area of the reactant
- B increasing the temperature of the reactant
- C adding a catalyst to the reaction
- D adding more reactant

10 What occurs when the temperature is **increased** in a system at equilibrium at constant pressure?

- A The rate of the forward reaction increases, and the rate of the reverse reaction decreases.
- B The rate of the forward reaction decreases, and the rate of the reverse reaction increases.
- C The rate of the endothermic reaction increases.
- D The rate of the exothermic reaction decreases.



## ANSWER KEY

The ability of carbon to **attract** electrons is

- A greater than that of nitrogen, but less than that of oxygen
- B less than that of nitrogen, but greater than that of oxygen
- C greater than that of nitrogen and oxygen
- D less than that of nitrogen and oxygen

(d)

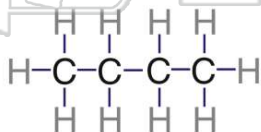
In a **potential energy diagram**, the difference between the potential energy of the products and the potential energy of the reactants is **equal** to the

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- C activation energy of the forward reaction
- D activation energy of the reverse reaction

(a)

When butane burns in an excess of oxygen, the **principal products** are

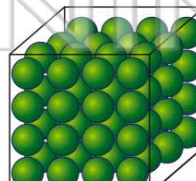
- A  $\text{CO}_2$  and  $\text{H}_2\text{O}$
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(a)

Which **substance** has vibrating particles in regular, fixed positions?

- A  $\text{Ca(s)}$
- B  $\text{Hg(l)}$
- C  $\text{Cl}_2(\text{g})$
- D  $\text{CaCl}_2(\text{aq})$



(a)



## PREVIEW

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D neither absorbed nor released

The **activation energy** required for a chemical reaction can be decreased by

- A increasing the surface area of the reactant
- B increasing the temperature of the reactant
- C adding a catalyst to the reaction
- D adding more reactant

(c)

What occurs when the temperature is **increased** in a system at equilibrium at constant pressure?

- A The rate of the forward reaction increases, and the rate of the reverse reaction decreases.
- B The rate of the forward reaction decreases, and the rate of the reverse reaction increases.
- C The rate of the endothermic reaction increases.
- D The rate of the exothermic reaction decreases.

(c)