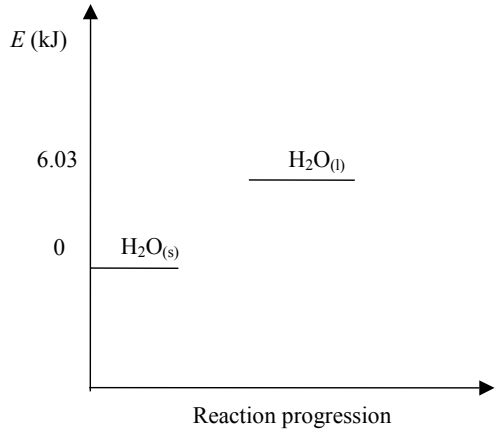
Endo/Exo Questions

1 The graph below represents snow melting in the spring:



Which of the following equations best represents this phenomenon?

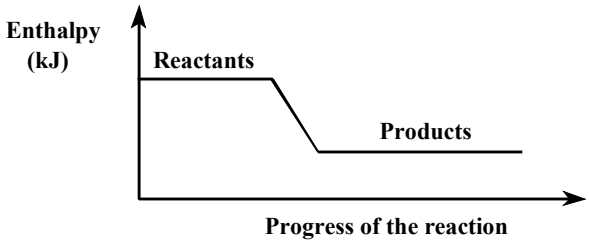
A) $H_2O_{(s)} \rightarrow H_2O_{(l)} + 6.03\ kJ$

B) $H_2O_{(l)} \rightarrow H_2O_{(s)} + 6.03\ kJ$

C) $H_2O_{(l)} + 6.03\ kJ \rightarrow H_2O_{(s)}$

D) $H_2O_{(s)} + 6.03\ kJ \rightarrow H_2O_{(l)}$

2 The following diagram shows the enthalpy involved in certain systems as a function of the progress of the reaction.



Which of the following two equations can be represented by this diagram?

1. $H_2O_{(g)} \rightarrow H_{2(g)} + \frac{1}{2} O_{2(g)}$ $\Delta H = +242\ kJ$
2. $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)} + 394\ kJ$
3. $H_2O_{(l)} + 47\ kJ \rightarrow H_2O_{(g)}$
4. $CH_{4(g)} + 2O_{2(g)} \rightarrow CO_{2(g)} + 2H_2O$ $\Delta H = -803\ kJ$

3 A reaction is represented by the following equation :

A + B → C + *x* kJ

What is TRUE about this reaction?

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A) The enthalpy of the product is greater than the enthalpy of the reactants.

B) The enthalpy of the product may be greater than or equal to the enthalpy of the reactants.

C) The enthalpy of the product is less than the enthalpy of the reactants.

D) The enthalpy of the product may be less than or equal to the enthalpy of the reactants.

Question 1 of 10
Icecream melting on a hot sunny day

- ☐ Endothermic
- ☐ No heat transfer
- ☐ mmmm Icecream.....
- ☐ Exothermic

Question 2 of 10
An endothermic reaction _____ heat

- ☐ absorbs
- ☐ releases
- ☐ discovers
- ☐ lets go of

Question 3 of 10
Sitting by a warm campfire on a cold night, the campfire is an example of

- ☐ oooo, pretty fire.....
- ☐ an exothermic process
- ☐ an endothermic process
- ☐ roasting marshmellows?

Question 4 of 10
Walking on hot sand feeling it on your feet in the summer, heat transfers from

- ☐ ouch! hot sand!

the sand to the sun

- your feet to the sand
- the sand to your feet

Question 5 of 10
Sitting down on a cold metal bench, the bench feels cold becuase

- heat is absorbed by the bench from your body, leaving you feeling it as cold
- heat transfers from the ground to the bench
- no heat is transfered, so it feels cold
- heat is absorbed into your hand from the bench, so it feels cold

Question 6 of 10
An exothermic reaction is where heat is _____

- taken in
- degraded
- released
- absorbed

Question 7 of 10
Water condensing from a gas to a liquid (like dew forming on a cold glass of juice)

- exothermic
- like rain?
- what is water?
- endothermic

Question 8 of 10
A puddle of water evaporating into a gas in the sunlight

- I like to jump in puddles!
- whats a puddle?
- exothermic

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endothermic

Question 9 of 10

Icicles forming in the winter

- I like snow!
- dont let it fall on your head!
- exothermic
- endothermic

Question 10 of 10

In a chemical reaction, if more energy is required to make the chemical bonds than to break them apart, the reaction is endothermic, so we see a(n)

- huh?
- increase in temperature
- decrease in temperature
- no change in temperature

4 Which of the following are exothermic changes?

1. Melting ice
2. A burning candle
3. Dew forming on a lawn
4. Moth balls undergoing sublimation
5. Iron rusting
6. Water decomposing by electrolysis

5 Which of the following involves an endothermic change?

A) Clothing drying on a clothes line

B) Snow crystals forming in the atmosphere

C) A lake freezing over

D) The temperature of a solution rising when a given salt is dissolved in water

Endo/Exo Questions

6 Examples of physical and chemical changes are listed below.

1. The combustion of a candle
2. The melting of the paraffin in a candle
3. The electrolysis of water
4. The freezing of water
5. The sublimation of moth balls

In which of the situations above is more energy absorbed than released?

7 Which of the following equations represents an endothermic chemical change?

A) $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)} + \text{Energy}$

B) $H_2O_{(l)} + \text{Energy} \rightarrow H_2O_{(g)}$

C) $NaOH_{(s)} \rightarrow Na^{+}_{(aq)} + OH^{-}_{(aq)} + \text{Energy}$

D) $2NH_{3(g)} + \text{Energy} \rightarrow N_{2(g)} + 3\ H_{2(g)}$