

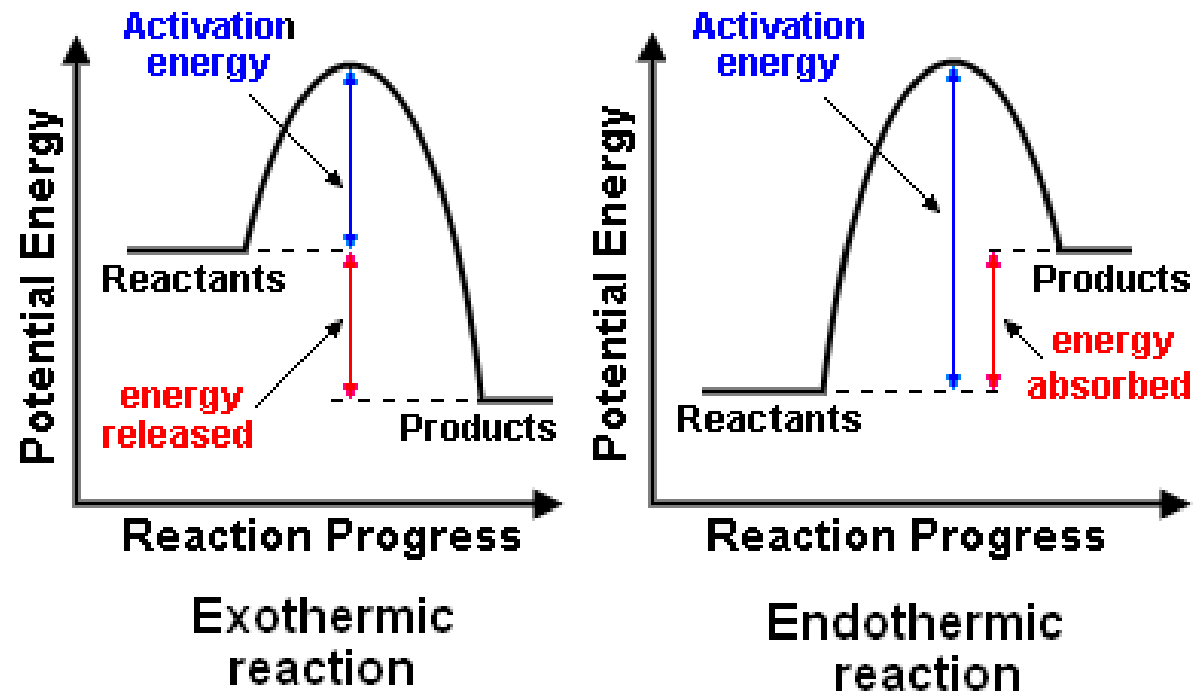
1.1)*** Define the terms Endothermic, Exothermic and the system.

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- Endothermic = takes heat energy from the surroundings ($+\Delta H$)
- Exothermic = gives heat energy out to the surroundings ($-\Delta H$)
- System = all the reactants/chemicals in an equation

1.2)*** Draw the enthalpy change profile diagrams for an Exothermic and endothermic reaction.

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1.1) *** Define Dynamic equilibrium and position equilibrium.

- Dynamic equilibrium = the rate of the forward reaction is equal to the rate of the backwards reaction
- Position equilibrium = The point in a chemical reaction at which the concentrations of reactants and products are no longer changing

1.2)***Define Le Chantelier's principal and state what 3 factors affect its equilibrium position.

- Le Chantelier's principle = 'when any change is made to the conditions of the equilibrium, the position of the equilibrium will move in the direction to counteract the change'.

The 3 factors that affect equilibrium position are:

1. Temperature
2. Pressure
3. Concentration

1.3)*** Describe what happens if the temperature increases if the forward reaction is endothermic.

1.3)*** Describe what happens if the temperature increases if the forward reaction is endothermic.

- The equilibrium will favour the forward reaction
- The equilibrium will move to the right
- This is because the forward reaction is endothermic.

1.4) *** Describe what will happen if the temperature decreases and the forward reaction is endothermic.

1.4) *** Describe what will happen if the temperature decreases and the forward reaction is endothermic.

- The equilibrium will favour the backwards reaction
- The equilibrium will move to the left
- This is because the backward reaction is exothermic

1.7)*** Describe what will happen to the position of the equilibrium if the temperature increases and the forward reaction is exothermic.

1.7)*** Describe what will happen to the position of the equilibrium if the temperature increases and the forward reaction is exothermic.

- The equilibrium will favour the backward reaction.
- The equilibrium will move to the left.
- This is because the forward reaction is exothermic and the backward reaction is endothermic.

1.8)*** Describe what will happen to the position of the equilibrium if the temperature decreases if the forward reaction is exothermic.

1.8)*** Describe what will happen to the position of the equilibrium if the temperature decreases if the forward reaction is exothermic.

- The equilibrium will favour the forward reaction.
- The equilibrium will move to the right.
- This is because the forward reaction is exothermic.

1.5) *** Describe what will happen to the equilibrium position if the pressure increases in this equation.



1.5) *** Describe what will happen to the equilibrium position if the pressure increases in this equation.



- The equilibrium favours the backward reaction
- The equilibrium will move to the left
- This is because it has fewer molecules of gas present.

1.6)*** Describe what will happen to the equilibrium position if the pressure decreases in this equation.



1.6)*** Describe what will happen to the equilibrium position if the pressure decreases in this equation.



- The equilibrium will favour the forward reaction.
- The equilibrium will move to the right.
- This is because it has more molecules of gas present.

1.7)*** Describe what will happen to the equilibrium position if the concentration of the reactants increases.

1.7)*** Describe what will happen to the equilibrium position if the concentration of the reactants increases.

- The equilibrium will favour the forward reaction.
- The equilibrium will move to the right.
- This is because the system will counteract the change.

1.8)*** Describe what will happen to the position of the equilibrium if the concentration of the products increases.

1.8)*** Describe what will happen to the position of the equilibrium if the concentration of the products increases.

- The equilibrium will favour the backwards reaction.
- The equilibrium will move to the left.
- This is because the system will counteract with the change.

1.9)***Describe the effects a catalyst will have on the equilibrium position in a reaction.

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- A catalyst will have NO EFFECT on the equilibrium except increase the rate of reaction of the forward and backward reaction.

1.10)***What 3 factors don't affect the value of K_c ?

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- Pressure
- Catalysts
- Concentration

1.11)*** What factor changes the value of K_c in a reaction?

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- K_c is only affected by temperature.

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- K_c is only affected by temperature