

\_\_\_\_\_ 1) Which equation represents a change that results in an increase in disorder?

- 1)  $I_2(s) \rightarrow I_2(g)$
- 2)  $CO_2(g) \rightarrow CO_2(s)$
- 3)  $2Na(s) + Cl_2(g) \rightarrow 2NaCl(s)$
- 4)  $2H_2(g) + O_2(g) \rightarrow 2H_2O(l)$

\_\_\_\_\_ 2) The entropy of a sample of  $CO_2$  increases as the  $CO_2$  changes from

- 1) gas to liquid
- 2) gas to solid
- 3) liquid to solid
- 4) solid to gas

\_\_\_\_\_ 3) Which 1-mole sample has the *least* entropy?

- 1)  $Br_2(s)$  at 266 K
- 2)  $Br_2(l)$  at 266 K
- 3)  $Br_2(l)$  at 332 K
- 4)  $Br_2(g)$  at 332 K

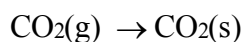
\_\_\_\_\_ 4) Which of these changes produces the greatest increase in entropy?

- 1)  $CaCO_3(s) \rightarrow CaO(s) + CO_2(g)$
- 2)  $2 Mg(s) + O_2(g) \rightarrow 2 MgO(s)$
- 3)  $H_2O(g) \rightarrow H_2O(l)$
- 4)  $CO_2(g) \rightarrow CO_2(s)$

\_\_\_\_\_ 5) Which reaction results in an increase in entropy?

- 1)  $CO_2(g) \rightarrow CO_2(s)$
- 2)  $H_2O(l) \rightarrow H_2O(s)$
- 3)  $Ca(s) + 2 H_2O(l) \rightarrow Ca(OH)_2(aq) + H_2(g)$
- 4)  $NaCl(aq) + AgNO_3(aq) \rightarrow AgCl(s) + NaNO_3(aq)$

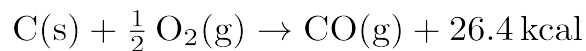
\_\_\_\_\_ 6) Given the change of phase:



As  $CO_2(g)$  changes to  $CO_2(s)$ , the entropy of the system

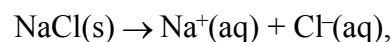
- 1) decreases
- 2) increases
- 3) remains the same

\_\_\_\_\_ 7) Which phrase best describes the reaction below?



- 1) exothermic with an increase in entropy
- 2) exothermic with a decrease in entropy
- 3) endothermic with an increase in entropy
- 4) endothermic with a decrease in entropy

\_\_\_\_\_ 8) As  $NaCl(s)$  dissolves according to the equation



the entropy of the system

- 1) decreases
- 2) increases
- 3) remains the same

\_\_\_\_\_ 9) In terms of entropy and energy, systems in nature tend to undergo changes toward

- 1) lower entropy and lower energy
- 2) lower entropy and higher energy
- 3) higher entropy and lower energy
- 4) higher entropy and higher energy

\_\_\_\_\_ 10) Systems in nature tend to undergo changes toward

- 1) lower energy and less disorder
- 2) lower energy and more disorder
- 3) higher energy and less disorder
- 4) higher energy and more disorder