

Name:

MC Practice #5

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- Which compound has both ionic and covalent bonds?
(A) CO_2 (B) CH_3OH (C) NaI (D) Na_2CO_3
 - A cylinder with a movable piston contains a sample of gas having a volume of 6.0 liters at 293 K and 1.0 atmosphere. What is the volume of the sample after the gas is heated to 303 K, while the pressure is held at 1.0 atmosphere?
(A) 9.0 L (B) 6.2 L (C) 5.8 L (D) 4.0 L
 - What is the minimum amount of heat required to completely melt 20.0 grams of ice at its melting point?
(A) 20.0 J (B) 83.6 J (C) 6,680 J (D) 45,200 J
 - As the temperature of a chemical reaction in the gas phase is increased, the rate of the reaction increases because
(A) fewer particle collisions occur
(B) more effective particle collisions occur
(C) the required activation energy increases
(D) the concentration of the reactants increases
 - The entropy of a sample of CO_2 increases as the CO_2 changes from
(A) gas to liquid (B) gas to solid
(C) liquid to solid (D) solid to gas
 - Which two factors must be equal when a chemical reaction reaches equilibrium?
(A) the concentration of the reactants and the concentration of the products
(B) the number of reactant particles and the number of product particles
(C) the rate of the forward reaction and the rate of the reverse reaction
(D) the mass of the reactants and the mass of the products
 - Which formula represents an unsaturated hydrocarbon?
(A) C_5H_{12} (B) C_6H_{14} (C) C_7H_{16} (D) C_8H_{14}
 - The reaction between an organic acid and an alcohol produces
(A) an aldehyde (B) a ketone
(C) an ether (D) an ester
 - Which balanced equation represents a redox reaction?
(A) $\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \rightarrow \text{AgCl}(\text{s}) + \text{NaNO}_3(\text{aq})$
(B) $\text{H}_2\text{CO}_3(\text{aq}) \rightarrow \text{H}_2\text{O}(\ell) + \text{CO}_2(\text{g})$
(C) $\text{NaOH}(\text{aq}) + \text{HCl}(\text{aq}) \rightarrow \text{NaCl}(\text{aq}) + \text{H}_2\text{O}(\ell)$
(D) $\text{Mg}(\text{s}) + 2\text{HCl}(\text{aq}) \rightarrow \text{MgCl}_2(\text{aq}) + \text{H}_2(\text{g})$
 - A solution with a pH of 2.0 has a hydronium ion concentration ten times greater than a solution with a pH of
(A) 1.0 (B) 0.20 (C) 3.0 (D) 20
 - Which isotope is used to treat cancer?
(A) C-14 (B) U-238 (C) Co-60 (D) Pb-206
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