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Chapter 3B Practice Test
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MULTIPLE CHOICE

## Section 3.6 Reactions with Limiting Amounts of Reactants

1. Which statement below is false when 10 g of nitrogen reacts with 5 . 0 g of hydrogen to produce ammonia?

$$
\mathrm{N}_{2}(\mathrm{~g})+3 \mathrm{H}_{2}(\mathrm{~g}) \longrightarrow 2 \mathrm{NH}_{3}(\mathrm{~g})
$$

a) 2.8 grams of hydrogen are left over.
b) Hydrogen is the excess reactant.
c) Nitrogen is the limiting reactant.
d) The theoretical yield of ammonia is 15 g .
2. How many grams of the excess reagent are left over when 6.00 g of CSa gas react with 10.0 g of Cl a gas in the following reaction: $\mathrm{CS}_{2}(\mathrm{~g})+3 \mathrm{Cl}_{2}(\mathrm{~g}) \longrightarrow \mathrm{CCl}_{4}(\mathrm{l})+\mathrm{S}_{2} \mathrm{Cl}_{2}(\mathrm{l})$
a) 2.42 g
b) 2.77 g
c) 3.58 g
d) 4.00 g

## Section 3.7 Concentrations of Reactants in Solution: Molarity

3. What is the concentration when 10.0 g of FeCl 3 is dissolved in enough water to make 275 mL of solution?
a) $2.24 \times 10-9 \mathrm{M}$
b) 0.224 M
c) 4.46 M
d) $4.46 \times 103 \mathrm{M}$

## Section 3.8 Diluting Concentrated Solutions

4. What is the concentration of the final solution when 65 mL of a 12 M HCl solution is diluted to 0. 15 L?
a) $2.8 \times 10^{-2} \mathrm{M}$
b) 5.2 M
c) 28 M
d) $5.2 \times 103 \mathrm{M}$

## Section 3.9 Solution Stoichiometry

5. How many milliliters of 0.260 M Na S are needed toreact with 25.00 mL of 0.315 M $\mathrm{AgNO}_{3}$ ?

$$
\mathrm{Na}_{2} S(a q)+2 \mathrm{AgNO}_{3}(a q) \longrightarrow 2 \mathrm{NaNO}_{3}(a q)+\mathrm{Ag}_{2} S(\mathrm{~S})
$$

a) 15.1 mL
b) 30.2 mL
c) 33.0 mL
d) 60.0 mL

## Section 3. 10 Titration

6. How many milliliters of 0.550 M hydroiodic acid are needed toreact with 25.00 mL of 0.217 M CsOH ? $\mathrm{HI}(\mathrm{aq})+\mathrm{CsOH}(\mathrm{aq}) \longrightarrow \mathrm{CsI}(\mathrm{aq})+\mathrm{H}_{2} \mathrm{O}(\mathrm{I})$
a) 0.209 mL
b) 4.77 mL
c) 9.86 mL
d) 101 mL

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1. d)
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2. a)

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3. b)

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4. b)

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5. a)

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6. C)

