

HONORS CHEMISTRY

ANSWERS TO CHAPTER 1 TEST

Part I

- | | | | |
|------|------|------|-------|
| 1. b | 4. d | 7. d | 10. a |
| 2. a | 5. a | 8. a | 11. d |
| 3. c | 6. d | 9. b | 12. a |

Part II

1. Chemical Properties:

The element chlorine is too reactive to occur naturally as a free element.

It is found in compounds such as NaCl and KCl.

It reacts with magnesium to form MgCl₂.

Physical Properties:

At room temperature, chlorine is a yellow-green gas.

Boiling point is -34°C. Melting point is -101°C.

At 0°C and 1 atm pressure, it's density is 3.21 g/L.

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|--------------------------|--------------------------|-----------------------|-----------------------|
| 2. a) 4.32×10^3 | b) 6.43×10^{-3} | c) 1.10×10^5 | d) 1.10×10^1 |
| 3. a) 5.6 | b) 12.8 | c) 0.008 | d) 0.071 |

Part III

- $68.0 \text{ cL} \times \frac{1 \text{ L}}{100 \text{ cL}} \times \frac{1.057 \text{ qt}}{1 \text{ L}} \times \frac{32.00 \text{ oz}}{1 \text{ qt}} = 23.0 \text{ ounces}$
- $901 \text{ } \mu\text{L} \times \frac{1 \text{ L}}{10^6 \text{ } \mu\text{L}} \times \frac{10^3 \text{ cm}^3}{1 \text{ L}} \times \frac{11.35 \text{ g}}{1 \text{ cm}^3} \times \frac{1 \text{ kg}}{1000 \text{ g}} \times \frac{2.20 \text{ lb}}{1 \text{ kg}} = 0.0225 \text{ lb (or, } 2.25 \times 10^{-2} \text{ lb)}$
- $\frac{380. \text{ cm}}{1 \text{ sec}} \times \frac{1 \text{ m}}{100 \text{ cm}} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{0.6214 \text{ mi}}{1 \text{ km}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 8.50 \text{ mi/hr}$
- $2.00 \text{ tsp} \times \frac{1 \text{ T}}{3 \text{ tsp}} \times \frac{1 \text{ cup}}{16 \text{ T}} \times \frac{1 \text{ qt}}{4 \text{ cups}} \times \frac{1 \text{ L}}{1.057 \text{ qt}} \times \frac{1000 \text{ mL}}{1 \text{ L}} = 9.85 \text{ mL}$