

Name Key
Ch. 4 test

60 points

Part 1 **MULTIPLE CHOICE**-Select the **BEST** answer from the choices given and record it on the sheet provided. **NOTE:** NO calculators are allowed on this portion of the test.

1) A strong electrolyte is one that _____ completely in solution.

- A) reacts B) decomposes C) disappears D) ionizes

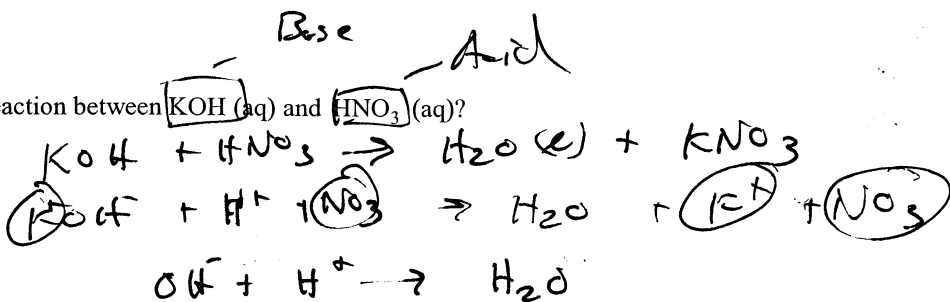
2) Which of the following are strong electrolytes?

- HCl ✓
HC₂H₃O₂
NH₃
KCl ✓

- A) HCl, KCl
B) HCl, NH₃, KCl
C) HCl, HC₂H₃O₂, NH₃, KCl
D) HCl, HC₂H₃O₂, KCl

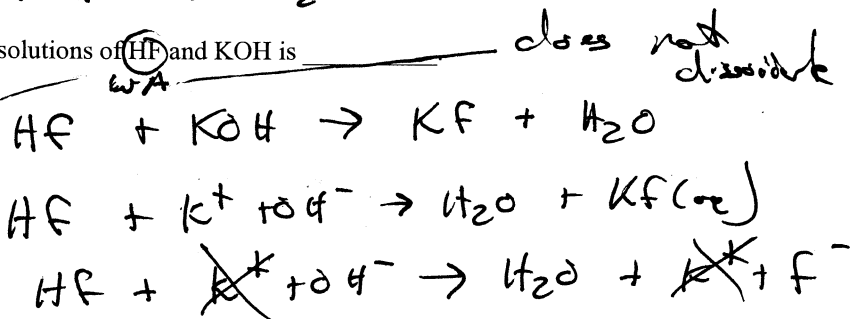
3) What are the spectator ions in the reaction between KOH(aq) and HNO₃(aq)?

- A) K⁺ and H⁺
B) H⁺ and OH⁻
C) K⁺ and NO₃⁻
D) H⁺ and NO₃⁻



4) The net ionic equation for the reaction between aqueous solutions of HF and KOH is _____

- A) HF + KOH → H₂O + K⁺ + F⁻
B) HF + OH⁻ → H₂O + F⁻
C) HF + K⁺ + OH⁻ → H₂O + KF
D) H⁺ + OH⁻ → H₂O
E) H⁺ + F⁻ + K⁺ + OH⁻ → H₂O + K⁺ + F⁻



5) Which of the following are strong acids?

- HI
HNO₃
HF
HBr

- A) HF, HBr
B) HI, HNO₃, HF, HBr
C) HI, HF, HBr
D) HNO₃, HF, HBr
E) HI, HNO₃, HBr

6) Which hydroxides are strong bases?

- Sr(OH)₂
KOH
NaOH
Ba(OH)₂

- A) KOH, Ba(OH)₂

All 4

B) KOH, NaOH

C) KOH, NaOH, Ba(OH)₂

D) Sr(OH)₂, KOH, NaOH, Ba(OH)₂

7) Which of these metals is the least easily oxidized?

- Na
- Au
- Fe
- Ca
- Ag

Lowest

- A) Na
- B) Au
- C) Fe
- D) Ca
- E) Ag

2019 - A

C or D
A
E
B
F

8) In which species does sulfur have the highest oxidation number?

A) S₈ (elemental form of sulfur) °

B) H₂S 2+

C) SO₂ 2-

D) H₂SO₃ 4+

E) K₂SO₄ +6

9) The concentration of iodide ions in a 0.193 M solution of barium iodide is _____.

A) 0.193 M

B) 0.386 M

C) 0.0965 M

D) 0.579 M

E) 0.0643 M

-193(2)

BaI₂

10) With which of the following will ammonium ion form an insoluble salt?

A) chloride

B) sulfate

C) carbonate

D) sulfate and carbonate

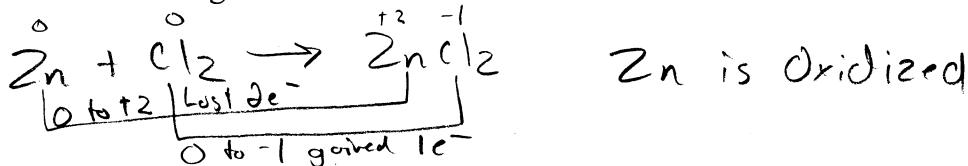
E) none of the above

NH₄⁺ always soluble

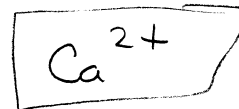
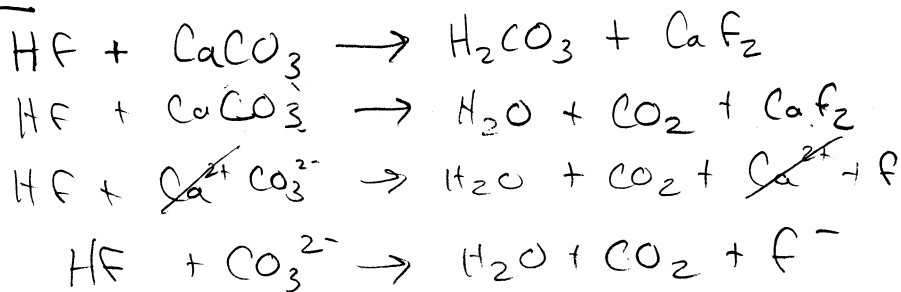
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12. Balance the reactions and answer the questions relating to the reactions. If the reactions occurs in a solutions include a net ionic reaction.

a) Zinc is reacted with chlorine gas to form zinc chloride. Which element is oxidized?



b) Hydrofluoric acid, a weak electrolyte, is added to aqueous calcium carbonate. What is/are the spectator ion/ions in the reaction?



Bonus: The new standard for arsenate in drinking water, mandated by the Safe Drinking Water Act, requires that by January, 2006 public water supplies must contain no greater than 10 ppb arsenic. Assuming that this arsenic is present as arsenate, AsO_4^{3-} , what mass of sodium arsenate would be present in a 1.00 L sample of drinking water that just meets the standard?

$$2.8 \times 10^{-5} \text{ g Na}_3\text{AsO}_4 \text{ in } 1 \text{ L H}_2\text{O}$$

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