

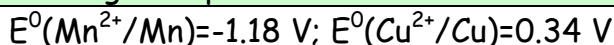
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|---------------|-----------|-----------|--------|
| LIZARDI BHI | 2009-10 | Topics: | MARKS: |
| Chemistry | 2nd. term | Acid-base | |
| 2010-March-02 | | Redox | |
| NAME: | | | |

EXERCISE #1

Study the next two cases

a) One method to obtain hydrogen gas in a lab is to treat a metal with hydrochloric acid. Determine and reason if copper and manganese metals will react with 1 M hydrochloric acid and, in the case the reaction happens, write the corresponding chemical equation.

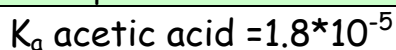
b) The previous metals and their cations are used to set up a battery. Draw the battery and its notation and identify the anode, cathode, positive and negative poles.



EXERCISE #2

The pH of an acid acetic acid solution is 3.4. Determine

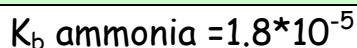
- The concentration of the acetic acid solution
- The ionization percent
- The concentration of an hydrochloric acid solution in order to have the same pH as the acetic acid previously described.



EXERCISE #3

A flask contains 100 mL 0.02 M ammonia solution. Determine:

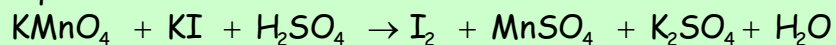
- The dissociation percent
- The number of moles of hydroxide ions
- The pH of the solution
- The volume of 25 g/L HCl solution needed to neutralize the ammonia solution



Atomic weights: Cl = 35.5; H=1

EXERCISE #4

Given the equation:



- Name the substances
- Identify the oxidation and reduction half-reactions.
- Write the balanced chemical equation (half-reaction method)
- A flask contains 2 M potassium permanganate. Determine the volume needed to obtain 2 moles of iodine.

EXERCISE #5

Magnesium can be obtained by the electrolysis of magnesium chloride (MgCl_2).

- Determine the mass of magnesium obtained during 3.5 days if the current is 6.20 A
- The time (in minutes) needed to obtain 10 g of Mg if the current is 4.5 A.

Atomic weights: Mg=24