Subject : Science

Grade : 9

Term : 2nd Term

Unit : 10 – Electrolysis

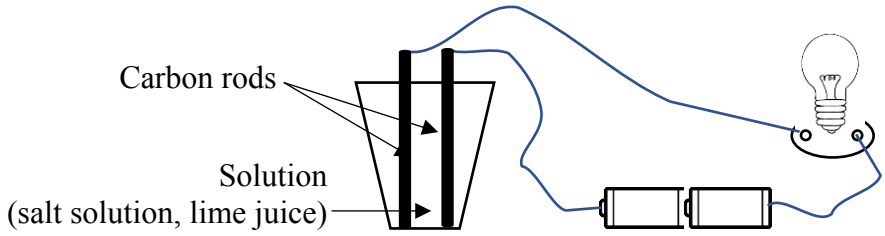
Competency level : 2.2 competency level is covered in this section

Activity 1

1). Prepare a setup as below using the given materials that can find at home. Observe whether the bulb will light up/not and record the observations in the table given below.

(2 carbon rods, connecting wires (2), bulb, 2 dry cells, a transparent glass, salt solution, lime/mandarin juice, kerosene, sugar solution)

(Put each liquid into the glass separately and observe the illumination of the bulb.)



Solution	Observations (light / not)
1. Salt solution	……
2. Lime/ mandarin juice	……
3. Kerosene	……
4. Sugar solution	……

2). State the meanings of following terms.

1. Electrolytes :……

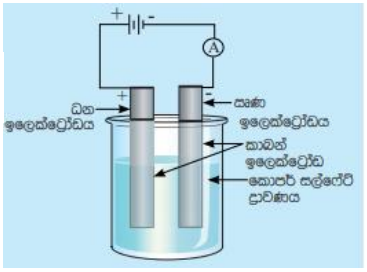
2. non-electrolytes :……

3. Electrode :…….

Activity 2

Following setups are arranged to electrolyse acidulated water and copper sulphate solution.

Setup A



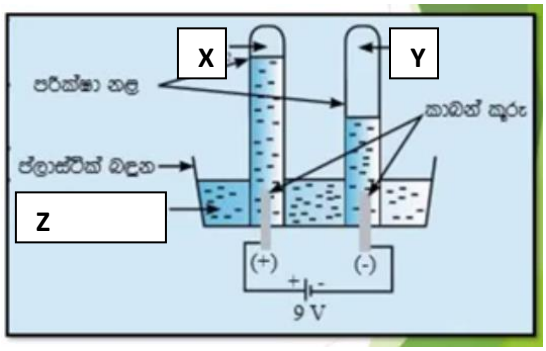
Observations: 1. ……..

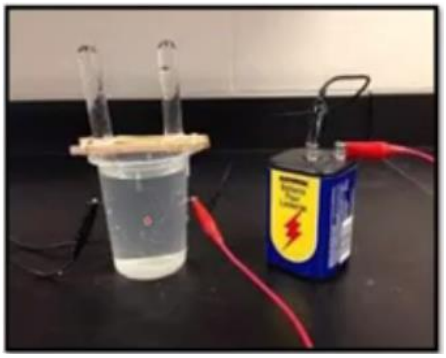
2. ……...

Write two materials that can be used at home to prepare acidulated water.

1. ……

2. ……





Setup B

1. Name X, Y and Z.

X - …….

Y - …….

Z - …….

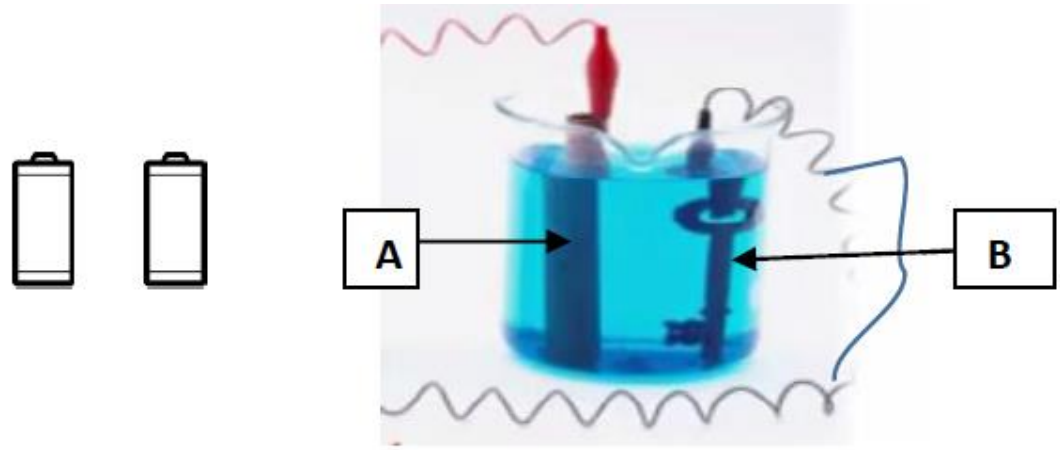
2. Write a method to identify X and Y gasses.

X - When a glowing splint is brought closer to …….. ignites

Y - When a glowing splint is brought closer to …….. ignites

Activity 3

Following is a setup designed by a student who said that an iron key could be plated with copper.



I. Write two materials that can be used as A and B at home.

A - …….

B - …….

II. What is solution "X"? ……..

III. Redraw the setup by accurately connecting the setup.

IV. Name positive and negative electrodes separately.

Positive - ……..

Negative - …….

V. Write two instances where electrolysis used in industries.

1. …….

2. …….

Summary

Electrodes

Conductors through which the electric current enters the electrolyte

Electrolytes

Solutions which conduct electricity

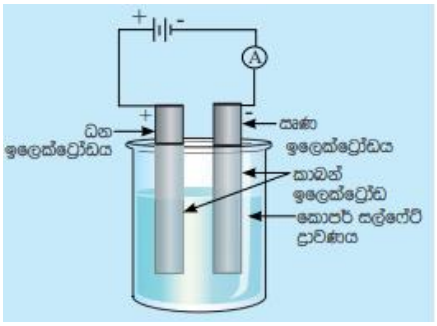
Electrolysis

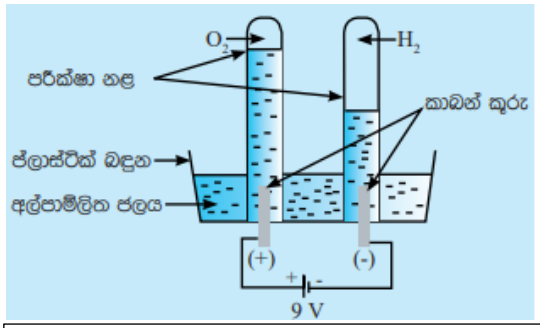
Chemical change effected by passing an electric current through an electrolyte

Applications

- Extraction of various metals
- Electroplating
- To manufacture caustic soda

Electrolysis of copper sulphate





Observations

- Decrease in blue colour in the solution
- Negative electrode becomes reddish brown
- Deflection of the indicator of the ammeter

Observations

- Oxygen gas evolved at the positive electrode (A)
- Hydrogen gas evolved at the negative electrode (B)