

**MARKING SCHEME**  
**CHEMISTRY F2, 2017**

1.
  - a) Zinc
  - b) Copper (II) oxide
  - c) Copper (II) oxide
  - d) Zinc
  
  - e) Addition of oxygen to a substance
  - f) Removal of oxygen from a substance
2.
  - It turns white anhydrous copper (II) sulphate to blue
  - It turns blue cobalt chloride paper pink
3.
  - To add calcium as a mineral in the soil
  - To neutralize the acidity in the soil (6.5)
4.
  - Glass can be heated while plastic cannot
  - Glass apparatus allows one to make observation when doing an experiment ie they are visible from the side
  -
5.
  - Mix sand and salt with water
  - Filter the sand using a sieve and get sand as a residue
  - Evaporate the filtrate to dryness to obtain crystals of salt
6.
  - a)
    - It is a weak acid
  - b)
    - F
  - c)
    - Q
7.
  - a)
    - Iodine
  - b)
    - Sublimation
  - c)
    - To condense the hot iodine vapour
  - d)

- Because iodine can sublime while sodium chloride cannot
  -
- e)
- Tripod stand

- a)
  - Sodium chloride
- b)
  - Carbon (IV) oxide
- c)
  - Sodium carbonate + hydrochloric acid  $\longrightarrow$  sodium chloride + carbon (iv) oxide + water

9.

- a) – **Flame I**,
  - Non-luminous flame; used less time to boil;
  - **Flame II**,
  - Luminous flame; used more time to boil;
- b)
  - The beaker in flame II was black at the bottom; because of soot produced by the flame when the air hole is closed carbon burns in limited supply of oxygen

10.

- Distilled water boiled first; this because sea water has dissolved salts that act as impurities hence raising the boiling point;
- 

11.

- a)
  - i. Water vapour
  - ii. Liquid air
  - iii. Oxygen
- b)
  - Concentrated sodium hydroxide
  - Concentrated potassium hydroxide
- c)
  - Silica gel
- d)
  - i. Purification
  - ii. Fractional distillation
- e)
  - Separation of the contents of crude oil
- f)
  - They have different but close boiling points

12.

- a) c)
- b) d)

(II) sulphate turned blue

- To absorb the water vapour produced in the combustion tube;
- Reducing property;

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- In Mombasa county the environment is salty compared to Kisumu county; the salty environment speeds up the rate of rusting; in Kisumu the rusting process is not speeded by salty environment hence it is slow;

14.

- The bee sting injects acid to the affected part; ammonia is a base which neutralize the acidity which relieves off the pain;

15.

- Cut the tradescantia leaves and place them in a mortar;
- Using a pestle crush the leaves to produce the juice;
- Add propanone as you continue crushing;
- Decant the extract in a beaker;

16.

a)

- Calcium + water  $\longrightarrow$  calcium hydroxide + hydrogen gas

b)

- The burning splint burns with a pop sound

c)

- Hydrogen gas is produced which burns with a pop sound in air

d)

- The solution turned pink; solution formed ie calcium hydroxide is an alkaline;

e)

- 11, 12, 13, 14; the solution is an alkaline;

17.

a)

downward displacement of air;

B – Downward delivery/ upward displacement of air;

A- Upward delivery/

b)

dense than air/ they are lighter than air;

B – They are denser than air;

A- They are less

18.

air = 200 cm<sup>3</sup>

Final volume of air = 160 cm<sup>3</sup>

Volume of air used= 40 cm<sup>3</sup>;

Initial volume of

a)

19.

P ; Initial volume  
e =  $\frac{40}{200} \times 100 = 20\%$   
r = 200  
c = 20%;  
e  
- n Carbon (IV) oxide;  
- t Nitrogen;  
a  
- g Hydrochloric acid;  
- e Nitric acid;  
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20. - Sulphuric acid;
- a) - Galvanization;
- b) - Zinc is more reactive  
than iron and hence reacts with oxygen;