**ANESTAR SCHOOLS EXAMINATIONS**

**END OF TERM TWO - 2020**

**FORM ONE CHEMISTRY**

**NAME: ………………………………………………ADM NO: …….…..CLASS: …………**

1. The diagram **below** shows the apparatus commonly used in a laboratory.

Chimney

Collar

Air hole

 (i) Name the apparatus. (1 mark)

 II. State the function of the parts labeled in the **above** apparatus.

(a) Chimney. (1 mark)

 (b) Collar. (1 mark)

 (c) Air hole.

 (1 mark)

1. Two equal volumes of water were put in a 100cm³ glass beakers and heated for 10 minutes

using the apparatus drawn above. The beakers were labeled **A** and **B**. Beaker **B** registered

a higher temperature than **A**.

(a) Name the flames used to heat water in beaker.

 **A** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1/2 mark)

 **B** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1/2 mark)

1. (i) State the condition under which the flame used to heat beaker **B** was obtained. (1 mark)

(ii) State **two** differences between the flames used to heat beaker **A** and **B**. (2 marks)

2. (a) What is a drug? (1 mark)

 (b) Name **two** commonly legal abused drugs. (1 marks)

3. Describe briefly how a mixture of sand and sodium chloride can be separated. (2 marks)

4. (a) State three differences between temporary and permanent changes. (2 marks)

 (b).Classify each of the following change as either temporary or permanent. (2 marks)

* 1. Striking a match to burn. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Diluting ethanol with water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Burning a piece of paper. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Zinc oxide  Zinc oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (White) (Yellow)

5. (i) Define the terms.

 (a) Element. (1 mark)

 (b) Compound. (1 mark)

 (ii) State **two** differences between a compound and a mixture. (2 marks)

(iii) In the table **below** classify the following substances by ticking (🗸) the correct identity. (4 marks)

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Element | Compound | Molecule |
| Zinc |  |  |  |
| Hydrogen gas |  |  |  |
| Zinc oxide |  |  |  |
| Water |  |  |  |

* 1. Identify the elements present in the following compounds.

 (a) Lead oxide. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1 mark)

 (b) Magnesium nitrate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1½ marks)

 (c) Calcium sulphate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1½ marks)

(v) Write down the chemical symbol of the following elements. (2 marks)

|  |  |
| --- | --- |
| Element | Chemical symbol |
| Sodium |  |
| Hydrogen  |  |
| Chlorine |  |
| Zinc |  |

1. Study the table below which shows the PH values of solutions **A**, **B**, **C**, **D** and **E**.

Use it to answer the questions that follow.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Solution | A | B | C | D | E |
| PH | 13.0 | 7.0 | 9.0 | 6.5 | 2.0 |

 (i) Which solution is the most acidic? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1/2 mark)

 (ii) Which solution is a neutral? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1/2 mark)

1. Identify the solution that is most likely to be:
	1. Rain water
	2. Antacids tablet
	3. Sodium hydroxide (11/2 marks)

7. (a) (i) What is an acid-base indicator? (1 mark)

 (ii) Fill in the table below to show the colours of the following indicators. (3 marks)

|  |  |  |
| --- | --- | --- |
| Indicator | Colour in acid | Colour in alkali |
| Litmus |  |  |
| Phenolphthalein |  |  |
| Methyl orange |  |  |

1. Consider the following general reaction.

Acid + Base → Salt + Water

(i) Name the type of reactions shown above. (1 mark)

1. Name **one** example of each of the following. (1 marks)

Acid:

Base:

8. The diagram **below** shows a chromatogram of pure dyes **W**, **X** and **Y**. It also contains that of an impure substance **K**.

• •

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**\* \* \* \***

W X Y K

B

A

1. Name lines **A** and **B**. (1 mark)

(b) Identify which pure dyes substance **K** contain. (1 mark)

 (c) (i)Which **two** properties of the component of the mixture facilitate separation? (2 marks)

(ii) Normally line A is drawn using a pencil and not ink. Explain why the pencil is preferred to ink.(2 marks)

 (1 mark)

 (e) State **one** application of chromatography. (1 mark)

9. Give **two** reasons why laboratory apparatus are made of glass. (2 marks)

10. State **three** observations made when sodium reacts with water in trough. (3 marks)

11. (a) State the conditions necessary for rusting to take place. (2 marks)

 (b) Apart from oiling, painting and greasing state two other methods of preventing rusting.(2 marks)

12. The follow set-up was used by some students to study some properties of air.

Gas jar

Burning candle

Sodium hydroxide solution

 (a) State **two** observations made after a few minutes. (2 marks)

 (b) Name the gas that occupies the largest volume after the experiment. (1 mark)

 (c) The percentage of air used was calculated to be 19.375% while the approximate percentage of oxygen is 21%. State **one** source of error. (1 mark)

 (d) Why is sodium hydroxide solution preferred to water in this experiment? (1 mark)

 (e) Why is it advisable to allow the apparatus to cool before the final volume is taken? (1 mark)

13. Study the flow diagram **below** which represents a summary of separation of liquid air.

 

Gas P Gas S Gas Z

-183º -186ºC -196ºC

Process X

1. (i) Identify the gases.

**P-**

**S** -

**Z** (3 marks)

(ii) Name process **X** (1 mark)

(iii) What is the role of sodium hydroxide solution in the above flow diagram? (1 mark)

1. Name:

(i) A compound that is normally present in air. (1 mark)

 (ii) An element that is normally present in air. (1 mark)