**NAME………………………………………………………ADM………………….CLASS………………….**

**CHEMISTRY**

**FORM 1, MID – TERM EXAM – 2022**

**Time 2 Hours 15 Minutes**

***Answer ALL Questions in the spaces provided***

1. Give three reasons why laboratory apparatus are made of glass. (3mks)
2. A wooden splint was slipped through a region of a particulars flame in the laboratory and was shown in the diagram below.

 Unburnt part

 Burnt part

1. Name the type of flame the splint was slipped through. (1mk)
2. Explain why the splint was burnt the way it is shown in the diagram. (2mks)
3. .
4. Define the following terms;
5. Drug (1mk)
6. Drug abuse (1mk)
7. Mention any two side effects of drug abuse. (2mks)
8. State any four differences between luminous and non – luminous flames. (4mks)
9. State one use of each of the following apparatus in the laboratory
10. Dessicator (1mk)
11. Crucible (1mk)
12. State the correct method of separating the following mixtures. (4mks)
13. A mixture of iron fillings and sulphur
14. Sugar and iodine
15. Sand and water mixture
16. Kerosene and water.
17. .
18. State the role of the following parts during fractional distillation of a mixture of water and ethanol.
19. Fractional column. (1mks)
20. Glass beads. (1mk)
21. What property of the mixture makes it possible to be separated by fractional distillation? (1mk)
22. State any two application of fractional distillation. (2mks)
23. In an experiment to separate a mixture of two liquids A and B a student set up the apparatus as shown below.



1. Name the apparatus. (1mk)
2. Which liquid is denser? (1mk)
3. Which other methods can be used to separate the two liquids. (1mk)
4. State three differences between temporary and permanent change. (3mks)
5. .
6. What is an acid – base indicator? (1mk)
7. Fill in the table below to show the colour of the following indicators. (3mks)

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

1. Unknown substance had Ph values as shown in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Substance | A | B | C | D |
| Ph value | 6.0 | 2.0 | 12.0 | 7.0 |

State which substance was likely to be; (3mks)

1. Lemon juice
2. Sodium chloride solution
3. Potassium hydroxide solution
4. State three uses of acids. (3mks)
5. Complete the word equation below. (4mks)
6. Sodium hydroxide + Dilute hydrochloric acids

1. Calcium carbonate + Dilute sulphuric acid
2. Magnesium oxide + Dilute nitric (v) acid
3. Zinc + dilute hydrochloric acid
4. .
5. Give the chemical name for the rust. (1mk)
6. Apart from oiling and greasing, state two methods that can be used to prevent rusting. (2mks)
7. State two conditions that accelerate rusting. (2mks)
8. The diagram below is set – up for the laboratory preparation of oxygen



1. Name solid R (1mk)
2. Name the apparatus X. (1mk)
3. Write an equation for the reaction that takes place in the flask. (2mks)
4. Give a test for oxygen gas. (1mk)
5. State two uses of oxygen gas. (2mks)
6. Name the product formed when kerosene is burned in air. (2mks)
7. State two chemical tests for the presence of water. (2mks)
8. State three observations made when a small piece of potassium is placed in water. (3mks)
9. Explain why the following reagents are not used in the laboratory preparation of hydrogen gas. (2mks)
10. Nitric acid
11. Potassium
12. Metal X reacts with cold water slowly while Y does not react with neither cold nor hot water. Metal Z react with both cold water and hot water vigorously and explosively respectively. Arrange those metals in order of increasing reactivity. (2mks)
13. The set – up below is used to investigate the properties of hydrogen gas.



1. On the diagram, indicate what should be done for the reaction to occur. (1mks)
2. Write an equation for the reaction that occurs in the combustion tube. (1mk)
3. Hydrogen gas is allowed to pass through the tube for sometime before it is lit. Explain. (1mk)
4. What property of hydrogen gas is being investigated? (1mk)
5. State and explain the observations made in the combustion tube. (3mks)
6. State two uses of hydrogen gas. (2mks)
7. In an experiment to investigate the percentage of oxygen in air, 200cm3 of air was passed over heated copper turnings repeatedly until a constant volume of air remained. 160cm3of air remained at the end of the experiment.
8. Name the gases remaining in the 160cm3 of air. (2mks)
9. Determine the percentage of air used during the experiment. (2mks)
10. State one possible source of error in the experiment. (1mk)
11. Write a word equation for the reaction. (1mk)
12. Explain how you would obtain sand from a mixture of sand and common salt. (3mks)
13. State two apparatus used to measure accurate volume. (2mks)
14. Give two reasons why solid carbon (iv) oxide is preferred over ordinary ice for use by ice cream vendors. (2mks)
15. The diagram below shows a chromatogram of pure dyes A,B and C. it also contains that of an impure substance K.



1. Name lines A and B. (2mks)
2. Identify which pure dyes does substance K contains. (2mks)
3. .
4. Which two property of the component of the mixture facilitate separation? (2mks)
5. Normally line A is drawn using a pencil and not ink. Explain why the pencil is preferred to ink. (2mks)
6. State two applications of chromatography. (2mks)