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

**FORM ONE CHEMISTRY**

**MID-TERM EXAM**

**NOVEMBER 2021**

**TIME: 40 MINS**

**INSTRUCTIONS**

Answer all questions in the spaces provided.

1. a) What are acid – base indicators.

***A substance that gives a specific color in an acid and another specific color in a base.√***

b) Solutions are classified as strongly basic, weakly basic, neutral, weakly acidic or strongly acidic. The information below gives solutions and their pH values. Study it and answer the questions that follow.

|  |  |  |
| --- | --- | --- |
| Solution | pH values | Classifications |
| U  V  W  X | 14  6  9  2 | ***Sodium hydroxide√***  ***Rain water√***  ***Wood ash extract√***  ***Dilute Nitric(v) acid√*** |

Which of the solution could be;

i) Dilute nitric (v) acid. (1mk)

ii) Wood ash extract. (1mk)

iii) Sodium Hydroxide. (1mk)

iv) Rain water in an industrial polluted region. (1mk)

v) What is the name given when solution U react with solution X. (1mk)

***Neutralization.***

c) Sate three examples of acid-base indicators and state the colours they show in acid and basic solutions.

|  |  |  |
| --- | --- | --- |
| Indicator | Color of indicator in | |
| Acid | Base |
| ***i) Methyl orange √***  ***ii) Litmus solution√***  ***iii) Phenolphthalein √*** | ***Pink/red √***  ***Red√***  ***colourless√*** | ***Yellow√***  ***Blue√***  ***Pink √*** |

d) State the advantage of universal indicator over other acid-base indicator.

**It gives strength of acid or base. √** ( ½ mk)

2. a) State the effects of adding impurity to the melting and boiling points of water.

***m.p lowered √***

***b.p raised√***

b) State one application of adding impurities on substances. (1mk)

***Extraction of metals from their ores.***

***Melting of ice on roads during winter.***

c) Write the chemicals symbols of the following elements and their Latin names. (5mks)

|  |  |  |
| --- | --- | --- |
| Element | Latin name | Symbol |
| i) Potassium  ii) Silver  iii) Iron  iv) Copper  v) Mercury | ***Kalium√***  ***Argentums√***  ***Ferrum √***  ***Cugrum√***  ***Hydragylum √*** | ***K√***  ***Ag√***  ***Fe√***  ***Cu√***  ***Hg√*** |

3. a) Copper (II) oxide was contaminated with iodine crystals. Describe how iodine can be obtained from the mixture.. (2mks)

***Heat the mixture iodine sublimes and settles on cover parts√ scoop it with spatula.√***

b) Below is a heating curve for ice until it formed steam. Use it to answer the questions.

Temp (0C) 1000c

00c

On the same axis, plot the curve that would be obtained if ice was contaminated with Sodium Chloride. (1mk)

4. a) State 4 differences between luminous and non-luminous flame. (4mks)

|  |  |
| --- | --- |
| Luminous | Non-luminous |
| ***i) Sooty flame√***  ***ii) Wavy flame√***  ***iii) Bright yellow flame √***  ***iv) Has 4 religions burns quietly √*** | ***Non sooty flame √***  ***Steady flame √***  ***Blue less bright flame √***  ***Have 3 regions burns with rolling sound.*** |

b) List two laboratory rules. (2mks)

***- Never taste anything in lab.***

***- Do not smell gas directly.***

***N/B any correct rule.√***

c) Chromatograph below represents the results of an experiment done with certain plant pigments. Study it and answer a question that follows.

Solvent front

P X Y Z X

i) Name the part labeled X. (1mk)

***Baseline // origin√***

ii) Which two pigments is the component of P. (1mk)

***Y and Z√***

iii) Which of the pigments x, y and z is the least soluble? (1mk)

**x√**