**THE UNITED REPUBLIC OF TANZANIA**

**PRESIDENT’S OFFICE REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT**

**LINDI REGIONAL MOCK EXAMINATION**

**FORM FOUR MOCK EXAMINATIONS – 2019**

**CHEMISTRY 1**

**Time:2:30hrs**

**Instructions;**

* *This paper consists of sections A,B and C*
* *Answer all question in this paper.*
* *The following constants may be used*
* *Atomic masses: H=1, C=12, N=14, Na=23, pb =207, O=16, AL= 26,Mn=55, Fe=56, K=39.*

*Avogadro’s number = 6.02x1023.*

*GMV at s.t.p= 22.4 dm3*

*1 Faradays = 96,500 coulombs.*

**SECTION A: (20 Marks):**

1. For each of the items(i). to (x) choose the correct answer from the given alternative and write its letter beside the item number.
2. Hard water which is softened just by boiling contains dissolved.
3. Magnesium Sulphate
4. Sodium carbonate
5. Calcium carbonate
6. Calcium hydrogen carbonate
7. The discharge of cautions during electrolysis is;
8. Oxidation
9. Reduction
10. Both oxidation and reduction
11. Neither oxidation nor reduction.
12. A wet blue litmus paper was dipped in a gas jar containing hydrogen chloride gas. The paper……………….
13. Turned orange
14. Turned blue
15. Turned red
16. Was bleached
17. The gas produced when very dilute nitric acid reacts with Magnesium metal is …………………….
18. Oxygen
19. Nitrogen dioxide
20. Nitrogen
21. Hydrogen
22. Which of the following is not an organic compound?
23. CO
24. CH4
25. C3H8O3
26. CH3COOH
27. Diamond and graphite differ because;
28. The atoms in diamond are large than those in graphite
29. Carbon atoms are differently arranged
30. Graphite is an impure carbon
31. Carbon has a different vacancy in the two form.
32. Sulphur is manufactured by;
33. Contact process
34. Hess process
35. Haber’s process
36. Frasch process.
37. An example of a homologous series is;
38. Ethane, propane and butyene
39. Propane, butane, and pentyne
40. Methane, ethane and propane
41. Ethane ,ethyne and propyne.
42. What will be the molarity of solution which contains 26.5g of anhydrous sodium carbonate in 5dm3 of solution?.
43. 0.05M
44. 0.50M
45. 0.25M
46. 0.025M
47. A solvent can be obtained from a solution by
48. Evaporation followed by decantation
49. Evaporation and condensation
50. Filtration and condensation
51. Crystallization followed by sublimation.
52. Match the correct items in LIST A with the responses in LIST B by writing the letter of the correct response beside the item number.

|  |  |
| --- | --- |
| LIST A | LIST B |
| 1. Class C fire 2. Immiscible liquid 3. Allotropy 4. Methane 5. Macronutrients 6. Empirical formula 7. PH greater than 7 8. Used to remove colouring matter in brown sugar 9. Isomerism 10. Isotopes | 1. X and Y 2. Bleaches moist litmus paper 3. Two or more compounds having the same molecular formula but different structural formula. 4. Existence of element in more than one form without changing its state. 5. Fire caused by flammable gases 6. Fires caused by flammable liquid 7. Elements in the soil needed by plants in large amount. 8. Animal charcoal 9. Substance which decays easily 10. Simplest formula that expressed its composition by mass 11. Kerosene and water 12. Deliquescent substance 13. The concentration of hydrogen ions in the soil 14. A gas present in natural gas. |

**SECTION B: (54Marks).**

Answer all questions in this section.

1. (a). Define the following term
2. Compounds
3. Elements
4. Mixture
5. Solution

(b). Give two examples in each of the following

1. Gaseous solution
2. Solid solution
3. (a). Give and explain the uses of sulphur in the following areas,
4. Agriculture
5. Treatment of disease

(b). Give four (4) uses of chlorine gas.

1. (a) (i). Define isomerism.

(ii). Write down the molecular structure and IUPAC names of the isomers whose molecular formula is C4H10

(b). Name the homologous series of organic compounds which are represented by the molecular formula .

(i). CnH2n

(ii). CnH(2n-2)

(iii). CnH(2n+2).

1. (a). Define the term ‘ class B fire’.

(b). (i). List three combustible materials in class B fire.

(ii).Why is water not used to put off oil fires?

1. (a). Explain the meaning of
2. A chemical the equation
3. An ionic equation.

(b). Complete and balance the following chemical equation,

1. CH=CH+O2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. CaO +H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. CH2=CH2 + Cl2\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. KCLO3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. (a). Explain three (3) ways by which water can be purified in the home.

(b). Give five (5) reasons why water is important in our daily lives and in industry.

(c). Name a substance which when dissolved in water causes;

1. Temporary hardness of water
2. Permanent hardness of water
3. (a) Define
4. Molecular formula
5. Empirical formula

(b). A compound contains 40% sodium, 12% of carbon and 48% oxygen by mass. If its molar mass is 106. Find its molecular formula.

1. (a). What is the relative atomic mass of PbCO3?.

(b). How many grams of carbon are there in 0.1 moles of the substance?

(c). What are the factors affecting the selective discharge of irons at the electrodes during electrolysis?.

1. (a). Why is Zinc a better choice than sodium and potassium as a metal for reacting with an acid to give hydrogen?.

(b). Explain four (4) uses of hydrogen.

SECTION C (26marks)

Answer all questions in this sections

1. Consider the following equations

A (g)+B(g) D(g) H = -XKJ

Use le chatelier’s principle to describe how the rate of production of D can be altered

1. Describe five (5) causes and effects of soil pollution .