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545/1
CHEMISTRY
Paper 1
MID TERM 1 S.2
2019

DEPARMENT OF CHEMISTRY
Uganda Certificate of Education
CHEMISTRY
Paper 1
1 HOUR

Instructions

Answer all questions

Circle the right alternative in SECTION A

Write in the spaces provided for SECTION B

Write on provided answer sheets

SECTION A

- Which one of the following is the method that can be used to separate a mixture of sodium chloride and ammonium chloride?
A. Distillation
B. Magnetization
C. Sublimation
D. Filtration
- Magnesium reduces the oxide of a metal Y, and Y displaces copper from its salts. The order of reactivity of the metals is
A. Cu, Y, Mg
B. Mg, Cu, Y
C. Mg, Y, Cu
D. Y, Mg, Cu
- A separating funnel is used in the laboratory to separate;
A. Sand from oil
B. Oil from water
C. Sulphur from iron
D. Petrol from diesel
- Which of the following is true about water?
A. It is a compound of hydrogen and oxygen

- B. It is a liquid at all temperatures
- C. It is a mixture of hydrogen and oxygen
- D. It is a gas at room temperature

5. The nuclear composition of four atoms **W**, **X**, **Y** and **Z** are shown in the table below;

Atom	W	X	Y	Z
Number of protons + Neutrons	12	23	14	24
Number of neutrons	6	11	6	12

Which of these atoms are isotopes?

- A. W and Y
- B. W and Z
- C. X and Z
- D. Z and Y



6. Which one of the following alloys would be most suitable for making a pair of scissors?

- A: Brass B: Duralumin C: soft solder D: stainless steel

7. The symbol $^{27}_{13}\text{Al}$ represents the commonest isotope of aluminium. The number of electrons in one ion of this isotope is

- A: 10 B: 13 C: 27 D: 14

8. A mixture of barium sulphate and copper (II) sulphate in water can be separated by

- A: filtration B: fractional distillation
C: fractional crystallisation D: solvent extraction

9. The number of protons, neutrons, and electrons in an atom Z represented by $^{27}_{13}\text{Z}$ respectively is

- A. 13 14 13 B. 13 13 14
C. 14 13 13 D. 13 13 13

10. What is the valency of X in $\text{X}(\text{NO}_3)_2$.

- A. 2 B. 1 C. 4 D. 3

11. Which of the following gases relights a glowing splint?

- A. Carbondioxide B. oxygen C. hydrogen. D. nitrogen

12. The rate of decomposition of hydrogen peroxide to form oxygen and water can be increased by the addition of;

- A. Copper(II) sulphate
- B. Manganese (IV) oxide
- C. Vanadium(V) oxide
- D. Finely divided iron

13. Which of the following is observed when magnesium burns in air?

- A. A bright flame B. a white powder

C.molten beads

D. brown specks

14. Water exists in three states namely

A. ice B. liquid C. vapour D. ocean

15. Oxygen is a

A. brown gas B. purple liquid C. colourless gas D. yellow gas

16. Oxygen's percentage in air is

A. 79% B. 21% C. 0.003% D. 1%

17. Which of the substances below does not sublime when heated

A. iodine B. iron (II) chloride C. iron(III) chloride D. ammonium chloride

18. Which of the following undergoes a chemical change when heated in air?

A. ice B. Wax C. anhydrous aluminium chloride D. sulphur

19. The chemical symbol of chlorine is

A. CL B. Cl C. cl D. cL

20. An oxide of metal Q can be reduced by the metal K but not by metal Z. the order of the reactivity of these metals is

A. K,Z,Q B.K,Z,Q C.Q,K,Z D.K,Q,Z

SECTION B

21. (a) Brass is an alloy of copper and zinc

Define the term alloy. (1 mark)

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(b) State

(i) two physical properties in which brass differs from copper. (1 mark)

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(ii) one use of brass. ($\frac{1}{2}$ mark)

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(c) Give a reason why brass is not considered a compound of copper (1 mark)

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(d) (i) Name one other alloy of copper that is used in making aircrafts. ($\frac{1}{2}$ mark)

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(ii) Give one reason why the alloy you have named in (d) (i) is suitable in making air crafts. (1 mark)
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1. 22. The atomic numbers of elements **Q**, **R** and **T** are 2, 6 and 17 respectively;

(a) State;

(i) The group in the periodic table to which **Q** belongs. ($\frac{1}{2}$ mark)

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(ii) The period in the periodic table to which **T** belongs. ($\frac{1}{2}$ mark)
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(b) **Q** is generally unreactive. Give a reason. (01 mark)
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(c) State one general property of elements in the group to which **T** belongs in the periodic table. ($\frac{1}{2}$ mark)
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(d) When **R** combines with **T**, the compound formed is a liquid at room temperature and is insoluble in water;

(i) Write the formula of the compound. (01 mark)
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(ii) Suggest one reason why the compound is not soluble in water. (01 mark)
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23. a) Kasawuli forgot his new slasher out of his store for a week but when he saw it, it had developed a brown coating. What is the chemical name of the brown substance?

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b) Give the two conditions that enabled the formation of the brown coating.

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c) Give two ways of preventing rusting in iron.

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24. a) What is a catalyst?

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b) What is the catalyst used when heating potassium chlorate to produce oxygen?

..... (1/2 marks)

c) What is the function of that catalyst?

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d) Write the equation for the formation of oxygen from potassium chlorate.

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25. Name five types of oxides with one example. (05 marks)

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26. a) Define the following

i) solution

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ii) saturated solution

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iii) super saturated solution

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b) Give two examples of solutions, showing the solvent and solute respectively)

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27. a) What is a mixture?

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b) Give four tabulated differences between a mixture and a compound.

mixture	compound

27. Using a well labeled drawing and an equation, describe how hydrogen is prepared in the laboratory.

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28. a) Give three properties of liquid water.

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b) Name the reagent used to test pure water.

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c) What is observed when the reagent is used to test pure water?

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