

WASSCE / WAEC MAY / JUNE 2006 CHEMISTRY TEST OF PRACTICAL
ALTERNATIVE A

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S5051/A June
W.A.S.S.C.E. 2006
CHEMISTRY 1
Practical
ALTERNATIVE A
2 hours

A

Name:.....

239

Index Number:.....

THE WEST AFRICAN EXAMINATIONS COUNCIL

West African Senior School Certificate Examination

CHEMISTRY 1

PRACTICAL

June 2006

ALTERNATIVE A

2 hours

[50 marks]

Write your **name** and **index number** in the spaces provided at the top right-hand corner of this paper.

On the front page of your answer book record your **index number**, your **serial number** and the **number** and **letter** of every substance supplied to you. These substances should all bear your **serial number**; if this is not so, inform the Supervisor immediately.

Answer **all** the questions in ink.

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1. Burette readings (initial and final) must be given to two decimal places. Volume of pipette used **must** also be recorded but no account of experimental procedure is required. All calculations **must** be done in your answer book.

A is a solution containing 6.3 g dm^{-3} of HNO_3 , 20.97 42°

B is a solution of Na_2CO_3 . 21.00 - 0

- (a) Put A into the burette and titrate it against 20.0 cm^3 or 25.0 cm^3 portions of B using methyl orange as indicator. Record the volume of your pipette. Repeat the titration to obtain consistent titres. Tabulate your burette readings and calculate the average volume of A used. 20.90

The equation for the reaction involved in the titration is:



- (b) From your results and information provided above, calculate the
- (i) concentration of B in mol dm^{-3} ; 21.20
 - (ii) concentration of B in g dm^{-3} ; 0.01
 - (iii) mass of sodium ions in 1.0 dm^{-3} of B.

[H = 1; C = 12; O = 16 N = 14 Na = 23]

[21 marks]

2. Credit will be given for strict adherence to the instructions, for observations precisely recorded and for accurate inferences. All tests, observations and inferences **must** be clearly entered in your answer book, in ink, at the time they are made.

C is a mixture of an inorganic and organic compounds. Carry out the following exercises on C. Record your observations and identify any gases evolved. State the conclusion you draw from the result of each test.

- (a) Put all of C into a beaker and add 10 cm^3 of distilled water. Stir the mixture thoroughly and filter. Keep both the filtrate and residue.

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21.10

3

(b) (i) Test the filtrate with litmus paper.
(ii) To about 2 cm^3 of the filtrate, add $\text{BaCl}_{2(aq)}$ followed by dilute HCl .
(iii) To another 2 cm^3 portion of the filtrate add $\text{NaOH}_{(aq)}$ and heat.

0.05

(c) Transfer the residue into a boiling tube and add few drops of iodine solution. [16 marks]

10

30

3 (a) Consider the following compounds:
 MnO_2 , NaHCO_3 , Na_2CO_3 , NH_4Cl and $\text{Pb}(\text{NO}_3)_2$
Select the compound(s) which

(i) has a black colour;
(ii) is a basic oxide;
(iii) sublime on heating;
(iv) dissolves in water to give a solution of pH less than 7. [4 marks]

(b) State the colour of each of the following aqueous solutions:

(i) Calcium hydroxide;
(ii) Iron (III) trioxonitrate (V); *blue*
(iii) Copper (II) tetraoxosulphate (VI); *blue*
(iv) Potassium heptaoxodichromate (VI). [4 marks]

(c) Give one example of a neutral oxide which is a colourless liquid at room temperature. *H_2O* [1 mark]

6.3gA

(d) Draw and label a diagram for a set-up that can be used for the separation of two immiscible liquids. [4 marks]

114

M C V 6

105 C 11

Na+