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

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A is a solution containing 6.3 g dur-

Index Number:

THE WEST AFRICAN EXAMINATIONS COUNCIL

West African Senior School Certificate Examination

CHEMISTRY 1 Theory 1 and 1 and 1

PRACTICAL

June 2006

ALTERNATIVE A [50 marks]

2 hours

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.

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Stip the mixture therefore it and litter Keep both the filtran

State the concession and the from the result of each rest

Answer all the questions in ink.

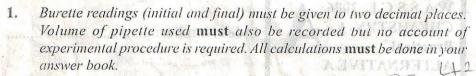
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A is a solution containing $6.3 g \, dm^{-3}$ of HNO₃,

B is a solution of Na₂CO₃.

Put A into the burette and titrate it against 20.0 cm³ or 25.0 cm³ 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.

The equation for the reaction involved in the titration is:

$$2HNO_{3(aq)} + Na_2CO_{3(aq)} \longrightarrow 2NaNO_{3(aq)} + CO_{2(g)} + H_2O_{(l)}$$

- From your results and information provided above, calculate the
 - (i) concentration of B in mol dm^{-3} ;
 - (ii) concentration of B in $g dm^{-3}$; while some O = O = O
 - (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.

Put all of C into a beaker and add 10 cm³ of distilled water. Stir the mixture thoroughly and filter. Keep both the filtrate and residue.

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(b)	 (i) Test the filtrate with litmus paper. (ii) To about 2 cm³ of the filtrate, add BaCl_{2(aq)} followed by dilute HCl. (iii) To another 2 cm³ portion of the filtrate add NaOH_(aq) and heat. 	
, (c)	Transfer the residue into a boiling tube and add few drops of iodine solution.	16 marks]
= 30 3. (a)	Consider the following compounds: MnO ₂ , NaHCO ₃ , Na ₂ CO ₃ , NH ₄ Cl and Pb(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 so (i) Calcium hydroxide; (ii) Iron (III) trioxonitrate (V); (iii) Copper (II) tetraoxosulphate (VI); (iv) Potassium heptaoxodichromate (VI).	lutions: 5 = 1 14 [4 mark
	(c) Give one example of a neutral oxide which is a colourless liquid at room temperature.	[1 ma