

**WASSCE / WAEC Integrated Science May/June 2011 Past Question Paper 2**  
**(Practical Work)**

**[www.Larnedu.com](http://www.Larnedu.com)**

**S5172 WASSCE**  
**May/June 2011**  
**INTEGRATED**  
**SCIENCE 2**  
**Test of**  
**Practical Work**  
**2 hours**

**2**

Name .....

Index Number .....

**THE WEST AFRICAN EXAMINATIONS COUNCIL**  
**West African Senior School Certificate Examination**  
**INTEGRATED SCIENCE 2**

May/June 2011

TEST OF PRACTICAL WORK

2 hours

[60 marks]

*Write your name and index number in ink in the spaces provided above.*

*Answer all the questions.*

*Write your answers in the answer booklet provided.*

*Credit will be given for clarity of expression, orderly presentation of material and for answers which show that you have had the required practical experience.*

1. Figure 1 below illustrates a set-up used for an experiment to demonstrate photosynthesis in green plants. Study the diagram carefully and use it to answer the questions that follow.

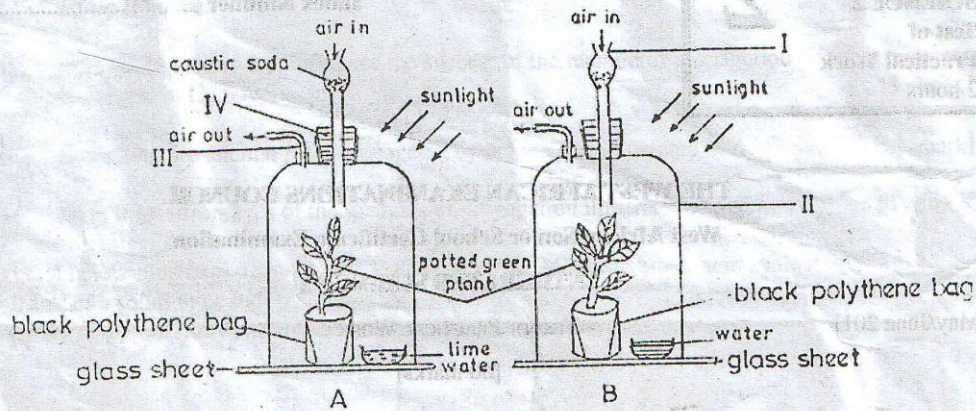


Fig. 1

- (a) Name the parts labelled I, II, III and IV. [2 marks]
- (b) State one function of each of the following substances used in the experiment:
- lime water;
  - caustic soda;
  - black polythene bag. [3 marks]
- (c) State the importance of the set-up B in this experiment. [1 mark]
- (d) (i) In which of the set-ups A and B, would the leaves show a positive test for starch? [2 marks]  
 (ii) Give one reason to support your answer in (d) (i).
- (e) State two precautions to be taken in setting up this experiment. [2 marks]
- (f) Suggest the aim of the experiment. [1 marks]

2. In an experiment to determine the velocity of a moving body, the displacements,  $d = d_1, d_2, d_3, d_4$  and  $d_5$  of the body and the corresponding times,  $t = t_1, t_2, t_3, t_4$  and  $t_5$  taken were determined.

Figure 2a represents the displacements,  $d = d_1, d_2, d_3, d_4$  and  $d_5$ , while Figure 2b represents the corresponding times,  $t = t_1, t_2, t_3, t_4$  and  $t_5$ .

Study the figures carefully and answer the questions that follow.

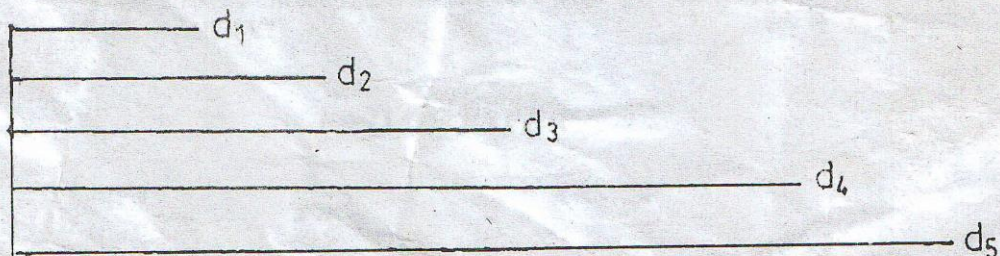
Fig. 2a. Displacements,  $d$ , in centimetres



Fig. 2b. Stop clock showing time,  $t$  in seconds

- (a)
- (i) Measure and record the raw displacements,  $d = d_1, d_2, d_3, d_4$  and  $d_5$ .
  - (ii) Read and record the times,  $t = t_1, t_2, t_3, t_4$  and  $t_5$ .
  - (iii) Convert the raw values of displacements recorded in (a) (i) to actual displacements,  $D = D_1, D_2, D_3, D_4$  and  $D_5$  using the scale  $1 \text{ cm} \equiv 10 \text{ m}$ .
  - (iv) Tabulate your results obtained in (a) (i), (a) (ii), and (a) (iii) as shown below.

$t/s$	$t_1$	$t_2$	$t_3$	$t_4$	$t_5$
Raw value of $d/cm$					
Actual value of $D/m$					

[7 marks]

- (b) Plot a graph with actual displacements  $D$  on the vertical axis and times,  $t$  on the horizontal axis.

[5 marks]

- (c)
- (i) Determine the slope of the graph.
  - (ii) State the significance of the slope of the graph determined in (c) (i).

[3 marks]

3. Figure 3 illustrates three different methods of crop propagation. Study the figure carefully and answer the questions that follow.

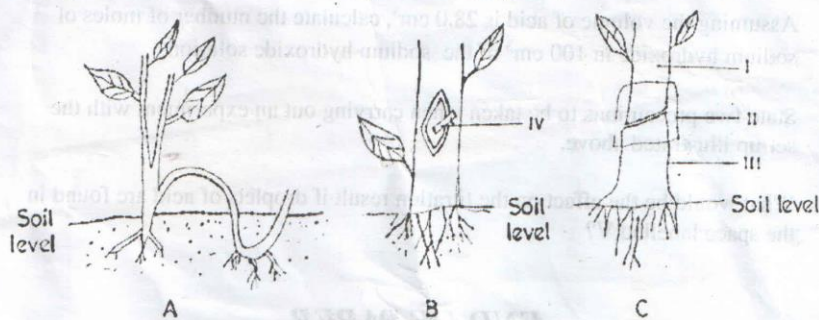


Fig. 3

- (a) Name the parts labelled I, II, III and IV. [2 marks]
- (b) Identify each of the methods of propagation in A, B, and C. [3 marks]

- (c) Given a citrus seedling, a mature citrus plant, a knife and a wrapping tape, describe how the propagation method would be performed as illustrated in set-up **B** above. [4 marks]
- (d) State **three** factors that influence the success of the method of propagation illustrated in **C** above. [3 marks]
- (e) Name **one** ornamental plant propagated by the method illustrated in **A**. [1 mark]
- (f) State **four** advantages of the methods of propagation illustrated above. [4 marks]

4. Figure 4 below illustrates a set-up for the titration of 0.2 M hydrochloric acid against 25.0 cm<sup>3</sup> of a solution of sodium hydroxide.

Study the figure carefully and answer the questions that follow.

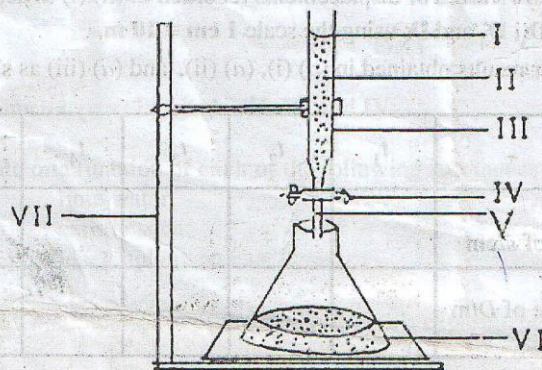


Fig. 4

- (a) (i) Name the parts labelled, **I, II, III, IV, V** and **VI**. [6 marks]
- (ii) State **one** function of each of the parts labelled **III, IV** and **VII**.
- (b) Write a balanced chemical equation for the reaction that takes place between the hydrochloric acid and the sodium hydroxide. [2 marks]
- (c) Assuming the volume of acid is 28.0 cm<sup>3</sup>, calculate the number of moles of sodium hydroxide in 100 cm<sup>3</sup> of the sodium hydroxide solution. [5 marks]
- (d) State **two** precautions to be taken when carrying out an experiment with the set-up illustrated above. [2 marks]
- (e) What would be the effect on the titration result if droplets of acid are found in the space labelled **V**? [2 marks]

**END OF PAPER**

Visit [Larnedu.com](http://Larnedu.com) for more [WASSCE / WAEC past questions](#).