

# BECE INTEGRATED SCIENCE 2011

## Paper 2

(Essay – Questions)

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## INTEGRATED SCIENCE

### PAPER 2 – ESSAY

1 ¼ HOURS

[PART 1](#)

[PART 2](#)

*This paper is in two parts, I and II.*

*Answer Question 1 in Part I and any other **four** questions in Part II.*

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Answer Question 1 in Part I and any  
other four questions in Part II.**

*Credit will be given for clarity of expression and orderly presentation of material.*

## PART I

[40 marks]

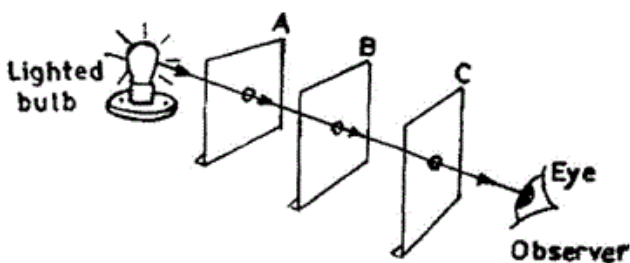
Answer Question **all** of Question 1.

1.  
(a) In an experiment to demonstrate a property of light, three cardboards, **A, B**

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and **C** with holes in their centres are arranged in a straight line between a lighted bulb and an observer as shown in the illustration below.

*Study the illustration carefully and use it to answer the questions that follow.*



- (i) What would the observer see from the position shown?
- (ii) What would the observer see when cardboard **B** is slightly displaced from the line?
- (iii) Explain the observation made in (a)(ii) above.
- (iv) What would be observed when the cardboard **B** is brought back to its original position?
- (v) What property of light is being demonstrated in this experiment?
- (vi) Mention
  - ( $\alpha$ ) **two** natural occurrences that could be explained by the property of light demonstrated.
  - ( $\beta$ ) **one** device that works on the property of light demonstrated.

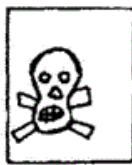
**(b)** The diagrams below are illustrations of hazard symbols found in everyday life. Study them carefully and use them to answer the questions that follow:



**A**



**B**



**C**



**D**

- (i) What does each symbol **A**, **B**, **C** and **D** represent?

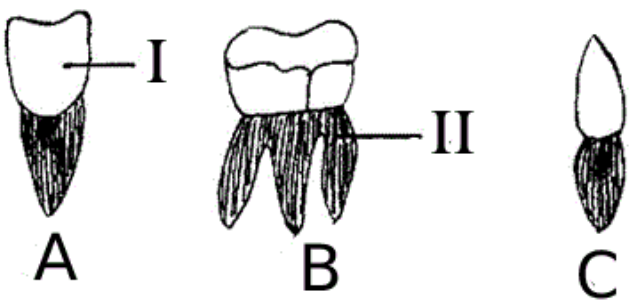
(ii) Name one substance each that is associated with **each** of the symbols **A**, **B** and **C**

(iii) Name one place where the symbol **D** can be found.

(iv) State **two** advantages of hazard symbols.

(c) The diagrams below are illustrations of the different types of teeth in humans.

*Study them carefully and use them to answer the questions that follow:*



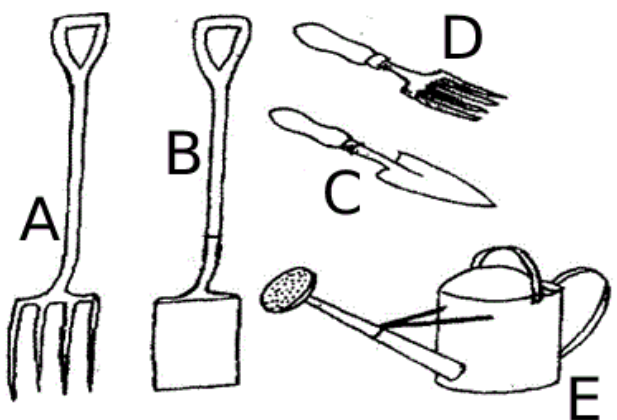
(i) Identify each type of teeth labeled **A**, **B** and **C**..

(ii) Describe the shape of each of the teeth labeled **A**, **B** and **C**.

(iii) State one function of each of the teeth labeled **A**, **B** and **C**..

(iv) Name the parts of the teeth labeled **I** and **II**.

(d) The diagrams below are illustrations of some farm tools. Study them carefully and use them to answer the questions that follow:



(i) Identify **each** of the tools labeled **A, B, C, D** and **E**.

(ii) Mention **one** use of each of the tools labeled **A, B, C, D** and **E**.

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## PART II

[60 marks]

Answer **four** questions only from this section.

**2. (a)** (i) What are ruminants?

(ii) Give two examples of ruminants

**(b)** (i) What is force?

(ii) State two effects of forces on a body

**(c)** (i) Mention two ways in which the carbon cycle can be maintained.

(ii) State one environmental effect when the carbon cycle is disrupted

**(d)** (i) Mention the three sub-atomic particles.

(ii) State the relative charge on each of the three sub-atomic particles mentioned in (d) (i) above.

(iii) Name the particle formed when an atom loses an electron

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**3. (a)** (i) What is a mixture?

(ii) Explain why some mixtures are thoroughly stirred before they are used.

**(b)** (i) What is reflection of light?

(ii) State two characteristics of the images formed by plane mirrors.

**(c)** (i) What is a fertilizer?

(ii) Give one example of an inorganic fertilizer.

**(d)** (i) What is indiscriminate sex?

(ii) State two dangers of indiscriminate sex on humans

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**4. (a)** (i) What is a simple machine?

(ii) Give two examples of a simple machine.

**(b)** (i) What is rusting?

(ii) State two effects of rusting

**(c)** (i) What are food nutrients?

(ii) Classify the following food items as carbohydrate, fats and oil or protein:

*Beans, palm fruits, meat margarine, bread and maize.*

**(d)** (i) State two effects of malnutrition in farm animals.

(ii) Mention one disease of farm animals caused by virus.

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**5. (a)** (i) What is soil erosion?

(ii) Name two methods of controlling soil erosion

**(b)** (i) Explain each of the following terms as used in ecology:

( $\alpha$ ) Adaptation

( $\beta$ ) Endangered species

**(c)** (i) Give one example of hard water

(ii) Explain why it is advisable to drink water which is hard.

**(d)** (i) What is magnetic field?

(ii) State two methods of making magnets.

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**6. (a)** (i) Define each of the following terms:

( $\alpha$ ) Solvent

( $\beta$ ) Solute

(ii) Name one common solvent used in the home.

**(b)** Explain the following terms as used in animal production:

(i) Ration;

(ii) Dehorning

**(c)** (i) What is an element

(ii) Write down the symbol of each of the following chemical substances:

( $\alpha$ ) Potassium

( $\beta$ ) Sulphur

(d) Explain each of the following terms:

(i) Mixed farming

(ii) Mixed cropping

**END OF PAPER**

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**..by the name of  
Jesus Christ ..  
whom you crucified,  
whom God raised  
from the dead..**

**Acts 4: 10**