

0909021/2&1 BBEKO  
September 2021  
**INTEGRATED**  
**SCIENCE 2 & 1**  
**Essay & Objective**  
2 hours

Name.....

Index Number.....

**BEST BRAIN EXAMINATIONS KONSORTIUM  
GHANA**

**Special Private Mock Examinations For BECE Candidates**

September 2021

**INTEGRATED SCIENCE 2 & 1**

2 hours

*Do **not** open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your **name** and **index number** in **ink** in the spaces provided above.*

*This booklet consists of two papers. Answer Paper 2 which comes first, in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last **1 hour 15 minutes** after which the answer booklet will be collected. Do **not** start Paper 1 until you are told to do so. Paper 1 will last **45 minutes**.*

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0909021 bbeko science 2&1

2  
PAPER 2  
ESSAY  
[100 marks]

1¼ hours

*This paper is in two sections: A and B. Answer Question 1 in section A and any other four questions in section B.*

*Answer all the questions in your answer booklet.*

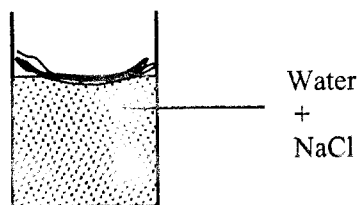
*Credit will be given for clarity of expression and orderly presentation of material.*

SECTION A  
[40 marks]

*Answer all of Question 1*

1. (a) The diagram below is an illustration of the behavior of sodium chloride in water.

*Study the diagram carefully and answer the questions that follow.*

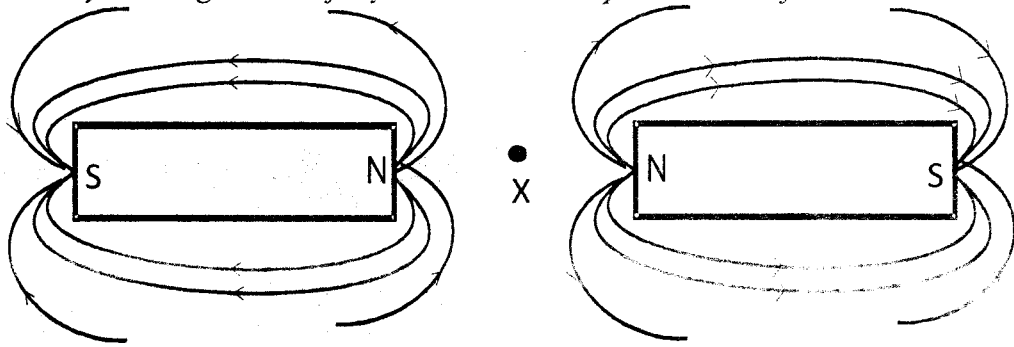


- (i) State what happens in the test tube. [2 marks]
- (ii) Describe the behaviour of sodium chloride in the diagram above. [2 marks]
- (iii) In what two ways would you increase the rate of the process? [2 marks]
- (iv) If more and more sodium chloride is added, what finally occurs? [2 marks]
- (v) Describe how you would separate the components in the set-up. [2 marks]
- (b) Below is the diagram of a vegetable crop.  
*Study the diagram carefully and answer the questions that follow.*

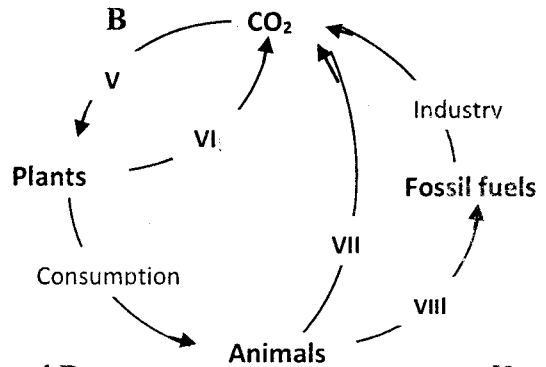
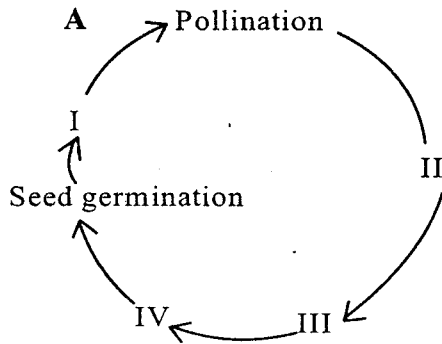


- (i) Identify the crop shown above and the class it belongs. [2 marks]
- (ii) Describe how the vegetable crop above is cultivated. [2 marks]
- (iii) Give three reasons why the crop above is important to farm soil. [3 marks]
- (iv) State three nutritional benefits of the crop above. [3 marks]

- (c) Below is a set-up showing two bar magnets placed close to each other. Study the diagram carefully and answer the questions that follow.



- (i) What magnetic force would exist between the pair of magnets? [2 marks]
  - (ii) Explain why the magnetic force mentioned in 1 (c) (i) will exist. [4 marks]
  - (iii) What is the name of the point X between the two magnets? [2 marks]
  - (iv) What is a *magnetic field*? [2 marks]
- (d) The diagrams below demonstrate two important cycles in life. Study the diagrams carefully and answer the questions that follow



- (i) Identify the cycles shown as A and B. [2 marks]
- (ii) Identify the stages labeled I, II, III and IV of A. [2 marks]
- (iii) Describe what occurs at each of the stages labeled I, II, III and IV. [2 marks]
- (iv) Identify the processes labeled V, VI, VII and VIII of B. [2 marks]
- (v) State **two** ways of maintaining the cycle B. [2 marks]

**SECTION B**

[ 60 marks]

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

- 2. (a) (i) State **four** functions of the stomach as a digestive organ. [2 marks]
- (ii) Mention **two** ways of keeping the stomach healthy. [2 marks]
- (b) Oxygen has an atomic number 8. Draw to show its atomic structure. [4 marks]
- (c) Explain why fresh egg sinks in water but floats in salt solution. [3 marks]
- (d) State **four** differences between clay and sand. [4 marks]

**Turn over**

3. (a) Explain the importance of each of the following in household wiring:  
 (i) fuse; [2 marks]  
 (ii) earthing; [2 marks]
- (b) Describe how pollination takes place in an insect-pollinated flower. [3 marks]
- (c) (i) State **two** uses of the hoe as a farming tool. [2 marks]  
 (ii) Name **four** other common farming tools. [2 marks]
- (d) (i) Give **two** differences between *condensation* and *sublimation*. [2 marks]  
 (ii) State **two** factors which affect the rate of evaporation of a liquid. [2 marks]
4. (a) (i) What is a *base*? [2 marks]  
 (ii) State **two** properties of a base. [2 marks]
- (b) State **three** uses of protein in the human body. [3 marks]
- (c) Name **two** industrial products of each of the following agricultural crops:  
 (i) Cocoa beans [2 marks]  
 (ii) Palm oil. [2 marks]
- (d) (i) State **two** properties of magnets. [2 marks]  
 (ii) Give **two** ways of demagnetizing magnets. [2 marks]
5. (a) State **two** methods each of controlling mosquitoes at the  
 (i) pupal stage; [2 marks]  
 (ii) adult stage. [2 marks]
- (b) (i) What is a *p-n junction diode*? [2 marks]  
 (ii) Explain the difference between *forward bias* and *reverse bias*. [2 marks]
- (c) (i) Give **two** harmful effects of weevils on crop production. [2 marks]  
 (ii) State **two** ways of controlling weevils on the farm. [2 marks]
- (d) (i) What is a *saturated solution*? [1 mark]  
 (ii) Describe how you can prepare a saturated salt solution in the lab. [2 marks]
6. (a) (i) Name **two** organisms which cause crop diseases. [2 marks]  
 (ii) List **two** methods of transmission of crop diseases. [2 marks]
- (b) Give **three** harmful effects of smoking on humans. [3 marks]
- (c) State **three** harmful effects of air pollutants. [3 marks]
- (d) (i) State **two** laws of reflection of light. [2 marks]  
 (ii) Draw a labeled diagram of a reflection of light in a plane mirror. [3 marks]

**END OF ESSAY TEST**