**NAME: ………………………………………….………………………… INDEX NO: .........................................**

**SCHOOL………………………………………………………………….. DATE………………………………… CANDIDATE’S SIGN………………………………………….…………**

**231/3**

**BIOLOGY**

**PAPER 3**

**INSTRUCTIONS TO CANDIDATES**

* *Write your* ***name*** *and* ***index******number*** *in the spaces provided above.*
* ***Sign*** *and write the* ***date*** *of examination in the spaces provided above.*
* *You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
* *Answers must be written in the spaces provided in the question paper.*

**For Examiner’s Use only:-**

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score** |
| 1 | 14 |  |
| 2 | 12 |  |
| 3 | 14 |  |
| TOTAL | 40 |  |

*This paper consists of 4 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.*

1. You are provided with two **solids** **A** and **B** .Place all **solid A** into a boiling tube, and add 10ml of distilled water. Label the resulting mixture as **solution A**. Divide the solution **A** into equal portions in three separate test tubes all labelled **A**, each of which will be used for a food test in the table below.

Place all **solid B** into a boiling tube, and add 10ml of distilled water. Label the resulting mixture as **solution B.** Divide the solution **B** into equal portions in three separate test tubes all labelled **B**, each of which will be used for a food test in the table below.

1. Using the reagents provided carry out food tests to determine the food substances present in solutions **A** and **B** in each of the test tubes. In each case, record the food substance tested for, procedure followed, observation and conclusion made in the table below. (9mks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Solution** | **Food substance** | **Procedure** | **Observation** | **Conclusion** |
| **A** |  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **B** |  |  |  |  |
|  |  |  |  |
|  |  |  |  |

(b) (i) Which of the **two** solids would be appropriate to be included in a diet of a family whose children suffer from Kwashiorkor? (1mrk)

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(ii) Give a reason for your answer in (b) (i) above (1mrk)

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c) (i) Name the part of the digestive system where digestion of the food substance(s) found in solid **B**

starts (1mrk)

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(ii) Name the enzyme which starts the digestion of the food substance in solid **B.** (1mrk)

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d) State **one** way in which the food substance in solid **A** is important to living organisms. (1mrk)

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2. You are provided with specimens labelled **P, Q** and **R**

**(a)** Cut **specimen P** transversely so as to obtain two identical halves. Draw and label the cut surface

of one half (3mrks)

b) (i) Name the type of the dehiscent fruit represented by **specimen Q** (1mrk)

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(ii) Identify the type of placentation found in **specimen Q** (1mrk)

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(c) Describe the various features of the following parts of **specimen R**, other than colour and smell

(i)Corolla (3mrks)

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(ii)Gynoecium (3mrks)

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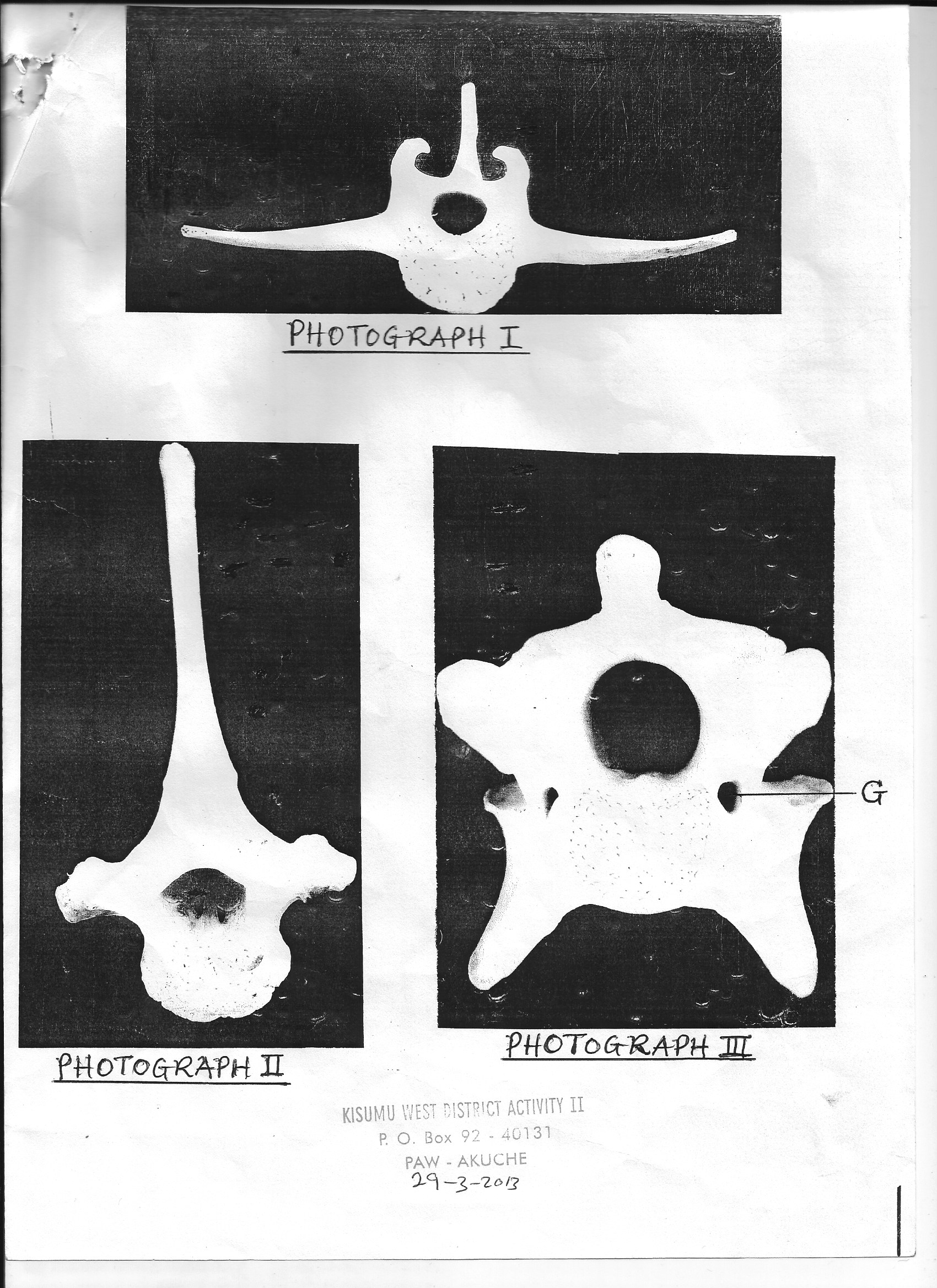
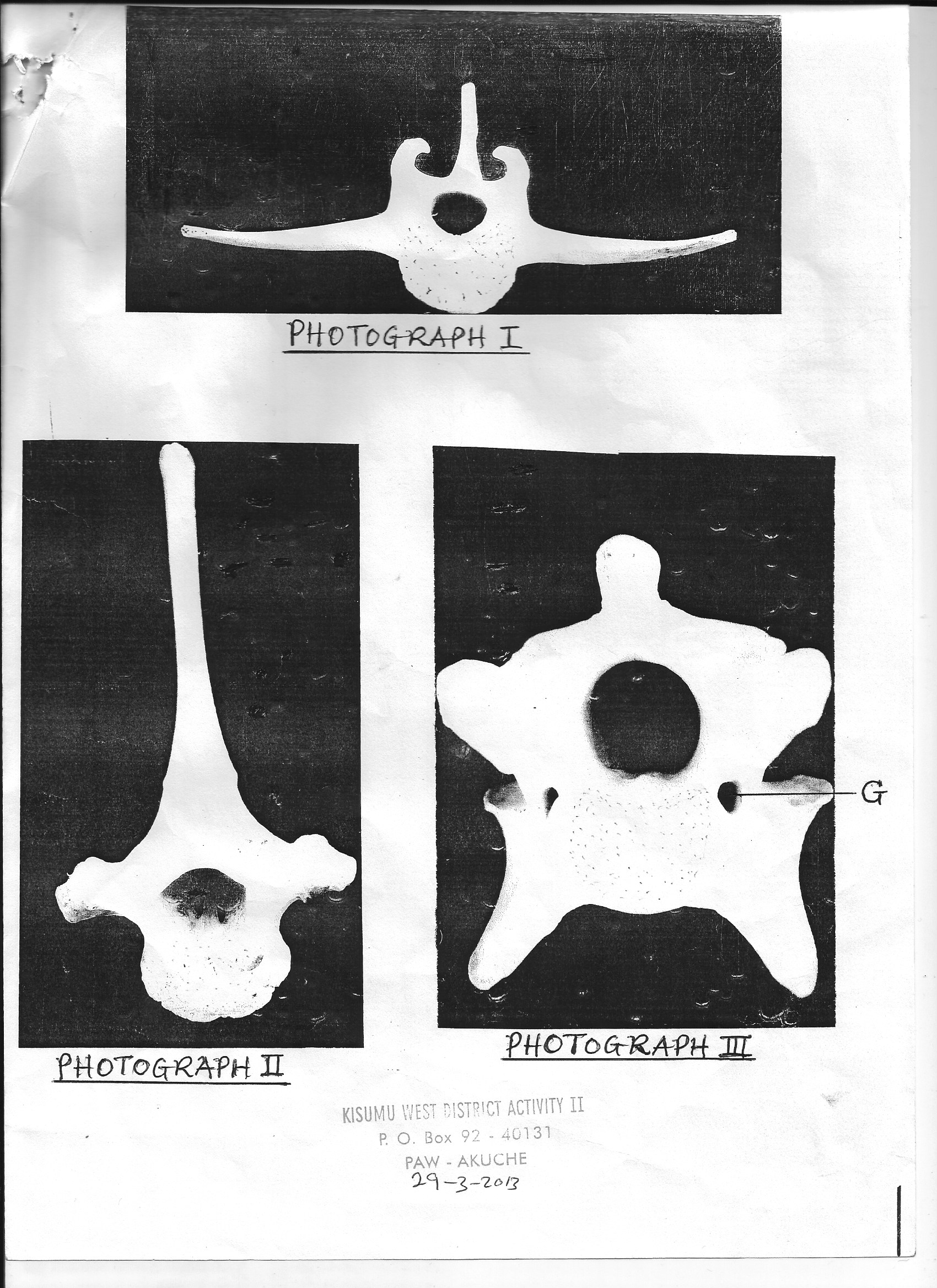
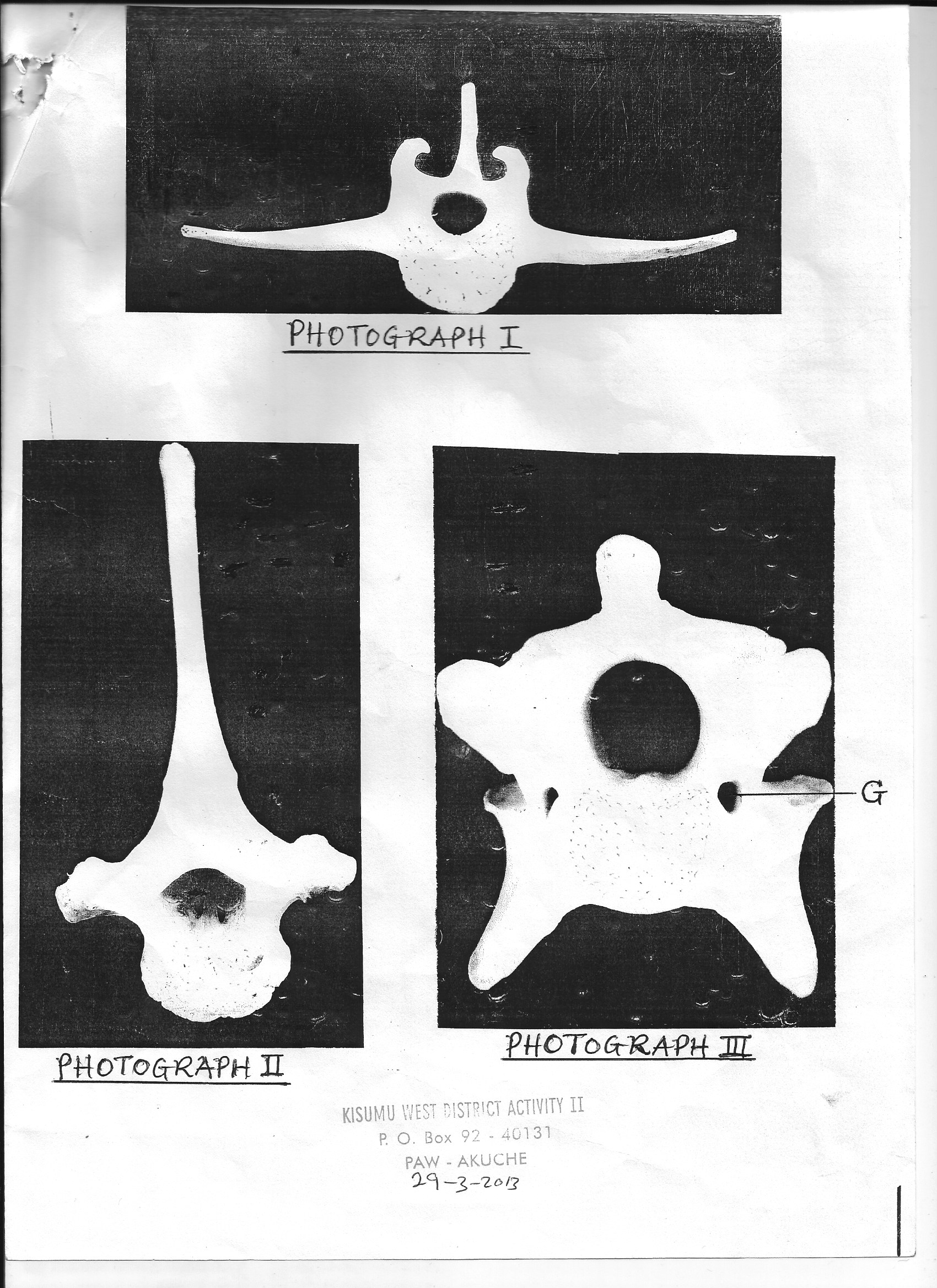
…………………………………………………………..…………………………………………….

d) Name the division to which **specimen R** belongs (1mrk)

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(3) Below are **photographs** **I ,II** and **III** of anterior view of three different types of vertebrae obtained from the same mammal. Study them carefully and answer the questions that follow;



**G**

**PHOTOGRAPH I**

**PHOTOGRAPH II**

**PHOTOGRAPH III**

(a)Identify each of the vertebrae. Give a reason in each case.

(i) Vertebra in **photograph I** …………………………………………………………………..

Reason…………………………………………………………………….……………………..(1mrk)

(ii) Vertebra in **photograph II** ................................................................................................... (1mrk)

Reason..........................................................................................................................................(1mrk)

(iii) Vertebra in **photograph III**................................................................................................

Reason........................................................................................................................................... (1mk)

(b) State **three** differences between the vertebrae in **photographs I** and **II** (3mrks)

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(c)Identify the part labelled **G** in the vertebra in **photograph III** (1mrk)

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(d) Name the region of the body of the mammal from which the vertebra in **photograph III** was

obtained. (1mk)

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(e) Explain how the vertebra in **photograph I** is normally adapted to perform its function (3mrks)

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