**Name……………………………………………………… Index No………………………..**

231/1

BIOLOGY **Date……………………………**

(Theory)

MAY/JUNE 2016 **Sign……………………………**

**2 hours**

**EKSIKA JOINT EVALUATION TEST**

**Kenya Certificate of Secondary Education**

***Instructions***

* Write your Name and Index Number in the spaces provided above.
* Write the date of the examination in the space provided above.
* Answer all the questions in the spaces provided.

***For Examiner’s use only***

|  |  |  |
| --- | --- | --- |
| **Question** | **Maximum Score** | **Candidate’s Score** |
| 1-25 | 80 |  |

***This paper consists of 10 printed pages.***

***Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.***

1. What name is given to the study of (2mks)

(i) Cells

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Inheritance and variation

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

2. Name the **THREE** end products of anaerobic respiration in plants (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

3. a) A student collected an organism and observed the following features: simple eyes, four

pairs of legs and two body parts.

(i) State the class to which the organism belongs (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Give an example of an organism in this class (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Name the kingdom to which plasmodium belongs (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

4.(a) Explain continental drift in evolution (3mks)

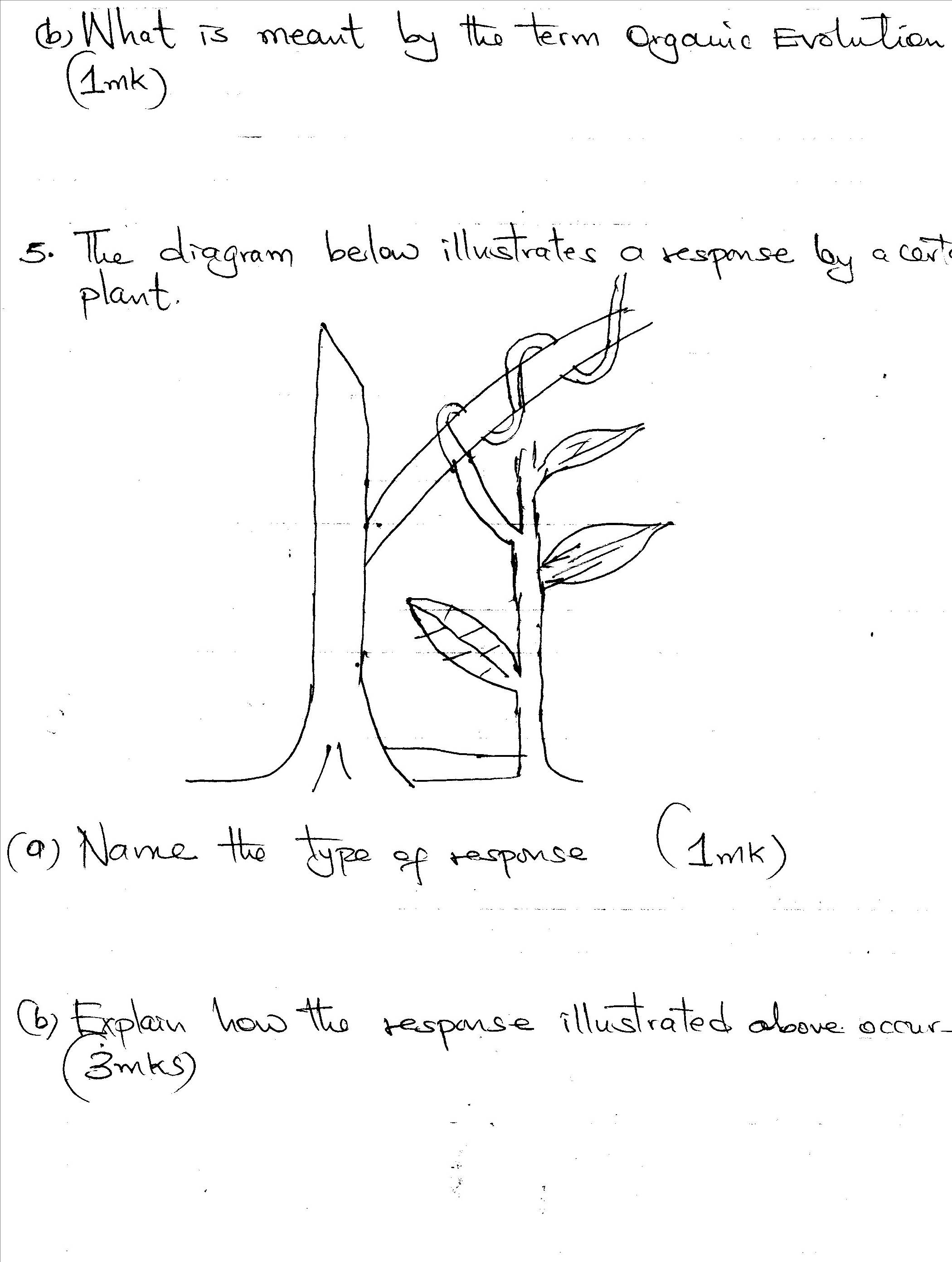
………………………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) What is meant by the term Organic Evolution (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

5. The diagram below illustrates a response by a certain plant



(a) Name the type of response (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Explain how the response illustrated above occurs (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

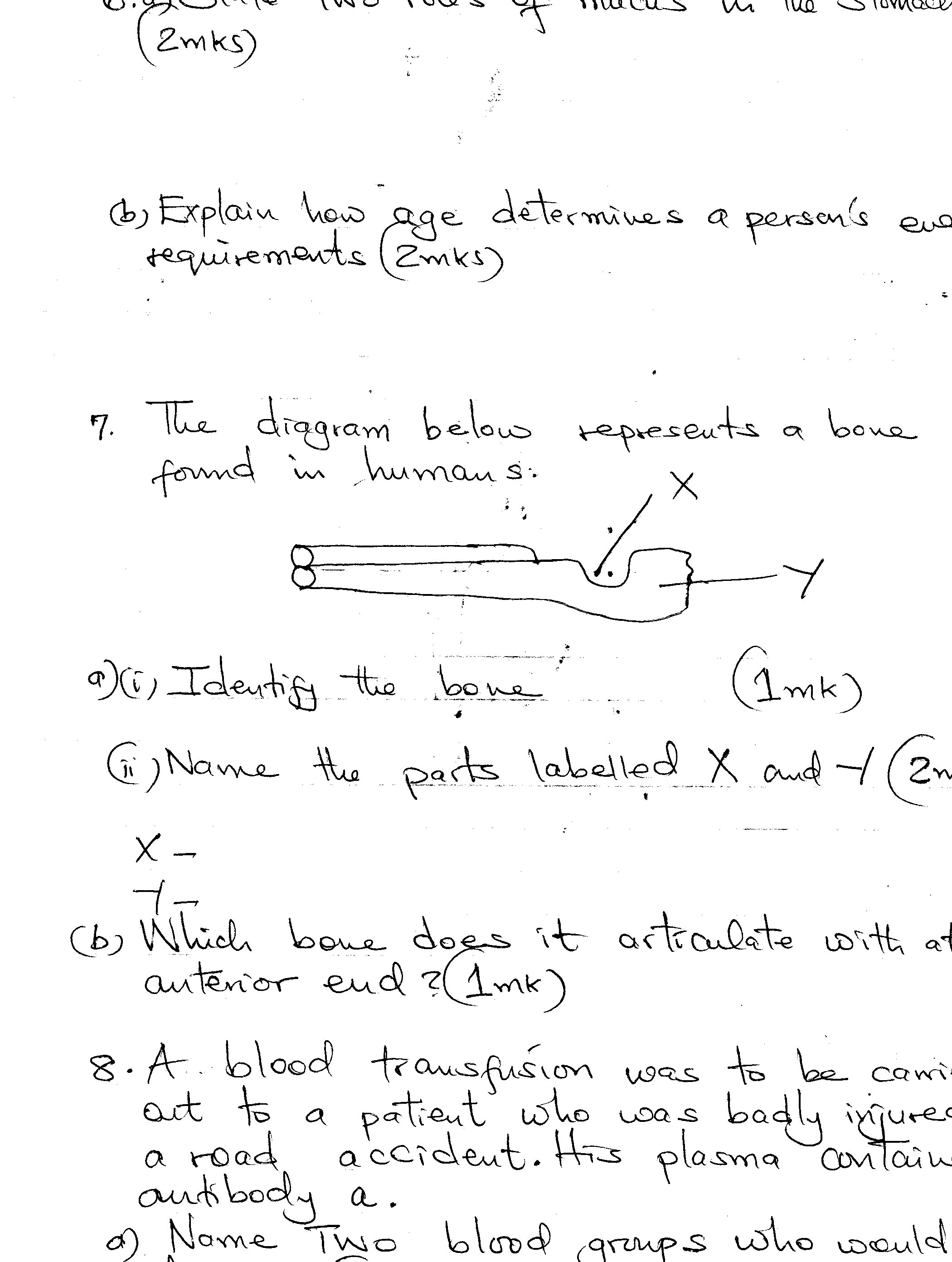
6. a) State two roles of mucus in the stomach (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Explain how age determines a person’s energy requirements. (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

7. The diagram below represents a bone found in humans



a)(i) identify the bone (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) Name the parts labeled X and Y (2mks)

X\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Which bone does it articulate with at the anterior end? (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

8. A blood transfusion was to be carried out to a patient who was badly injured in a road accident. His plasma contained antibody a.

(a) Name two blood groups who would be donors (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Explain your answer in (a) above (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

9. What is the necessity of classifying living organisms (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

10. Name the organelle that carries out the following functions (3mks)

(i) Transport of proteins

………………………………………………………………………………………………………………

(ii) Manufacture of lipids

………………………………………………………………………………………………………………

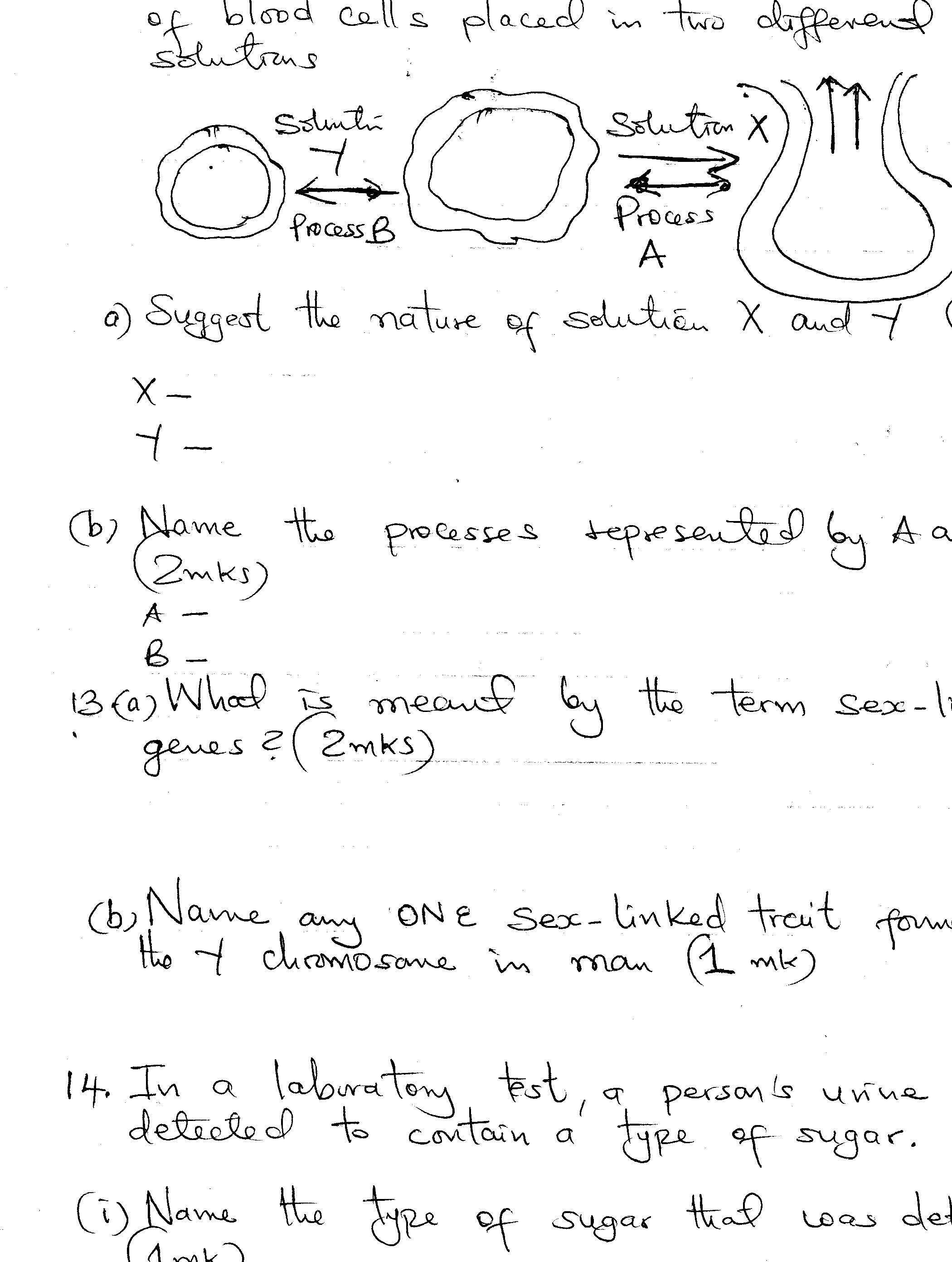
(iii) Destroys worn out tissues and cells

………………………………………………………………………………………………………………

11. State ways in which respiratory surfaces are adapted to perform their functions (4mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

12. The diagram below illustrates the behaviouir of blood cells placed in two different solutions



(a) Suggest the nature of solution X and Y (2mks)

X\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) Name the process represented by A and B (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

13 (a) What is meant by the term sex-linked genes? (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Name any ONE sex-linked trait found on the Y chromosomes in man (1mk)

………………………………………………………………………………………………………………

14. In a laboratory test, a person’s urine was detected to contain a type of sugar.

(i) Name the type of sugar that was detected (1mk)

………………………………………………………………………………………………………………

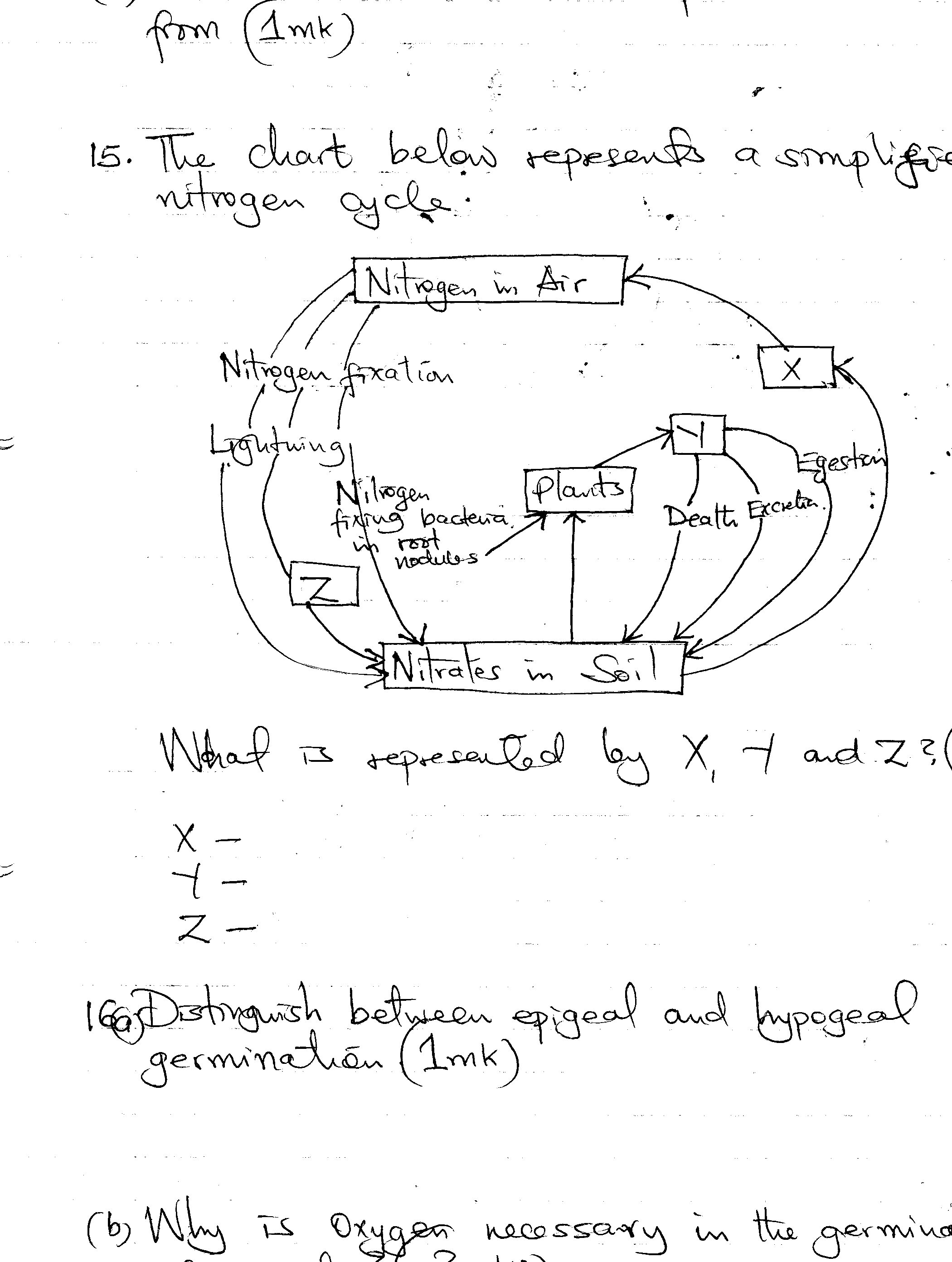
(ii) Name the hormone that was deficient (1mk)

………………………………………………………………………………………………………………

(iii) Name the condition, that person was suffering from (1mk)

………………………………………………………………………………………………………………

15. The chart below represents a simplified nitrogen cycle



What is represented by X,Y and Z? (3mks)

X\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Z\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

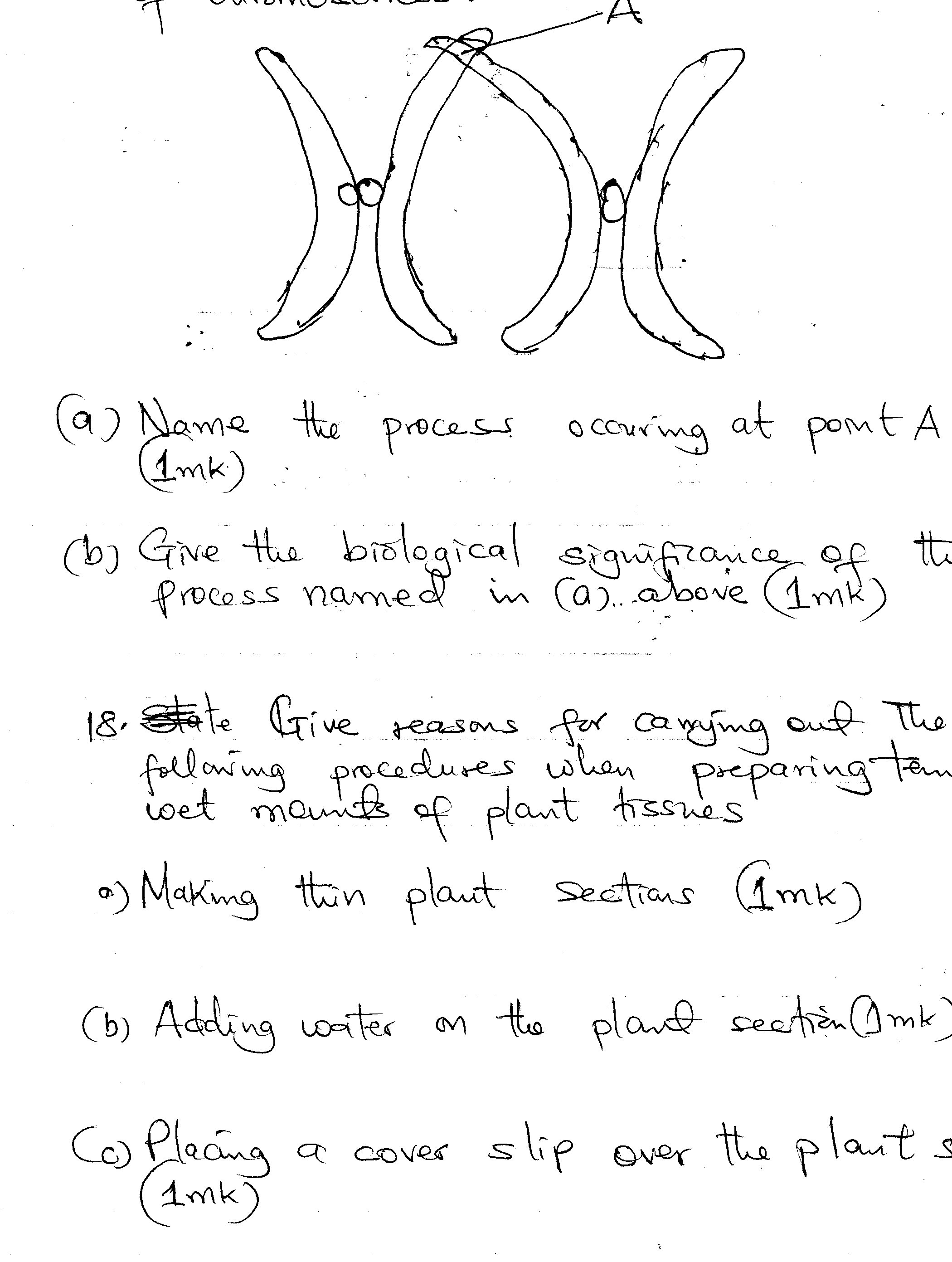
16 (a) Distinguish between epigeal and hypogeal germination (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Why is oxygen necessary in the germination of seeds? (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

17. Below is a diagram showing a pair of chromosomes



1. Name the process occurring at point A (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. Give the biological significance of the process named in (a) above (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………

18. Give reasons for carrying out the following procedures when preparing temporary wet mounts of plant tissues

a) Making thin plant sections (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

b) Adding water on the plant section (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

c) Placing a cover slip over the plant section (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

19. The scientific name for French bean is Phaseolus vulgaris

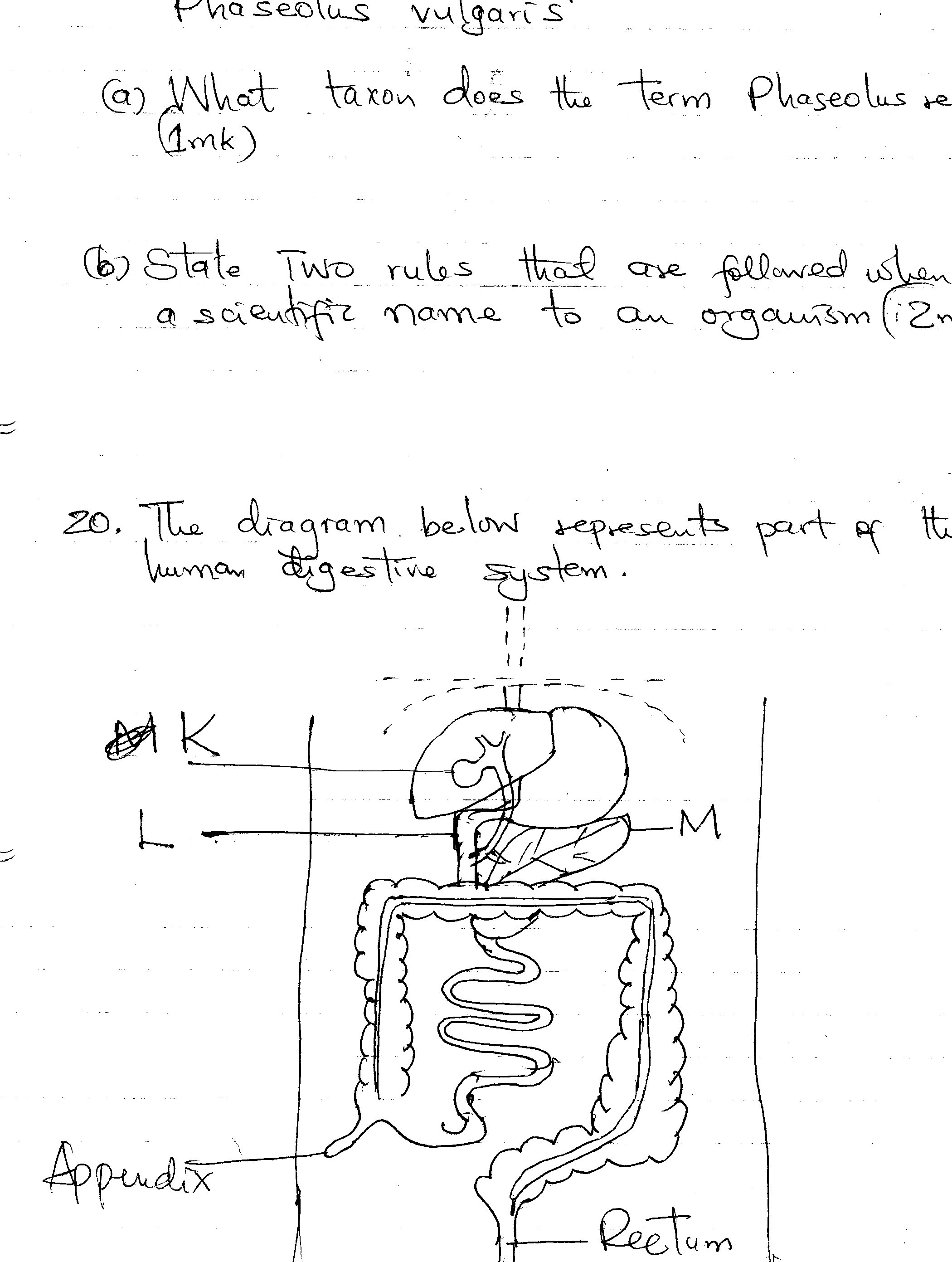
(a) What taxon does the term Phaseolus represent? (1mk)

……………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) State two rules that are followed when giving a scientific name to an organism (2mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

20. The diagram below represents part of the human digestive system



(a) Name the organs labeled L and M (2mks)

L\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) (i) Name the substance produced by the organ labeled K (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(ii) State the function of substance named in b(i) above (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

21.(a) Name ONE defect of the circulatory system in humans. (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) State THREE functions of blood other than transport (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

22. State the function of the following apparatus used in the collection of specimens.

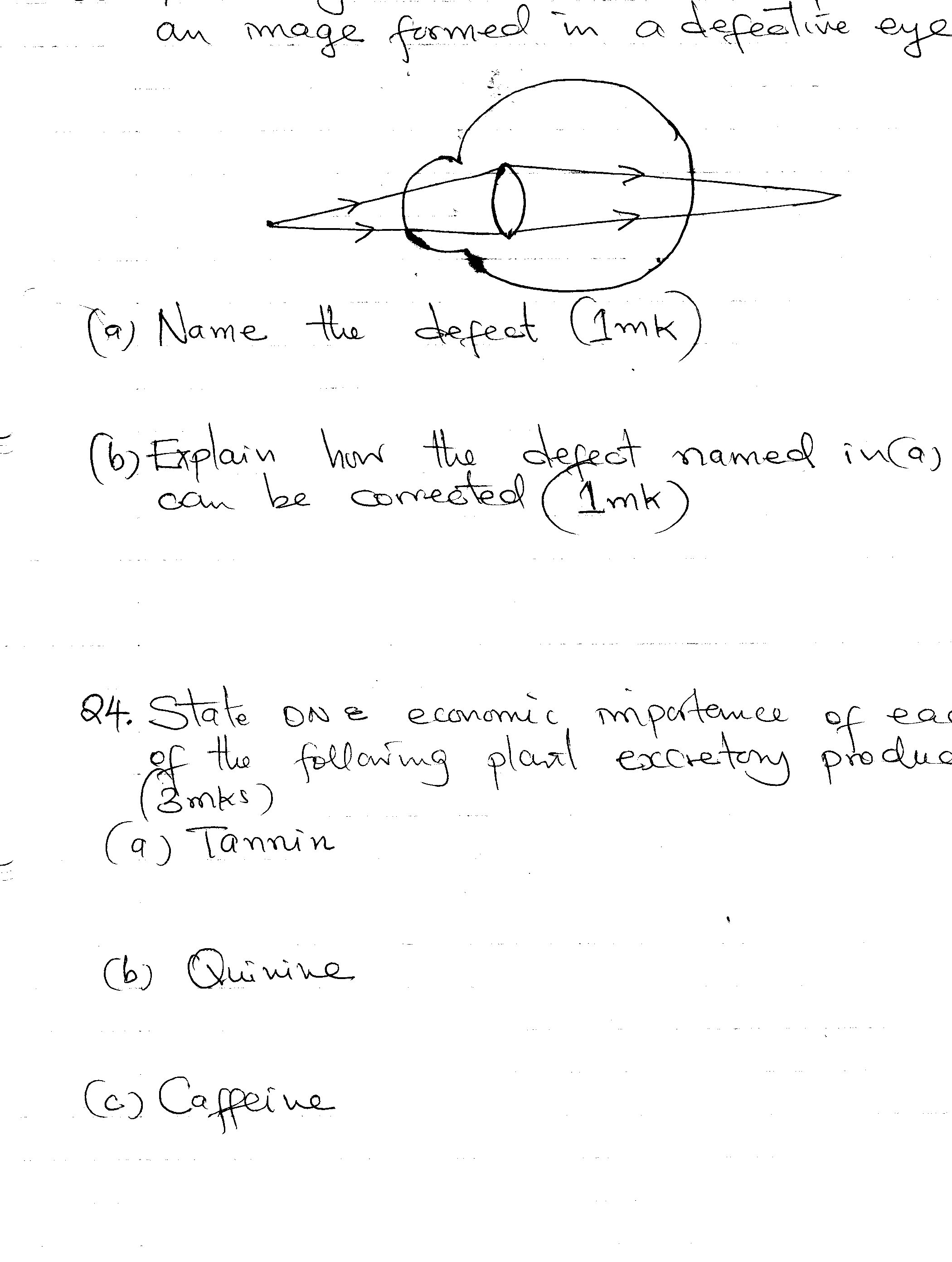
a) A pooter (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

b) A pit fall trap (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

23. The diagram below shows the position of an image formed in a defective eye



(a) Name the defect (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Explain how the defect named in (a) above can be corrected (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

24. State ONE economic importance of each of the following plant excretory products. (3mks)

(a) Tannin

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(b) Quinine

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

(c) Caffeine

………………………………………………………………………………………………………………………………………………………………………………………………………………………………

25. Name THREE types of chromosomal mutation (3mks)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

26. State one example of vestigial structure in humans (1mk)

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………