WEEK 7-8

CLASSIFICATION I

INTRODUCTION

PAST KCSE QUESTIONS ON THE TOPIC

1.

a) What is meant by the term binomial nomenclature? (1mk)

b) Give two reasons why classification is important (2mks)

2. Explain the following terms; (3mks)

a) Classification

b) Taxonomy

c) Binomial nomenclature

3.

a) State three characteristics of Monera that are not found in other kingdoms (3mks)

b) Name the class to which a termite belongs (1mk)

4. Ascaris lumbricoides is an example of an endoparasite. The name Ascaris refer to

5. Blackjack (Bidens pilosa) belongs to the family compositae. What does pilosa stand for? (1mk)

6. Define the term species. (1mk)

7. Distinguish between Taxonomy and taxon. (1mk)

WEEK 4-6

THE CELL

PAST KCSE QUESTION ON THE TOPIC

1. Which organelle would be abundant in?

   Skeletal muscle cell _____

   Palisade cell _____

2. State the functions of the following organelles.

   Lysosomes _____

   Golgi apparatus _____

3. State the functions of the following organelles;

   Goigi apparatus _____

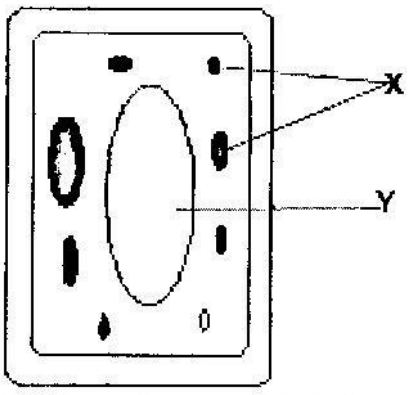
   Ribosomes cell _____

4. Name the organelles that perform each of the following functions in a cell.

   Protein synthesis _____

   Transport cell secretions _____

5. The diagram below represents a cell.



a) Name the parts labeled x and y

X _____

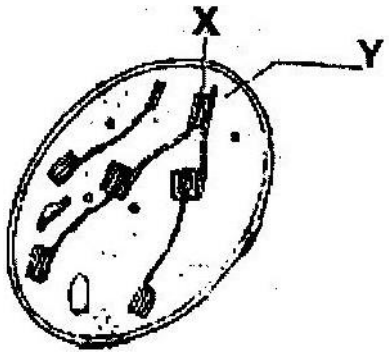
Y _____

b) Suggest why the structures labeled x would be more on one side than the other side.

6.

a) State the function of cristae in mitochondria (1mk)

b) The diagram below represents a cell organelle



(i) Name the part labeled Y (1mk)

(ii) State the function of the part labeled X (2 mks)

7.

a) What is the formula for calculating linear magnification of a specimen when using a hand lens? (1mk)

b) Give a reason why staining is necessary when preparing specimens for observation under the microscope. (1mk)

8.

State three functions of Golgi apparatus. (3mks)

9. Name two structures found in plant cell but are absent in animals cell.

10. Write the role of the following parts of a microscope

i) Nerve cell

ii) Palisade cell

iii) Root hair cell

iv) Red blood cell

11. The diameter field of view of a light microscopic is 3.5mm. Plant cells lying of the diameter are 10. Determine the size of one cell microns (1mm = 1000µm)

12. Define the following

i) Tissue

ii) Organ

iii) Organ system

NOVEMBER-DECEMBER HOLIDAY ASSIGNMENT

WEEK 1-3

CELL PHYSIOLOGY

PAST KCSE QUESTIONS ON THE TOPIC

1. The table below shows the concentration of some ions in pond water and in the cells sap of an aquatic plant growing in the pond.

Ions	Concentration in pond water (parts per million)	Concentration in cell sap (parts per million)
Sodium	50	30
Potassium	2	150
Calcium	1.5	1
Chloride	180	200

a) Name the processes by which the following ions could have been taken up by this plant. (2mks)

i) Sodium ions

ii) Potassium ions

b) For each processes named in (a) (i) and (ii) above, state one condition necessary for the process to take place. (2mks)

2. Explain how water in the soil enters the root hairs of a plant. (4mks)

3. Explain how drooping of leaves on a hot sunny day is advantageous to a plant.

(2mks)

4. a) What is diffusion? (2mks)

b) How do the following factors affect the rate of diffusion?

i) Diffusion gradient (1mk)

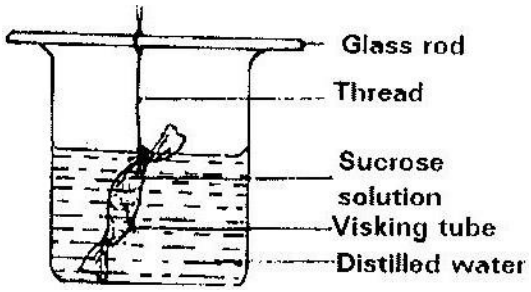
ii) Surface area to volume ratio (1mk)

iii) Temperature (1mk)

c) Outline 3 roles of active transport in the human body (2mks)

5. State the importance of osmosis in plants (3mks)

6. An experiment was set up as shown in the diagram below.



The set up was left for 30 minutes.

a) State the expected results. (1mk)

b) Explain your answer in (a) above. (3mks)

7. Explain why plant cells do not burst when immersed in distilled water. (2mks)

8. Distinguish between diffusion and osmosis. (2mks)

9. Define the following terms in relation to a cell

   a) Isotonic solution

   b) Hypotonic solution

   c) Hypertonic solution (3mks)

10. Addition of large amounts of salt to soil in which plants are growing kills the plants. Explain (6mks)

11. Explain why

    a) Red blood cells burst when placed in distilled water while plant cells remain intact.

    b) Fresh water protozoa like amoeba do not burst when placed in distilled water. (2mks)