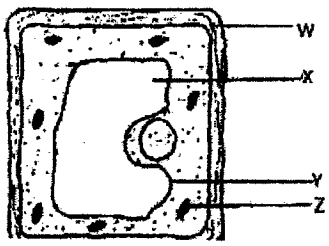
Adm.no.....Name.....Class.....

FORM TWO BIOLOGY END OF TERM EXAM.
TERM 1 2015. **Time 2 Hours**

1. Examine the diagram below carefully and use it to answer the questions that follow.



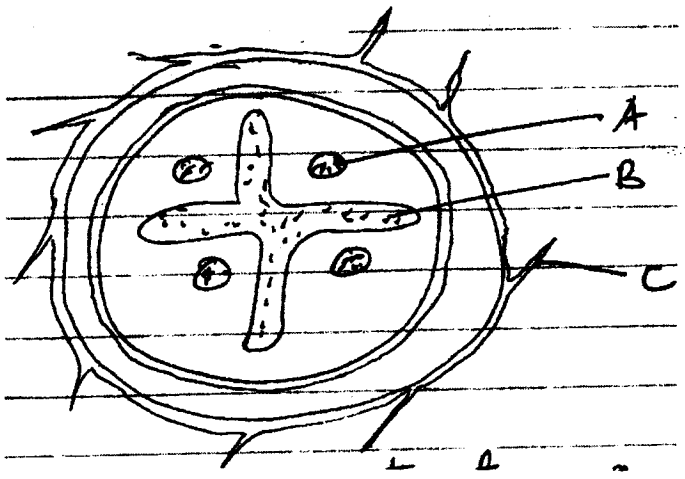
(a) Name the parts X, Y and Z. (3 marks)

(b) State the main substance which make-up the part labeled W. (1 mark)

(c) Name the process through which mineral salts move into the structure labeled X. (1 mark)

(d) Explain what happens to a red blood cell when placed in distilled water.(3 marks)

2. The figure below represents a transverse section of a plant region.



Name structures A B and C. (3mks)

Give the functions of structure A and B (2mks)

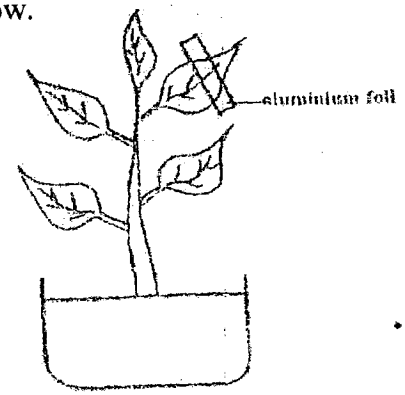
3. The table below shows the concentration of some ions in pond water and in the cell sap of an aquatic plant growing in the pond.

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) With a reason, name the process by which potassium ions could have been taken by this plant. (2mk)

b) State one condition necessary for the process named in (a) above to take place. (1mk)

4. In an experiment to investigate a factor affecting photosynthesis, a leaf of a potted plant which had been kept in the dark overnight was covered with aluminium foil as shown in the diagram below.



Set up was kept in sunlight for three hours after which a food test was carried out on the leaf.

(a) Which food test was carried out? (1mk)

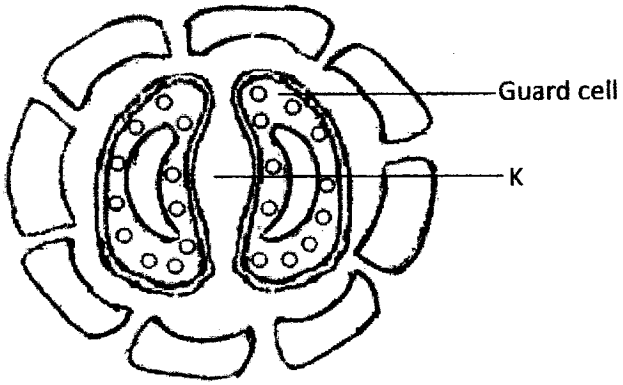
(b) State and explain the results of food test. (2mks)

(c) Why was the set up kept in sunlight for three hours? (2mk)

(d) (i) Explain why breast milk is important to newborn babies. (2mk)

(ii) State two functions of mucus secreted in the alimentary canal (2mks)

5. The following diagram shows the guard cell and its surrounding cells.



(a) Identify **two** features of the guard cell that adapt it to its function. (2mks)

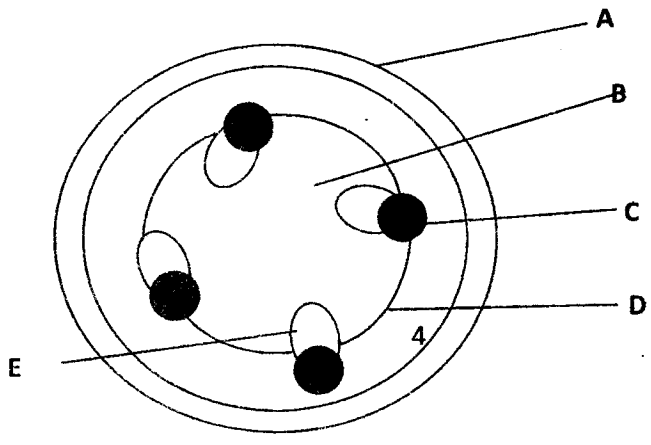
(b) Name structure K and state two functions the structure.

Name. (1mk)

Functions (2mk

(b) Explain what would happen to the structure **K** if the epidermis is immersed in a concentrated salt solution. (2mks)

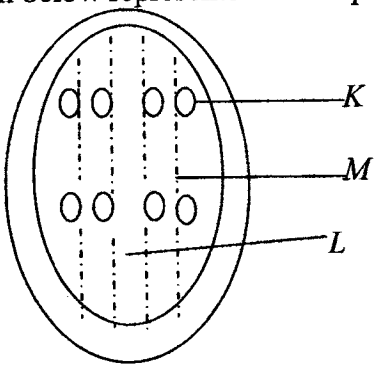
6. The diagram **below** represents a transverse section of a young stem.



(a) On the diagram name all the parts labeled **A, B,C, D** and **E** (5mks

(b) State the functions of the parts labeled **C** and **E**. (2mks)

7. The diagram below represents a chloroplast.



(a) Name the parts labeled M and L. (2mks)

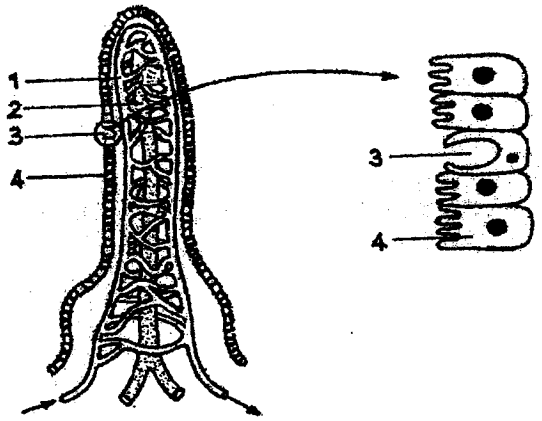
(b) List **two** processes that take place in the structure labeled K. (2mks)

8. What is the role of diastema in herbivores? (2mk)

(b) Name the two types of periodontal diseases. (2mks)

(c) What is the significance of emulsification? (2mk)

9. The diagram below represents a villus.



(a) (i) State the roles of the following structures in the villus: (2mks)

Capillary

Lacteal:

(b) The epithelial cells, one of which is shown enlarged on the figure have microvilli on their exposed surface. Suggest an advantage of these microvilli to the epithelial cells. (1mk)

(c) Name the process by which the products of digestion, present in high concentrations in the ileum, would pass into the capillaries. (1mk)

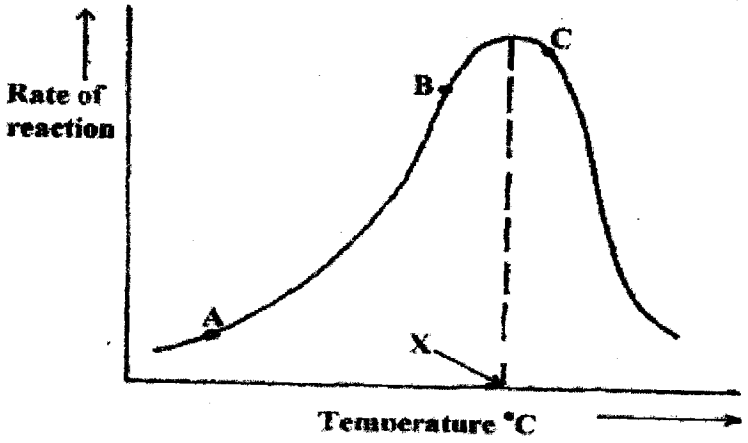
(d) Describe how the capillaries are adapted to allow this process to happen efficiently. (2mks)

(e) Some substances are absorbed into the capillaries by active uptake.

(i) Explain why active uptake is sometimes necessary. (1mk)

(ii) Suggest why active uptake stops when the epithelial cells of the ileum are exposed to a respiratory poison. (1mk)

10. The figure below shows the effect of temperature on an enzyme-catalyzed reaction.



a) Account for the shape of the graph:

i) Between points A and B (2 marks)

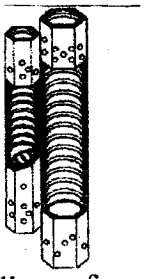
ii) Beyond C (2 marks)

b) What is point X? (1 mark)

c) Name two other factors that affect an enzyme-catalyzed reaction. (2 marks)

d) State the enzyme found in living tissues that breaks down hydrogen peroxide. (1 mark)

11. The cells shown below are adapted for transport in flowering plants.



a).Name the tissue in which these cells are found. (1 mark)

b) What is the role of the tissue you have named above in transport in plants. (1mk)

c).Identify and explain two observable features of these cells that adapt them to their role in transport. (2 marks)

(12) (a) A Student was viewing a slide preparation of a cheek cell under high power of a microscope. The features of the cell were blurred. Name the part of the microscope that the student would use to obtain a sharper outline of the feature. (1mk)

b) Give the formula used to calculate magnification in light microscope. (1mk)