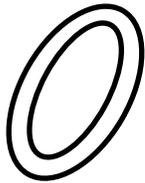


BIOLOGY
MID TERM 1 2023
FORM 2
MARKING SCHEME

1. The diagrams below show a red blood cell that was subjected to a certain treatment.



At start

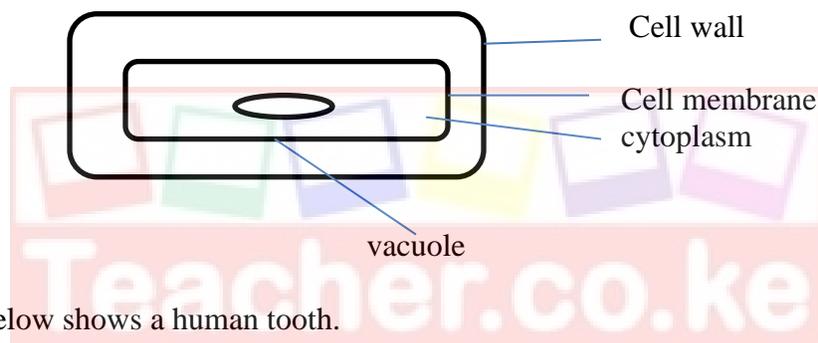


At the end of experiment

a) Account for the shape of the cell at the end of the experiment. (2mks)

- **The red blood cell was placed in a hypertonic solution. It lost water by osmosis and become evenate**

b) Draw a diagram to illustrate how a plant cell would appear if subjected to the same treatment. . (2mks)



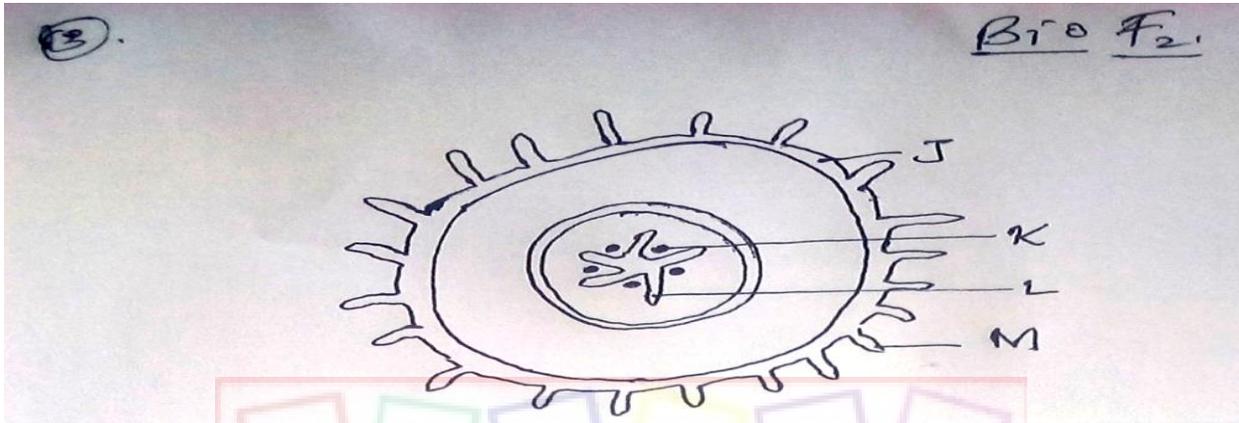
2. The diagram below shows a human tooth.



a) Identify the tooth. (1mk)
Canine

b) How is the tooth adapted to its functions. (2mks)
Pointed/sharp for cutting flesh.
Has a long root to support it into the jaw bone.

3. The diagram below represents a transverse section through a plant organ.



a) From which plant organ was the section obtained. (1mk)
 - **Dicotyledonous root. (1mk)**

b) Give two reasons for your answer in (a) above (2ks)

- **Presence of root hairs.**
- **Presence of endodermis**
- **Xylem is star shaped at the centre while the phloem is in between the arms of the xylem.**

c) Name the parts labeled J K and L. (3mks)

J - epidermis

K- phloem

L- Xylem

d) State two functions of the part labeled M. (2mks)

Absorption of water

Absorption of mineral salts.

4. Explain how each of the following factors affects the rate of photosynthesis

i) Temperature (2mks)

Photosynthesis is an enzyme controlled reaction. Low temperatures inactivate enzymes rises enzymes are activated and rate of photosynthesis increases

ii) Chlorophyll concentration. (2mks)

Chlorophyll molecules traps light energy from the sun necessary for photosynthesis, low amount of chlorophyll molecules lowers the rate of photosynthesis.

5. Name the tissues in plants responsible for: (2mks)

a) Transport of water and mineral salts
xylem

b) Transport of carbohydrates

phloem

6. State one adaptation of xylem vessels to their functions . (1mk)

- **Lignified**
- **Has dead cells**

7. (a) Why are people with blood group O universal donors? (2mks)

Blood type O has no antigens and does not cause agglutination with other blood groups

(b) A person whose blood group is AB requires a blood transfusion. Name the blood groups of the donors. (2mks)

- **A, B, AB, O**

8. Name the organelles that performs the following functions in a cell (2mks)

Protein synthesis - ribosomes

Transport of cell secretions – lysosomes

9. State one use for each of the following apparatus in the study of living organisms. (2mks)

a) Pooter

For sucking small animals from rocks surfaces or bark of trees.

b) Pitfall trap

- **For catching crawling animals.**

- **Transport fluid conveyed in general body - Transport fluid conveyed in special tubules**
- Cavity**
19. Explain two protection functions of blood. (2mks)
- **Contains phagocytes that engulf and digest pathogens through phagocytosis.**
 - **Contains platelets whose role is blood clotting when vessels are injured.**
 - **Contains lymphocytes that produce anti-bodies that protect the body from infections**

