**NAME:………………………………………………………………ADM:………CLASS:…………**

**BIOLOGY**

**MID TERM 1 2020**

**FORM 2**

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

At the end of experiment

At start

1. 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**

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

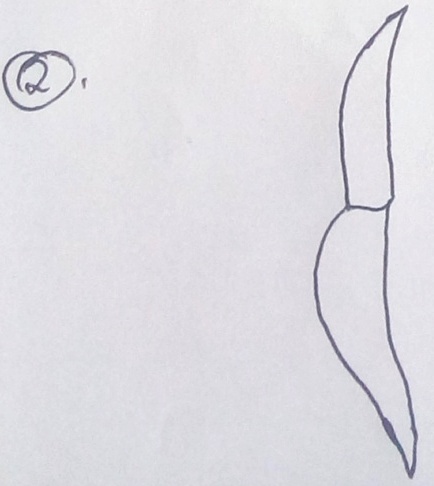
Cell wall

Cell membrane

cytoplasm

vacuole

1. The diagram below shows a human tooth.



1. Identify the tooth. (1mk)

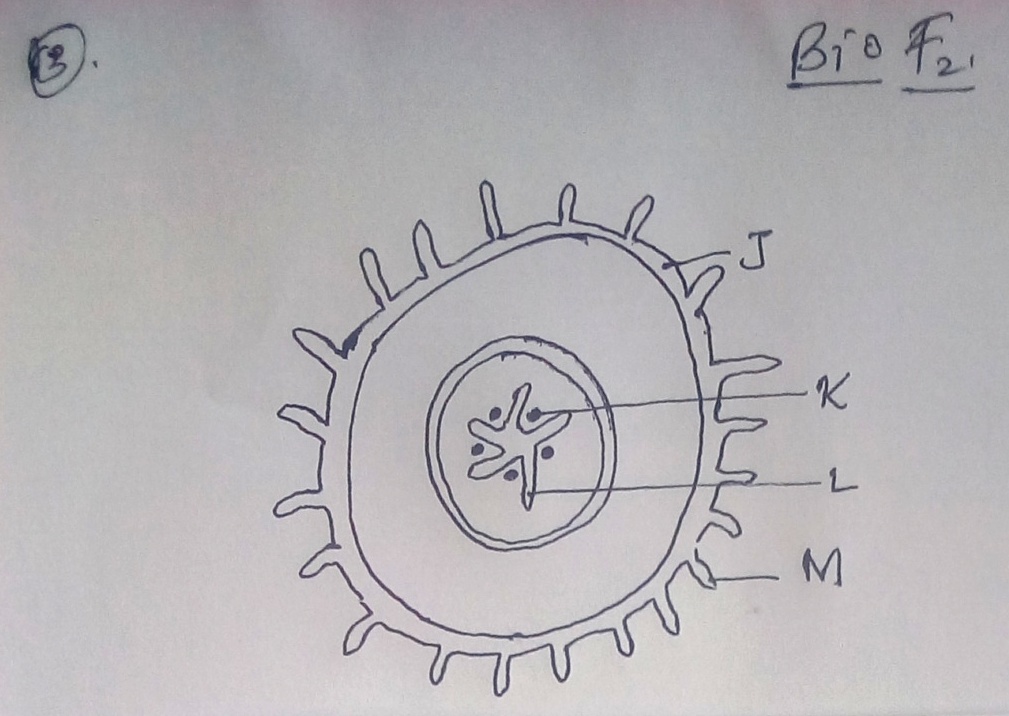
**Canine**

1. 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.**

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



1. From which plant organ was the section obtained. (1mk)

* **Dicotyledonous root. (1mk)**

1. 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.**

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

**J - epidermis**

**K- phloem**

**L- Xylem**

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

**Absorpation of water**

**Absorption of mineral salts.**

1. Explain how each of the following factors affects the rate of photosynthesis
2. Temperature (2mks)

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

1. Chlorophyll concentration. (2mks)

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

1. Name the tissues in plants responsible for: (2mks)
2. Transport of water and mineral salts

**xylem**

1. Transport of carbohydrates

**phloem**

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

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

1. (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**

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

**Protein synthesis - ribosomes**

**Transport of cell secretions – lysosomes**

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

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

1. Pitfall trap

* **For catching crawling animals.**

1. A ‘dolf’ is an offspring between a wolf and a dog. This animal is infertile. Give a reason for this. . (1mk)

* **Wolf and dog belong to different species.**

1. State the role of light in photosynthesis (2mks)

* **Provided energy required for splitting water molecules into hydrogen ions and oxtgen gas.**

1. Name a disease caused by lack of each of the following in human diet. (2mks)

* **Vitamin D – rickets, osteoporosis**
* **Iodine- goitre**

1. The following is the dental formula of a certain mammal.

I 0/3 C 0/1 pm 3/3, molar 3/3

1. State the likely mode of feeding for the mammal. (1mk)

* **Herbivorous**

1. Give a reason for your answer in (a) above. (1mk)

* **Lack incisors, canines on the upper jaw**

1. Explain why the rate of transpiration is reduced when humidity is high? (2mks)

* **When humidity is high the concentration of water vapour in the atmosphere is higher thus reducing the rate of transpiration**

1. Why are plants able to accumulate most of their waste products for long. (1mk)

* **The waste products one loss toxic**

1. State two ways by which acquired immune deficiency syndrome (AIDS) virus is transmitted. . (2mks)

* **Having unprotected sex with infected persons**
* **Sharing of sharp objects e.g needles**

1. State three structural differences between arteries and veins. (3mks)

* **Arteries veins**
* **Thick muscular walls thin less muscular walls**
* **Narrow lumen Wide lumen**
* **Elastic walls Less elastic walls**
* **No values except at the bases of Have values at regular intervals**

**pulmonary artery and aorta**

1. State three difference between open and closed circulatory systems. (3mks)

OPEN CLOSED

* **Fluid is in direct contact with tissues - blood is not in direct contact with tissues.**
* **Fluid flow under low pressure hence slow - Blood flow under high pressure hence faster**
* **Transport fluid conveyed in general body - Transport fluid conveyed in special tubules**

**Cavity**

1. Explain two protection functions of blood. (2mks)

* **Contains phagocytes that engulf and digest pathogens through photosynthesis.**
* **Contains platelets whose role is blood clotting when vessels are injured.**
* **Contains lymphocytes that produce anti-bodies that protect the body from infections**