

**BIOLOGY PAPER
FORM 2
TERM 3 2017
2017**

MARKING SCHEME

1.
 - (a) mitochondrion
 - (b) it is the site of energy production.
 - (c) Parts
 - M – Matrix
 - N – Cristae
2.
 - Transpiration pull
 - Root pressure
 - Cohesion and adhesion
3. Process by which a plant cell's cytoplasm shrinks and the cell membrane is pulled away from the cell wall.
4.
 - Photochemical splitting of water to provide hydrogen atoms.
 - Production of ATP needed for synthesis of carbohydrates in dark stage.
5.
 - (a) Premolar – has two roots, cusps and a broad surface.
 - (b)
 - Has ridges or cusps to increase the surface area for chewing/grinding.
 - Has broad surface to increase the surface area for chewing/grinding.
 - Has two roots for firm anchorage in the jaw.
6.

Tissues	Function
A Collenchyma	Provides support to the stem
B Sclerenchyma	Provides mechanical support for the plant.
C Parenchyma	For support and storage of food.
D Xylem	Transports water and dissolved mineral salts.
7.
 - (a) Contains lytic enzyme that destroys worn out cell organelles.
 - (b) Helps in packaging and transportation of glycoproteins.

- 8.
- Absorption of water, vitamins and mineral salts such as calcium and iron.
 - Secretion of mucus that holds the faecal matter together and lubricates the intestinal wall for smooth passage of faeces.
- 9.
- Absorption of water from the soil by root hairs.
 - Movement of water from root hair vacuoles to xylem.
 - Turgidity in plant cells to help support the plant.
 - Opening and closing of the stomata.
 - Feeding in insectivorous plants.
- 10.
- (a) Bidens
- (b) Pilosa
- 11.
- (a)
- X – retained the colour of iodine (brown) – CO_2 was absent.
- W – remained brown (iodine colour), no starch present.
- (b)
- To absorb carbon(IV)oxide.
- 12.
- i) The higher the surface area to volume ratio the faster the rate of diffusion.
- ii) An increase in temperature increases the rate of diffusion by increasing kinetic energy of molecules.
- 13.
- Reabsorption of sugars and some salts in the kidney.
 - Absorption of dissolve mineral salts from the soil by roots.
 - Absorption of digested food from the alimentary canal into blood stream.
 - Accumulation of substances into the body to offset osmotic imbalance in arid and saline environment.
- 14.
- Water would be drawn into amoeba cell by osmosis at a high rate.
 - Contractile vacuoles would form more frequently to discharge excess water.
15. Beriberi
16. open circulatory system is where the transport fluid is contained in the general body cavity(coelom) while closed circulatory system is where transporting fluid (blood) is conveyed in special tubes known as blood vessels.
- 17.
- (a) Photometer – used to measure the rate of transpiration.
- (b)

- i) The air bubble moves faster – on the mountain peak, the low atmospheric pressure increases the rate of transpiration.
 - ii) The air bubble moves slowly – the film of petroleum jelly blocks the stomata through which transpiration occurs.
- (c) To render the system airtight.

18.

- Serves to replace water lost through the leaves.
- Serves to cool the plant especially in hot environment.
- Helps in removal of excess water in aquatic plants.
- Responsible for turgor in plants.