

**BIOLOGY FORM 3**  
**PAPER 1**  
**TERM 3 2017**

**MARKING SCHEME**

1.i)animalia

ii)felis

iii) catus

2. (a) Incisor tooth

(2 mks)

(b) Chisel shaped for cutting;

3.(a) Anti diuretic hormone / Vasopressin

(b) Diabetes insipidus

4. Number of body parts.

- Number of legs

5(i) Temporary storage of food

(ii) Secretes digestive enzyme

(iii) Secretes mucus

(iv) Secretes Hcl

} - gastric juice  
- Endocrine function i.e. Gastrine hormone

6(a) (i)  $RQ = \frac{CO_2 \text{ Produced}}{CO_2 \text{ Produced}}$

$$= \frac{9}{9}$$

$$= 1$$

(ii) Carbohydrates

(iii) Cytoplasm-Regulation of body temperature

7.-Regulation of body pH

-Defence through white blood cells

-prevents excessive bleeding platelets

-Allows the dehiate underlying tissues heal rapidly.

8.-sharing of sharp objects with infected perform

-blood transfusion of infected blood

-infected mother to child (breast feeding)

10.-light

-temperature

-wind

-Atmospheric pressure

-humidity

22. (a) Provides energy

(b) RQ -Helps determine the type of substrate

-Helps determine the type of respiration

11(a) Xylem;

(b) Cross walls between successive vessel elements are performed, giving free passage of water from cell to cell;

-There is dissolution of cross walls within the vessel elements thus forming an open tube along the axis of the organ;

-Thick (cellulose ) / lignified wall / rings prevents collapse (under tension);

-Lack of long contents / hollow / empty allows free flow

- Wide lumen / cavity to ease flow / large volume;

- Stacked end to end / elongated forming a continuous tube. -

12.Small

intestines (in absorption of digested food)

Kidney (in selective re – absorption

13a)Manufacture of ribosomes;

b) encloses cell contents; regulate movement of materials in and out of the cell;

14.Transpiration is the loss of water vapour, while gutation is loss or exudation of liquid water through hydathodes

15.- Magnify the object further;

- Concentrates light onto the object;

- Controls amount of light illuminating the object;

16.a) Involuntary movement of food along the alimentary canal and relaxation of the circular and longitudinal muscles along the gut;

b) Rhythmic contraction

17 a)

b)

Arteries	Veins
- Thick muscular - No valves (except pulmonary artery and aorta at the base - Narrow (small) lumen	- Thin muscular walls - valves present;  - Wide lumen (large) lumen;

Arteriosclerosis; reject Artheroma

18. Transpiration pull;

Capillarity;

Cohesion and adhesive forces;

Root pressure; -

19 Not every soluble/not readily soluble therefore not easily transported to the site of respiration;

- A lot of oxygen is required to oxidize one gram of fat/liquid than one gram of glucose;

20a)Deamination;

b)-Removal of excess amino acids;

-Avaling of energy in the body;

-Formation of glycogen /fats for storage; (award any one)

21Is a diet that consists of all classes of food / carbohydrates, protein, lipids, water, mineral salts and vitamins; taken in their right proportions for a healthy body; (2marks)

(b) Roughage add bulk to the food hence facilitating peristalsis / offer grip to prevent constipation; (i)

22The larger the surface area to volume ratio, the faster the rate of diffusion; (1mark acc. Reverse)

(ii) Diffusion gradient; the higher the diffusion gradient (between two points) the faster the rate of diffusion; (1mark)

Temperature- increase in temperature increases the rate of diffusion; (1mark)

23 Root hair cell

-Palisade cell

- Parenchyma cell

Epidermal cell                      -Guard cell                      - Companion cell

24. – Stomata

- Lenticels
- Cuticles

25. Kingdom: Animalia. *Rej: Animal or if first letter is small letter*

Phylum: Arthropoda *rej. Anthropoda / Athropoda / Arthropod if first letter is small letter*

Class: Insecta *rej Insect or if first letter is small letter*

26. (a) Counter flow is a flow system in which blood and water (a fluid) flow in opposite directions within respiratory surfaces while parallel flow is a system in which blood and water (fluid) flow in the same direction within respiratory surfaces;

(b) Counter current flow; it increases efficiency in oxygenation of blood and maintains a steep concentration gradient;

27.i) prothrombin

ii) K

iii) calcium ion

28.i)

- Makes the skin and hair surface water proof.
- To protect the skin against infection by bacteria and viruses (it's a mild antiseptic)
- Makes the skin and hair soft and supple

ii) The structure (blood vessel) constricts // contracts (vasoconstricts) and lies deeper in the skin so as to reduce heat loss from the body through radiation

- 29 Living things will show characteristics like feeding, excretion, reproduction, gaseous exchange, movement, respiration; irritability; growth and development. (**Any two**)