**BIOLOGY FORM 3**

 **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) Diabetis insipidus

4. Number of body parts.

- Number of legs

5(i) Temporary storage of food

 (ii) Secretes digestive enzyme

 (iii) Secretes mucus - gastric juice

 (iv) Secretes Hcl - Endocrine function i.e. Gastrine hormone

6(a) (i) RQ = 

 = 

 = 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 tention;

-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 b) Rhythmic contraction and relaxation of the circular and longitudinal muscles along the gut;

17 a)

|  |  |
| --- | --- |
| 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; |

b) 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;

-Availing 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)***

1. 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

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