MARKING SCHEME BIOLOGY FORM 2 TERM 2 2024

1)

Diffusion	Osmosis
- Involves movement of particles of molecules of liquid or gas - It may be through a membrane or air. - Not affected by PH changes.	- Involves movement of solvent molecules - It takes place through a semi-permeable membrane. - Rate affected by pH changes.

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2). (a) RQ ratio of carbon dioxide produced to oxygen used during breakdown of a food substrate.

(b) $R.Q = \frac{CO_2 \text{ produced}}{O_2 \text{ used up}}$

$RQ = \frac{102}{145} = 0.7$

(c) fat/lipid

3) (i) Tracheoles

b) Adaptation of tracheoles

- Lack chitin and are thin walled to reduce distance of diffusion of gases.
- Have a liquid at the tip to dissolve the diffusing gases
- Highly branched/divided to increase surface area for diffusion of gases.
- They are in direct contact with tissue cells hence increasing rate of diffusion of gases.

4. Cell size = $\frac{\text{Diameter of field view x 1000}}{\text{No of cells}}$

$= \frac{6.5 \times 1000}{} = 540\mu m$

5. (i) Dicotyledonae

(ii) Vascular bundles arranged in a ring around the pith.

- Presence of cambium in vascular bundles.

(iii) Importance of vascular bundles

Xylem transport water and mineral salts to photosynthesing cells.

Phloem: transport manufactured food from leaves

Veins: Support the leaf to be upright for the maximum absorption of light for photosynthesis

6.

Dog	Rabbit
- Presence of canine - Has more teeth	- Absence of canines/presence of diastema - Has few teeth.

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7. Oxygen (gas y) dissolves into moisture layer and diffuses across the thin epithelium;(1) then across
the thin epithelium of capillary; (1) combines with haemoglobin in red blood cells to form oxyhaemoglobin; (1 mk

9. Carbaminohaemoglobin

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10. a) To increase surface area for enzymatic action. (1 mark)

b) Contain bacteria that produce cellulase enzyme to digest cellulose. (1 mark)

11. Lactic acid (1 mark

12.

(a)	Microbiology;
(b)	Genetics;

13.

(a)	Holds the eyepiece and revolving nosepiece;
(b)	Brings image into focus and magnifies **NB**: ***Must mention the 2 functions to earn a mark***

14.

(a)	Engulfing bacteria; Production of antibodies;
(b)	Pass between cells of capillary wall; by amoeboid movement and migrate into tissue fluid/affected tissue;

15.

(a)	Amino acids;
(b)	Condensation;
(c)	Peptide;
(d)	Ribosome ;

16.

	Diaphragm flattens; increasing volume but reducing pressure of thoracic cavity; leading to inhalation;;

18.

(a)	Oxygen
(b)	Chloroplast;

20.Have large air spaces for buoyancy.

21. –a)Regulation of body temperature.
b) Regulation of pH of fluids;

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22.a) Glycogen

b)

POLYSACCHARIDE	MONOSACCHARIDE
- Not sweet	- Sweet
- Insoluble in water	- Soluble in water
- Many monomers	- One monomer

(2mks)

23(i) Serves to replace water loss through the leaves;

1. Mineral salts and water are transported in the plant;
2. It serves to cool the plant;
3. Helps in removal of excess water especially in aquatic plant;
   It is responsible for larger in plants;

24. glycogen

25. dental carries , periodontal disease

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