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**ZERAKI ACHIEVERS EXAM
TERM3 -2021
BIOLOGY PAPER (MARKING SCHEME)
FORM ONE (1)
TIME 2 HOURS**

Name..... Adm No.....

School..... Class.....

Signature..... Date.....

- a) Lysosomes- Destroy old and worn out cells;
Destroy foreign bodies;

b) Golgi apparatus- packaging and transport of glycoprotein;
Secretes lysosomes;

c) Chloroplasts-photosynthesis ; (3mks)

2.a) X-Chloroplasts;
Y-Vacuole(s);

b) Move to upper part of the cell in order to receive maximum light for photosynthesis (in dimlight); (3mks)

4. Plant cells have cell wall; cell wall is rigid/cellulose cell wall is strong and rigid to withstand turgor pressure;
/ water is absorbed by osmosis; cells become turgid; cell wall creates inward pressure that prevent cell from bursting;

5. a) K-Enzyme;
L-Inhibitor; (2mks)
b) Compete for the active site of the enzyme; (1mk)

6. a) Split water molecules/photolysis;
Produce ATP; (2mks)
b) Glucose;

7. a) To hydrolyze/breakdown double sugars into simple sugars;
b) Neutralize the (unused) acid;
c) Condensation; (3mks)

8. a) Has alkaline salts which create alkaline media/neutralize acidic food from the stomach
Emulsification of fats into droplets;
b) As the substrate concentration decreases the rate of enzyme action decreases; Ac. the converse. (3mks)

9. i $\frac{0}{3}$ c $\frac{0}{3}$ pm $\frac{3}{3}$ m $\frac{3}{3}$ lower case letters (2mks)
demarcation included

10. Diffusion; (1mk)

11.a) In stomach there is acid medium/ and ptyalin only acts at slightly alkaline medium; (1mk)
b) High temperatures **above 40°C**; (1mk)
c)

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- Villi;
 - Microvilli;
 - Long
- (2mks)

12. a) i. Molar/ Premolar (1mk)

ii. Has two roots/ cusps/ Ridges (1mk)

b) Has nerve fibres that detect changes/ Has blood capillaries that supply Oxygen and nutrients/ remove metabolic wastes from the tooth cells

13. i, To catch / trap crawling animals

ii. Attract and trap small animals

(2mks)

14. Insulation

Shock absorber

Source of energy

Source of metabolic water

Structural compounds

(First two pts)

15 i.) Not underlined **separately**

Species name started with a capital letter/ upper case (2mks)

ii.) Universally accepted by scientists acc. Uniformity

Is a 'dead' language i.e lacks indigenous speakers

16. Optimum temperature

Optimum light intensity

Increase in CO₂ concentration

Increase in amount of water

(First two pts)

17. Diameter of one cell = Field of view Diameter

Number of cells

= 4mm

8

= 0.5 mm;

1mm = 1000 micrometers

0.5 mm = (0.5 x 1000);

1

= 500 micrometers;

18. i.) Enhance/ easy diffusion/ absorption of iodine solution

ii.) For the section/ cells not to dry up/ die/

Keep the section/cells alive/ Maintain the shape of cells/ section

iii.) Hold the specimen in position

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(3mks)

19. Absorption of mineral salts by plants **roots** from soil
 Absorption of soluble products of digestion in the gut
 Excretion of metabolic waste products through the skin/ kidney
 Accumulation of mineral in the body of marine organisms to offset osmotic imbalance (3mks)

20. i.) Carnivorous Rj. Carnivore

- ii.) Presence **pointed/ large** canines

Presence of carnassial teeth (2mks)

iii.) Incisor correctly labeled in the diagram. (1mk)

21. a.) Process by which green plants manufacture food from **Carbon (IV) oxide** and **water** in the presence of light (1mk)

b.) Palisade cell

Guard cells

Spongy mesophyll cells (3mks)

22. a.) Hypertonic (1mk)

b.) Crenation (1mk)

23. i.) Plasmolysis (1mk)

ii.) The plant cell lost water by **osmosis** since it was placed in a hypertonic solution causing the cell membrane to **detach** from the cell wall (3mks)

- 24 i.) Diffusion

ii.) Active transport (2mks)

25. Peptidase/ lipase/ lactase/ maltase/ sucrose (First 3pts)

26. Calcium ions/ Vitamin K

Sodium ions/ Potassium ions/ Chloride ions

Vitamin A

27. (a) The potato cup will be filled with solution;

(b) The solution in the potato cells is hypertonic to the water; hence water moves into the cell by

osmosis; this makes the solution in the neighbouring cells to be hypertonic to the outer cells; hence water moves from cell to cell until it eventually enters the potato cup;

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28. (a) To show that light is necessary for photosynthesis;
- b) i.) Only the uncovered areas turned blue- black with iodine;
- ii.) The part covered with aluminum foil did not receive light; and thus could not carry out photosynthesis ;