

OPENER EXAMINATION: TERM 2 2024 MARKING SCHEME BIOLOGY FORM THREE

Question 1

- a) i) Photosynthesis
 - ii) Oxygen
- b) Presence of light ;
 - Presence of chlorophyll;
 - Presence of suitable temperature ;
- c) Palisade cells;
 - Guard cells;
 - Spongy mesophyl;
 - Palisade mesophyl;

Question 2

In plants- Guard cells; root hair cells; palisade cells

In animals- sperm cell; white blood cells; Red blood cells; nerve cells.

Question 3

(i) pair of forceps';

(ii) picking up small stinging crawling animals;

Question 4

Mag. = $\underline{\text{image size}}$; $1\text{mm} = 100\mu\text{m}$ Actual size $40000 = \underline{1 \times 1000\mu\text{m}}$ Actual size Actual size = $\underline{1000} \ \mu\text{m}$; $= \frac{1}{40} = 0.015\mu\text{m}$ 40,000

Question 5

i) Hypertonic solution; *acc.* Highly concentrated solution (1mk)

(ii) Hypotonic solution; *acc*. More dilute solution;

Question 6

(i) Cellulose; (ii) GlycogenDownload this and other FREE revision materials from https://teacher.co.ke/notes

Question 7

- a) A Condensation; B Hydrolysis;
- b) Sucrose;
- c) . Glycosidic;

Question 8

- a) Villus
- b) Increases the surface area for absorption of digested food substances/materials

(1mk)

- c) A-microvilli
 - B Lacteal
 - D-Arteriole

Question 9

- i. Succus entericcus/intestinal juice
- ii. Polypetidase, sucrose, lactase, lipase,

Question 10

| Arteries | Veins |
|--------------------------|--------------------------|
| Narrow lumen | Wide lumen |
| • Thicker muscle layer | Thinner muscle layer |
| • No valves along length | Have valves along length |
| More elastic | • Less elastic. |

Question 11

| Aerobic | Anaerobic |
|--|---|
| Oxygen is used. Breakdown is complete to CO₂ and water. More energy released. Water molecules produced. Occurs in the cytoplasm and mitochondria. End products the same in plants and animals. (water, CO₂) | Oxygen not used Breakdown incomplete to ethanol or lactic acid. Less energy released Water molecules are not produced. Occurs in the cytoplasm. End products not the same in plants – ethanol in animals – lactic acid |

Question 12

- i. Artificial immunity
- ii. A, O
- iii. Activates the conversion of fibrinogen to fibrin

Question 13

a) Respiration is the process by which food substances are chemically broken down in all living Download this and other FREE revision materials from https://teacher.co.ke/notes cells to release energy, carbon (IV) Oxide and water.

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b) Anaerobic respiration

- c) Plants
- d) Lipids

Question 14

a) Increases the permeability of tubule and blood capillaries to water; regulates the reabsorption of water

b) Stimulates liver cells to convert glycogen into glucose

Question 15

- Gill rakers act as a screen preventing entry of food and other particles that might damage the delicate gill lamella;
- Gill bar for attachment of gill rakers and gill filament
- Gill filaments the surface on which gaseous exchange take place

Question 16

a) RQ - Vol of CO2 produced = 102 = 0.70;

Vol. of O2 used 145

b) Lipids;

Question 17

a) Amount of oxygen required to get rid of lactic acid that accumulates in the body tissues when oxygen available is lower than the demand

b) Energy/A.T.P/ Lactic acid

Question 18

- .a) i) Cytoplasm
- ii) Pyruvic acid
- b) Pyruvic acid is broken down; into ethanol and CO2

Question 19

b) -baking of breadbrewing industry

Question 20

A rat has a large surface area to volume ratio thus loses a lot of energy on form of heat therefore eats a lot to replace the lost energy;

Question 21

- cells must be provided with glucosenerated and other FREE revision materials from https://teacher.co.ke/notes -oxygen must be taken in to react with glucose

-favorable temperature should be maintained for efficient enzyme functioning

(1mk)

Question 22

asthma; bronchitis; whooping cough; tuberculosis

Question 23

The diagram below is that of a gill of a fish

a) Name the parts labeled A and B. (2mks)

A – Gill filament rej. Gill filamentsB – Gill bar rej. Gill bars

b) State the function of part labeled C.

Traps solid particles in water which would otherwise pass over the surfaces of gill filaments and damage them mechanically / physically.

c) Explain how structure labeled A is adapted to its function. (2mks)

(a) Moistened to facilitate diffusion of gases in solution form.

Large and extensive to provide a large surface area for gaseous exchange Question 24

| i) | Identify the organism shown above. | (1mk) | |
|--|--|--------|--|
| , | Paramecium. | | |
| ii) | State the kingdom of the above organism. | (1mk) | |
| | Protoctista | | |
| iii) | Name the structure labeled A. | (1mk) | |
| iv) | Oral groove. State the function of the part labeled B. | (1mk) | |
| Removes excess water from the animal body. | | | |
| | Question 25 | | |
| Define the following terms as used in ecology. (3r | | (3mks) | |
| i) | Carrying capacity. | | |

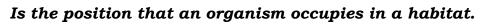
Maximum number of organisms an area can comfortably support without depletion of the available resources.

ii) Biosphere.

Is the part of earth and atmosphere inhabited by living organisms notes

iii) Ecological niche.







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