**FORM 2**

**BIOLOGY**

**MARKING SCHEME**

**TERM 3 2023 OPENER EXAMS**

1. Form vesicles that transport materials to other parts of the cell e.g proteins.
   - Transportation of secretions to the cell surface for secretion e.g. enzymes and mucus
   - They form Lysosomes

2. (a) Magnification of the object/ image

   *Acc: Magnification alone*

   (b) Regulates amount of light (falling on the object on microscope);

   *Acc: adjust/control amount of light*

3. To hold the specimen in place

   Protects the specimen from dehydration /drying up / from dust particles;

   Protects the objective lens

4. Drawing length in cm

   Object length in cm

   6cm /12 cm = x0.5

5. Temperature, surface area, thickness of membranes/distance that particles have to travel; diffusion/concentration gradient; size/density of molecules; medium of diffusion;surface area to volume ratio; ( Mark the first three).

6. (a) It is a phenomenon in plants where the rate of water loss to the atmosphere is more than that of absorption from the soil hence turgor in cells is reduced and the plant droops.

   (b) An increase in temperature activates respiratory enzymes, rate of respiration increases, hence energy needed for active transport rate increases; temperatures above 40°C denature respiratory enzymes, thus no respiration hence no energy and rate of active transport is low or stops.

7. - through osmosis, plants absorbs water from the soil using root hair cells.
   - control opening and closing of stomata
   - feeding in insectivorous plants.
   - leads to support in herbaceous plant/non woody stem/seedlings/leaves when cells are turgid.

8. (a) -Hypertonic solution

(b) - Volume of sugar solution increases in the (thistle funnel) distilled water in the beaker reduces;

- because the thistle / filter funnel gains distilled water by osmosis.

9. (a) (i) –Diffusion

ii) -Sea water contains a higher concentration of sodium ions than

(b) i) Iodide ions

ii) Require energy for uptake because to be moved along the concentration gradient.

10. (a) Photosynthesis

(b) Light (energy)

Chlorophyll

(c) Oxygen – used in respiration, oxidation

Released into the atmosphere

Glucose – used in respiration

Converted to sucrose or starch for storage

Used in formation of sturdiness allulose cell wall/ cytoplasm

11. Light reaction – Granum

Dark reaction - Stroma

12. (a) Photosynthesis

(b) Carbon (iv) Oxide/ Temp/ chlorophyll

13. Xylem vessels transport water and mineral salts from the roots to the leaves.

Phloem tissues transport manufactured food/soluble

Organic products of photosynthesis within the plant.

**14.** (a) Young people are actively / rapidly growing hence require more energy than older people

*NB:*

*Growth has to be mentioned*

(b) Manual workers require more energy than secretary workers

(c) Males are more muscular hence require more energy than females

15. Emulsification / breaking down of fats into (tiny) droplets creating alkaline medium for digestive enzymes/ neutralizing acidic chime (from the stomach)

16. a) I 2/2 c 1/1 . pm 2/2 m 3/3;

b) Dental carries

Periodontis; gingivitis / pyorrhoea

17. • forms a protective barrier to the stomach wall against corrosions by hydrochloric acid and protein digesting enzymes

•lubricates the chime

18. i) Starch

ii) Protein