

# OPENER EXAMINATION: TERM 2 2024

## FORM 2

### BIOLOGY MARKING SCHEME

1. a) (i) Coronary artery;  
(ii) Coronary thrombosis;  
(b) Generate higher/sufficient pressure with which blood is pumped to the body tissues;
2. (a) (i) Production of large amount of urine/diuresis;  
(ii) Diabetes insipidus;  
(b) Osmoregulation;
3. (a) X – sieve pore;  
Y – Cytoplasmic strands /filaments;  
(b) Has (numerous) mitochondria that provides energy for translocation;  
Provides food nutrient to the sieve element;
4. Glucose and fructose;  
Glucose and galactose;  
Glucose and glucose
- 5 (i) Help plants conserve water during the day allowing maximum gaseous exchange at night;  
(ii) Reduce amount of water loss;  
(iii) Windy conditions blow away water from leaf surface increasing transpiration rate;
6. (a) T – Xylem vessel;  
S – Endodermis;  
(b) Root hair cell;  
- Narrow and elongated to increase surface area for absorption of water and mineral salts.  
- Thin to reduce diffusion distance.
7. (a) A – Concentration of salt was isotonic; to that of the cytoplasm of the Red blood cells hence no change;  
(b) B – most cells haemolysed; due to hypotonic salt solution;
8. (i)  $(3 + 3 + 3 + 1 + 2 + 3) \times 2$   
 $= 15 \times 2 = 30$ ; teeth  
Or  $(I^{0/3}, C^{0/1}, PM^{3/2}, M^{3/3}) \times 2$ ; 30  
(ii) Herbivore  
(iii) Heterotrophic;
9. (a) - Regulation of body temperature.  
- Regulation of pH of fluids;  
- Defence against disease-causing micro-organism / pathogens; rej. diseases;  
- Prevent bleeding / enhancing clotting;  
(b) Coronary thrombosis / varicose veins / arteriosclorosis / Antheroma / cerebral thrombosis;

10. (a) Presence of antibodies; and white blood cells in blood that kill / destroy pathogens;  
 (b) Higher concentration of oxygen in pulmonary vein / higher concentration of carbon (IV) oxide in pulmonary artery;

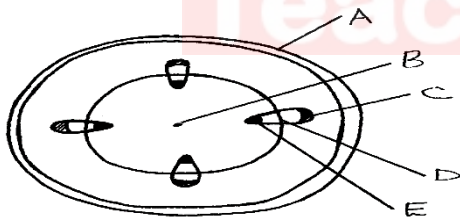
11. Haemocoel → Trachea → Ostia → Spiracles  
 ✓Naming  
 ✓For the arrows direction

12. (a) Osmosis;  
 (b) The visking tubing will become turgid / increase in volume / bulge / become big / expand;  
 (c) Water moves from beaker into visking tubing; by osmosis; the semi-permeable tubing; making tubing turgid, big, expand / bulge, increase in volume

13. Different structures absorb stain differently hence become more distinct/clearer, visible.  
 14. Rate of water absorption is more than water loss/transpiration and plant droops  
 15. a) Hydrolyse (breaks down disaccharide/Non reducing sugar to monosaccharide/reducing sugar  
 b) Neutralize the dilute hydrochloric acid

16. – absorption of water  
 - Packaging of indigestible food material to form faeces  
 - Secretion of mucus  
 Absorpti

17. The diagram below represents a transverse section of a young stem.



a) Name the parts labeled A, B and D (3mrks)

- i. Epidermis
- ii. Pith
- iii. Vascular cambium.

b) State the functions of the parts labelled C and E (2mrks)

- C- Transports manufactured food/ products of photosynthesis/ translocate food  
 E- Transports water and mineral salts

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- c. List three differences between the section above and the one that would be obtained from roots of the same plant.(3mrks)

Section above	Section from root
Xylem/ phloem form around cambium	Xylem star shaped and centrally placed
Pith at the centre	No pith
Roof hairs absent	Roof hair present
Epidermis has cuticle	Epidermis has no cuticle

18. Distinguish between guttation and transpiration (2mrks)

Transpiration is the loss of water vapour through stomata, while guttation is loss or exudation of liquid water through hydathodes

19. Other than transport, state one other function of xylem tissue in plants (1mrk)  
Support

20. Identify the part of the heart that initiates the heart beat (1mrk)

Sinoatrio node/pace maker

21. State the forms in which carbon (IV) oxide is transported in the blood

Hydrogen carbonate ( $\text{HCO}_3$ )

Carbonic acid;

22. Explain how the following adaptation reduce transpiration in xerophytes

(a) Sunken stomata (2mrks)

Sunken stomata form pits; in which water vapour accumulates reducing rate of transpiration

(b) Thick waxy cuticle (1mrk)

Water proof to reduce the rate of transpiration;

a. Name the:

23. (a) Material that strengthens xylem tissue (1mrk) Lignin;

(b) Tissue that is removed when the bark of a dicotyledonous plant is ringed (1mrk) Phloem;

24. Why is it dangerous to sleep in an enclosed room with a burning jiko(3mrks)?

Burning charcoal produces carbon (II) Oxide which combines with haemoglobin to form carboxyhaemoglobin that is stable/ does not dissociate; reducing efficiency of haemoglobin in carrying oxygen leading to death;  
Rej death alone