

END TERM 2 2025

BIOLOGY PAPER 1

MARKING SCHEME

1. (a) (Provide) site for protein synthesis;
(b) Site for packaging and transport of glycoproteins;
2. (a) T – Xylem vessel;
(b) S – Endodermis;
(b) Root hair cell;
- Narrow and elongated to increase surface for absorption of water and mineral salts.
- Thin to reduce diffusion
3. (a) A- Concentration of salt was isotonic; to that of the cytoplasm of Red blood cells hence no change;
(b) B – most cells haemolysed; due to hypotonic salt solution;
4. (i) Gives evidence on the type of organisms that existed along time ago; and shows morphological changes that have occurred;
(ii) Gives evidence based on morphological resemblance between embryo of different vertebrates species during early stages of development;
5. Magnification = $\frac{\text{drawing length}}{\text{Actual length}}$
Drawing length = 1000µm
Mg = x40000
Actual length = $\frac{\text{drawing length}}{mg}$
 $= \frac{100}{40000}$
 $= 0.025\mu\text{m}$
6. Have large air spaces for buoyancy.
7. (a) Glycoge;
(b) POLYACCHARIDE MONOSACCHARIDE
– Not sweet - Sweet
– Insoluble in water - Soluble in water
– Many monomers - One monomer
8. (a) Fungi(2mks)
(b) Cephalothorax(1mk)
(c) Rhizoids for anchorage; Thalloid or differentiated (2mks)
9. (a) Presences of antibodies; and white blood cells in blood that kill /destroy pathogens;
(b) High concentration of oxygen in pulmonary vein /higher concentration of carbon oxide in pulmonary artery;
10. Haemocoel → Trachea → Ostia → Spiracles
✓ Naming
✓ For the arrows direction
11. (a) Diffusion
(b) Starch changes into blue - black
(c) iodine molecular diffused from the beaker into the visking tubing (high to low)

- (d) Iodine molecules are small in size hence pass through the visking tubing which is a semi – permeable membrane.
12. (a) Mutation is spontaneous/sudden change in the (DNA) genetic make up of an organism.
 (b) Baldness;
 – Hairy pinna/hairy ears; (Rej.hairy nose)
 – Masculine x –tics/Duchenne muscular dystrophy;
13. High altitude; low concentration of oxygen; hence stimulates the body to produce more haemoglobin for better transport of oxygen increasing respiration ; that increases energy production required in the race.
14. (i) Density refers to the number of individuals per unit area;
 (ii) Dispersion is the spread of organisms in a habitat;
 (iii) Population growth refers to the rate of increase in numbers in of an organism;
15. (i) Microbiology study of microscopic organisms
 (ii) Genetics – study of inheritance and variations
16. (a) (i) Mitochondrion; rej plural
 (ii) Site for energy production; Site for respiration
 (b) Inner membrane folded to form cristae that increase surface area for attachment of respiratory enzymes.
 (c) Muscle cell/ kidney/sperm/meristematic
17. (i) Stored food is being broken down by enzymes; and used to produce energy for growth;
18. (ii) First foliage leaves have been formed that increases the rate of photosynthesis; and hence increase in growth;
19. (a) Process of transfer of pollen grains from the anthers to stigma of a flower of same species;
 (b) Protandry and protogyny/dichogamy
 Self – sterility/incompatibility
 Heterosty
 Dioecious (1st three)
20. Avoid indiscriminate sex;
 Avoid practices that expose one to risk of infections e.g sharing contaminated instruments; /drug abuse/wife inheritance
 Use of condoms
 Diagnosis (1st two)
21. (a) Outer membrane
 (b) B;
 (c) A;
22. (a) (i) Homeostasis;
 (ii) Excretion;
 (b) (i) Treatment of malaria;
 (ii) Used as meat tenderizer;
 (iii) Used as local anaesthesia;
23. (a) Type of reproduction where a group of cells arise from a single individual cell without fertilization;
 (b) The replacement of faulty gene with normal ones aimed at correcting genetic disorders;
24. (a) Secondary growth/secondary thickening;
 (b) Primary phloem;
 (c) Divide by mitosis to form secondary phloem and secondary xylem;
25. (a) Fungi; (1mk)

(b) (i) F - Bear spores; (2mks)

G - Anchor the fungi onto substratum / absorption of water and minerals;

(c) Chitin; (1mk)

26. (a) Gives the type of respiration;

Gives the type of substrate being respired

(b) (2mks)

R.Q = Volume of carbon (IV) oxide produced;

Volume of oxygen used

$$= \frac{20}{20}$$

$$= 1.0;$$

$$= 1.0;$$

