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 = $\frac{drawing\ length}{Actual\ length}$

   Drawing length = 1000µm

   Mg =x40000

   Actual length = $\frac{drawing\ length}{mg}$

   $= \frac{100}{40000}$

   =0.025µm

6. Have large air spaces for buoyancy.
7. (a)Glycoge;
   (b) POLYACCHARIDE
   – Not sweet
   – Insoluble in water
   –Many monomers

   MONOSACCHARIDE
   - Sweet
   - Soluble in water
   - 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 moleculars are small in size hence passes through the visking tubing 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/Ducheme 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/incompatility
    Heterosty
    Dioecius (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 anaesthecia;
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)

$$R.Q = \frac{\text{Volume of carbon (IV) oxide produced;}}{\text{Volume of oxygen used}}$$

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

$$= 1.0;$$