ZERAKI ACHIEVERS EXAM
TERM3 -2021
BIOLOGY PAPER (MARKING SCHEME)
FORM TWO (2)
TIME 2 HOURS

Name……Adm No……
School……Class……
Signature……Date……

1. a) Taxonomy; b) Anatomy;

2. Supply Oxygen needed for Respiration/Oxidation of food; Expel Carbon (IV) Oxide (whose accumulation in the body will be toxic);

3. Pitfall Trap; Trap small crawling animals;
Pooter; Suck small animals on tree barks/rocks;

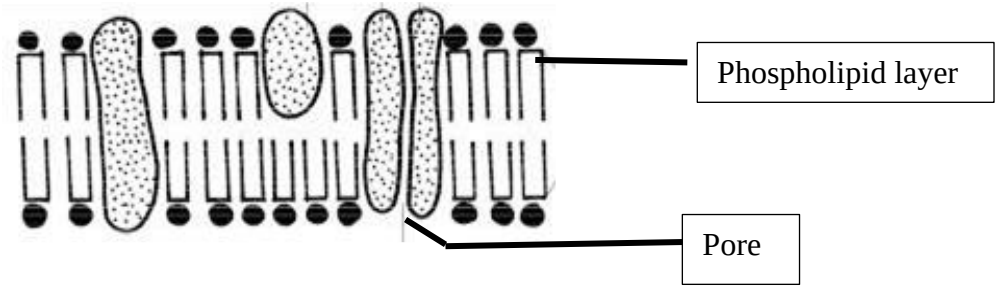
4. a) = Eye Piece Lens Magnification X Objective Lens Magnification;
REJ if the word 'Magnification' is omitted

b) **Magnification** = (object length/Image length)
Image length = Object length/Magnification)
= 45mm/0.5;
=90mm
But 10mm = 1cm
Thus 90mm = (90mm X 1cm)/10mm; NB: *Deny Mark if Units not shown here*
Image length = 9cm; NB: *Deny Mark if Units not shown here*

5. a) Carnivorous; b) Long curved canine; Has Carnassial tooth;

6. a) Increase Surface area to capture Oxygen molecules; Since higher altitudes have lower Oxygen Concentration;
b) More Physically Active than an adult; Still Undergoing rapid growth/cell division; Larger surface area thus loses more heat energy per unit area, thus needs more to compensate for the lost one;

7. a)



b) Semi-permeable/selectively permeable; polarized/has negative and positive charges; sensitive to changes in temperature/Denatured by temperature beyond 40^0C;

8. a) Movement of particles against concentration gradient by use of energy;
b)

Active Transport	Diffusion
Molecules Move against Concentration gradient/	Molecules Move along the Concentration Gradient;
Requires Energy/Is an Active Process	Energy Not Required/Is Passive;
Uses Carrier Molecules	Carrier Molecules Not Required;

9. a) Papain-Meat Tenderizer; b) Quinine-Treatment of Malaria; c) Colchicine-Anti-cancer therapy; Genetic Research;

10. a) Root; b) Star-shaped Xylem; Xylem is central;

11. a) Are Numerous; Biconcave Shape;
b) pH of blood not altered; faster/efficient (due to action of enzyme carbonic anhydrase);

12. i) Allograft-Graft/Organs from persons who are not genetically identical;
Isografts-Grafts from genetically identical twins; NB: Award at each point

ii) Guttation: Loss of Water in Liquid form/: Loss of Water in Liquid form through hydathodes
Transpiration: Loss of water vapour/Loss of water vapour via Stomata/Lenticels/Pneumatophore; NB: Award at each point

13. ai) Lysins: Digest Cell membranes or Cell wall of pathogens;
ii)Agglutinins: Clump pathogens together thus stops them from multiplication/ ease ingestion of pathogens by phagocytes;
b) Phagocytosis/Being Ingested/Engulfed (by Granulocytes/Monocytes);

14. a) Selective reabsorption of nutrients;
b) Long to increase surface area for reabsorption of nutrients; Highly coiled to slow down movement of renal fluids for efficient reabsorption; Numerous micro-villi to increase surface area for reabsorption of nutrients; Numerous mitochondria to supply enough energy for reabsorption of nutrients; thin inner lining to a offer a shorter distance for faster diffusion of nutrients into the blood stream; Mark 1st TWO

15. i) Nucleolus; ii) Golgi apparatus/Golgi bodies;

16.

ARTERY	VEIN
Narrow Lumen	Wider Lumen;
Thick Muscular and Elastic Wall	Thin Less Muscular and inelastic Wall;
Lack Valves along its length	Have Veins along its length;

17. a) Highly folded inner membrane/Has cristae to increase surface area for attachment of more respiratory enzymes;
b) Energy/Adenosine Triphosphate; Carbon (IV) Oxide;
c) Prevent Oxygen utilization thus increase efficiency in Oxygen transport;

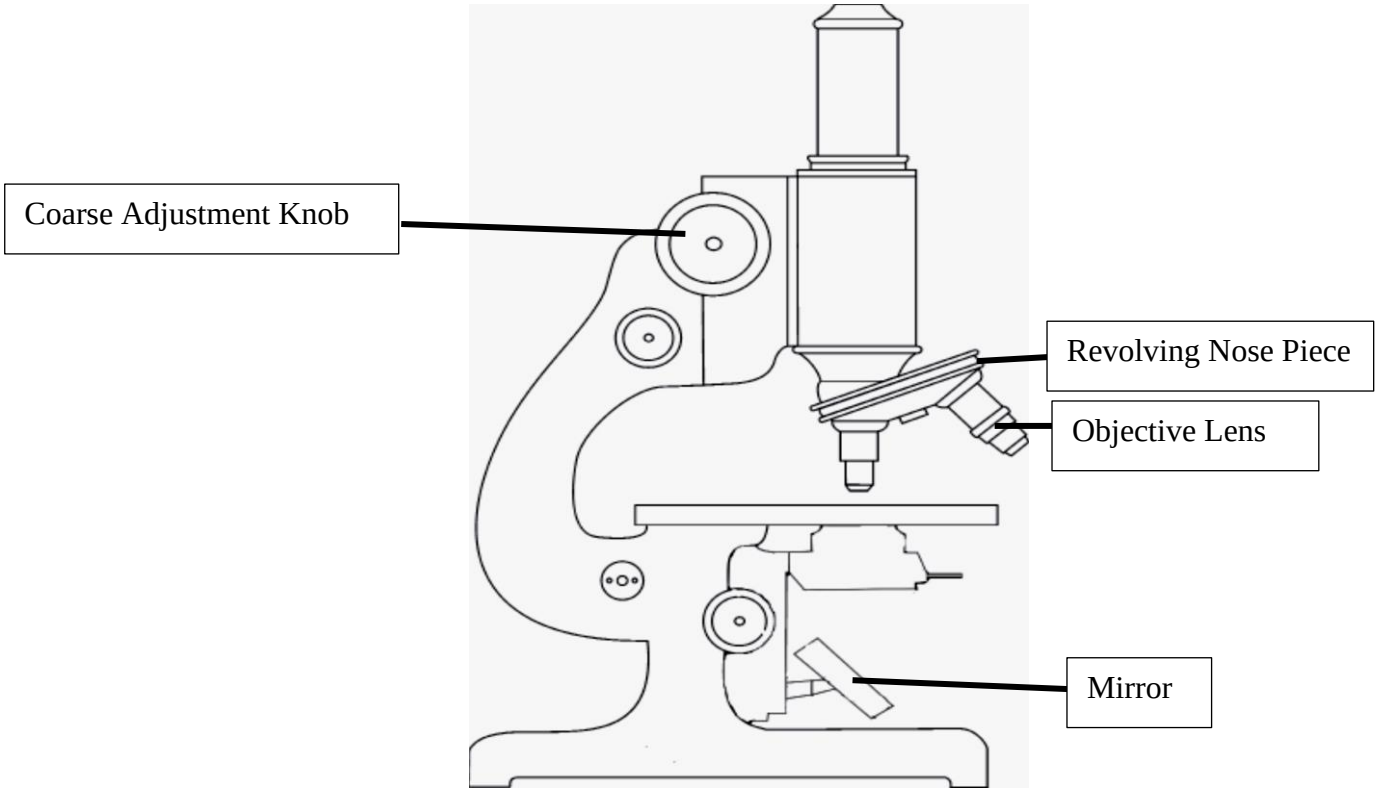
18. a) It is a Bio-catalyst/Catalyzes/Increases rate of metabolic reactions;
b) Optimum temperature; Optimum pH; Higher Enzyme Concentration; Higher Concentration of Enzyme co-factors/co-enzymes; Lack of/Lower concentration of Inhibitors; Lower Concentration of Substrate; Mark 1st 3

19. a) Total Number of Teeth = (2+2+6+6+4+4+4) = 28;

b) $i\ \frac{0}{2}$ $c\ \frac{1}{1}$ $pm\ \frac{2}{2}$ $m\ \frac{3}{3}$; REJ: Capital letters; Lack of Fractions

c) Herbivorous; Lack incisors in the upper jaw; REJ: Has Horny pad;

20.



b) Clean lenses with a soft lens tissue; Clean other parts using a soft cloth/tissue paper; Click the Low Power Objective Lens into Position; Store in a cabinet away from dust; Mark 1st 2

21. a) To find out if heat energy is released during respiration;

b) Increase in temperature recorded by the thermometer; since yeast beaks glucose through respiration to release heat;

c) Same set up but without yeast;

22. a) Lactase; b) Galactose;

23. a) 62mm;
    b) 6 (cells);
    c) Observed Diameter of Cell = Diameter of Field of View/Number of cells
    = 62mm/6cells
    = 10.33mm; NB: *Deny Mark if Units not shown here*
    Actual Diameter of 1 cell = Diameter of Observed cell/Total Magnification
    = 10.33mm/1000; NB: *Deny Mark if Units not shown here*
    = 0.0103mm; NB: *Deny Mark if Units not shown here*
    d) Cells are not linearly/uniformly arranged along the diameter of field of vies; Cells are of different Size; Cells are of different Shapes;

THE END

BE BLESSED