KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

KAPSABET HIGH SCHOOL
BIOLOGY
PAPER 1
MARKING SCHEME

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KAPSABET HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016
BIOLOGY
PAPER 1 /231/1
MARKING SCHEME

1. (a) (i) Site for protein synthesis; (1mk)
   (ii) Contain lytic enzymes which breakdown large organic molecules/ organelles/ entire worn out cell; (1mk)
   (b) Guard cell (1mk)
2. (i) Entamoeba hystolytica (1mk)
   (ii) Mycobacterium tuberculosis (1mk)
3. (a) Maintains a steep concentration gradient across the respiratory surface; ensuring maximum extraction of oxygen from water to the blood; (2mks
   (b) Thin epithelium for faster/ quick diffusion of gases;
   Have tracheole fluid/ moist surface to dissolve gases in solution before diffusing;
   Highly branched to increase surface area for gaseous exchange; (mark first two)
4. (i) Motor/ Efferent neurone
   (ii) Has a cell body on one end of the axon
   (iii) (Arrow to point to the direction of the terminal dendrite)
   (iv) Insulation;
5. (a) Adenosine diphosphate/ ADP
   (b) K – has two phosphate molecules
   ATP - has three phosphate molecules
   K – has less stored energy
   ATP – has more stored energy
   (c) Mitochondrion rej; Mitochondria
6. (a) Intermittent growth curve;
   (b) (i) Growth;
   (ii) Ecdysone/ mounting hormone;
   (c) Results in fertilization by conveying the male gametes to the female gamete;
7. Temperature;
   Oxygen concentration;
   Inhibitors – prevents ion absorption
   Soil PH – H^+ compete with cations Ca^{++}, K^+ in acidic conditions hence lowering their absorption.
   Anions e.g. CL^- compete with OH^- at high PH
8. Absorb lead from car exhaust fuses and pass it to animals and humans through the food chain
9. (a) Thigmotropism/ Haptotropism; (1mk)
   (b) Rheotaxis; (1mk)
   (c) Geotropism; (1mk)
10. (a) Deamination; (1mk)
    (b) Enzyme orginase; (1mk)
    (c) Helps in removal of excess amino acids which cannot be stored in the body (1mk)
11. (a) Excess glucose; converted in the liver and stored as glycogen;
    (b) After taking carbohydrate meal a lot of glucose is absorbed rising the level; All excess glucose was converted to glycogen causing rise in glucogen level;
12. (a) Regular alteration of a haploid reproductive phase/ gametophyte and a diploid vegetative phase sporophyte; (1mark)
    (b) Bryophyta/ Pteridopyta; (1mark)

13. Low altitude areas have favourable temperature for working of enzymes; faster metabolic process leading to faster growth; high concentration of Co_2 hence high rate of photosynthesis; High Co_2 concentration in low altitude leads to increased rate of respiration to generate energy for faster growth;

14. (a) Neutralise excess acid (Hcl);
    (b) X – Condensation;
    R – Sucrase/ invertase;

15. Exudation; Traspiration of excess water, guttation, deposition, diffusion; (mark 1st two)

16. (a) A condition where one male nucleus fuses with the egg cell to form a zygote, the other male nucleus fuses with the two polar nuclei to form a triploid nucleus;
    (b) Basal; parietal; axile; free central;central;

17. Resistance to diseases.
    Early maturity
    Adaptations to local conditions
    High yields
    Increased length of production

18. (a) Cowper's gland (bulbo urethral gland);
    Prostate gland; seminal vesicles; (2mks)
    (b) (i) Mitochondrial sheath has more mitochondria; (1mk
    (ii) Tail with axial filament; (1mk)

19. (i) Old sight/ prebyopia; (1mk)
    (ii) Cataract; (1mk)
    (iii) Myopia/ short sightedness; (1mk)

20. (a) $\frac{10}{35}\times 100 = 28.5\%$ i.e. $Tail\ power = \frac{Length\ from\ tail\ tip\ to\ anus}{Length\ from tail\ tip\ to\ mouth}\times 100$
    (b) To create a high propulsive force/ thrust

21. (i) Initiates the onset of sperm production;
    (ii) Causes interstitial cells to secrete androgens;

22.

	Endocrine system		**Nervous system**
(i)	Uses hormones to relay impulses	(i)	Uses electrical charges caused by chemical Concentration
(ii)	Hormones transmitted through cells; the blood	(ii)	Impulse transmitted through nerve
(iii)	Hormones reach all parts of the body	(iii)	Nerve impulses are transmitted through nerve cells to specific parts of the body;
(iv)	Effects are long lasting	(iv)	Effects are rapid and short lived;
(v)	Responses usually slow	(v)	Responses usually fast;

23. Struggle for existence – environmental pressure on the population in order to survive;
    Survival for the fittest – advantageous variations an individual possesses to make it survive; (2 mks)

24. Thinness of the villi wall; Membranous
    Numerous villi giving large surface area;
    Highly vascularised;

25. Tendons – structures which attach skeletal muscles to bone
    Ligament – structures that hold two bones together

26. (i) Control the amount of light entering the microscope;
    (ii) For magnification of specimens; (2mks)

27. (i) Water vapour accumulates in the sunken pits; creating a barrier of diffusion and evaporation of water; / reduces saturation deficit (2mks)

(ii) Reduces leaf surface area exposed to transpiration reducing water loss;

28.

R. B.C	**W. B. C**
Contains haemoglobin	Lacks haemoglobin
Non nucleated	Nucleated
Biconcave shape	Amoeboid