
**KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS**

**MARANDA HIGH SCHOOL
BIOLOGY
PAPER 1
MARKING SCHEME**

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MARANDA SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

PAPER 1

MARKING SCHEME

1. (a) Lysosomes : have lytic enzymes that destroy worn out cell organelles and cells.
- destroy pathogens; (any 1)
(b) Golgi apparatus: - package glycol-proteins;
- produce lysosomes;
- form secretory vesicles; (any 1)
- 2 - Stamens maturing before the pistils (Protandry)
- Pistils maturing before the stamens (Protogyny)
- Stamens shorter than stigma (heterostyly)
- Monoecism (1st 2)
- Self incompatibility/self-sterility
- Stamens hanging outside the corolla
- 3 (a) X - retained the colour of iodine/brown
W - retained the colour of iodine/brown
(b) absorb carbon (IV) oxide;
4. (a) The location of gene on sex chromosomes and are transmitted along with them.
(b) Colourblindness, Haemophilia, Hairy pinna, premature baldness, Duchene muscular dystrophy.
5. (a) - They contain haemoglobin which has a high affinity for oxygen.
- Their lack of nucleus increases the surface area of packaging of haemoglobin.
- Numerous to increase surface area for efficient transport of oxygen.
- Spherical and biconcave and glucose in shape to increase surface area for gaseous exchange.
- Small and elastic hence can squeeze into small capillaries.
6. (a) Bile emulsifies lipids/ makes the PH of the duodenum basic for enzymatic action/neutralizes acid from stomach.
(b) Saliva: Contains salivary amylase that digests starch (to maltose)
- Softens the food
- Lubricates food for easy swallowing (any 2)
7. - Water would be drawn into the amoeba cell by osmosis,
- Contractile vacuoles would form (more frequently) to discharge the excess water.
8. Analogous structures are modified to perform the same functions but have different embryonic origins; while homologous structures are those which have a common embryonic origin but have evolved to perform different functions (OWTTE).
9. (a) - used for movement/expelling unwanted particles.
- Trachea or tracheal epithelium.
- Oviduct (any two)
- Inner ear
10. Father $X^H Y$
Mother $X^H X^h$
11. (a) Animal
(b) Has hooks for attachment to animals.
(c) Prevents overcrowding of plants
- It enables colonization of new habitats (any one)
12. (a)(i) Negative photo taxis
(ii) Positive photo taxis
(b)(i) Avoid dehydration/escape from predators (anyone)
(ii) To absorb light for photosynthesis.
13. (a) Auxins /IAA
(b) Adrenal gland
(c) it stimulates kidney tubules to reabsorb sodium ions from the glomerula filtrate
14. (a) Deamination
(b) Urea is toxic (poisonous)in large quantities.

- (c) Young children need more nitrogen for protein synthesis during growth.
15. (a) A - phloem
C - pith
(b) It divides to form new cells
16. (a) M - matrix
N - Cristae
(b) Respiration/energy production
17. (a)(i) Blue – black
(ii) Remains brown/retains its colour
(b) Starch molecules are too big to pass through pores of visking tubing to reach iodine solution.
18. Collenchyma; sclerenchyma; xylem; tracheids; parenchyma;(any 3)
19. - Makes the plants float on water/buoyant
- Facilitates gaseous exchange.
20. - Moist to dissolve respiratory gases
- Thin epithelium for faster diffusion/shorter diffusion distance.
- Vascularised to transport respiratory gases.
- 21.(a) (i) Plasmodium sp (accept particular ones)
(ii) vibria chlorae
(b) - Wear protective clothes/shoes
- Avoid drinking/walking in contaminated water/boil water
- Destroy snails
- Treat patients with medicines
- Proper disposal of faeces or urine
22. (i) -Leads to increase in the height of a plant
(ii) -Results in the increase in diameter, width or girth of a plant.
23. - Has acrosome that contain lytic enzyme which weakens wall of ovum
- Has many mitochondria to provide energy for swimming; (any 1st three)
- Has tail for propulsion
- Has nucleus that fuses with ovum nucleus during fertilization.
24. (a) -Absorbs water and mineral salts ions
(b) -Allows carbon (iv) oxide in for photosynthesis/allows oxygen in for respiration/allows gaseous exchange.
(c) - Transports water for photosynthesis/transport mineral salt ions
25. (a) -Thoracic vertebra
(b) X - Neural spine
Y - Neural canal
26. (a) A - Nitrogen fixation by lightning
C - Absorption
E - Denitrification
(b) Rhizobium bacteria
27. - some are used as food
- Some cause diseases to both plants and animals
- Cause food spoilage
- Some decompose dead organic matter hence recycle nutrients any 3
- Manufacture of antibiotics
- Brewing alcohol and baking industry.
28. - Fossil record - paleontology
- Cell biology
- Geographical distribution 1st 3
- Comparative anatomy
- Comparative embryology
- Comparative serology
- Taxonomy.