KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

ALLIANCE GIRLS HIGH SCHOOL

BIOLOGY

PAPER 1

MARKING SCHEME

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

(i) pair of forceps';
(ii) picking up small crawling animals;

1 Mag. = image size ; 1mm = 100μm
Actual size

40000 = 1 x 1000μm
Actual size

Actual size = 1000 μm ; = $\frac{1}{40}$ = 0.015μm
40,000

2 (a) fungi
(b) cephalothorax
(c) Lack vascular transport system;
- Are thalloid/differentiated into simple leaf – like, stem-like structures
Any one

3 (a) Osmosis
(b) The cell contents are hypertonic to the surrounding medium; water enters the cell by Osmosis; and swells. The cell bursts/haemolyses; because of absence of cell wall.

4 (a) correct direction of arrows to earn a mark i.e from heart to haemocoels; from haemocoels to body parts and back to heart through Ostia
(b) ostium; rej. Ostia
(c) Transport; of food nutrients, mineral salts, water, hormones and metabolic wastes;
Regulation of body temperature;

5 (a) (i) 8;
(ii) 24;
(b) Pollen grain germinates forming pollen tube which grows down the style to the ovule;

6 X- Canine
Function – Tearing flesh
Y- Carnassial tooth
Function – slicing/shearing flesh;
- Crushing/cracking bones;
(any one)

7 – Immature embryo; rej. Premature
- Chemical inhibitors;
- Low concentration of growth hormones;
- Hard impermeable seed coat;
- Absence of certain wavelengths of light in some seeds;
- Freezing/extremely low temperatures;
(Any 3)

8 (a) (i) Alveolus;
(ii) – Moist to dissolve respiratory gases (Oxygen and Carbon (IV) Oxide;
- Thin epithelium for gases to take short distance in diffusions;
- Highly vascularised for transport of gases;
- Large surface area for efficient gaseous exchange;
(Any 2)

(b) Transpiration; /permit loss of water vapour from the leaf.

9 (a) (i) Anaerobic respiration;
(ii) Aerobic respiration;

(b) RQ = $\frac{\text{volume of Carbon (IV) Oxide produced}}{\text{volume of Oxygen consumer;}}$

$= \frac{6}{6} = 1$;

10 (a) Incomplete dominance;

(b) (i) inversion;
(ii) duplication;

(c) cyanide;
Colchicine;

11 Pituitary gland will be less stimulated leading to little/no ADH; produced hence reduced re absorption of water in the kidney tubules; this leads to more water lost in urine hence dilute urine; and O.P of blood raised back to normal;

12 (a) Fossil records
- Geographical distribution of organisms
- Comparative embryology
- Comparative anatomy
- Cell biology

Any 2

(b) Inheritance of acquired characteristics
-environment produces favourable characteristics

13 (a) Femur
(b) Ball and socket
(c) Articulation

14 (a) Medulla Oblongata

(b)

Simple reflex	Conditioned reflex
- single stimulus bring about response	Repeated stimulus bring about response
-independent of experience	Depend on experience
Sensory and motor components are same all times	-primary sensory component is replaced by secondary sensory component but motor remains unchanged.

15 (a) wild animals are specific in feeding i.e some feed on herbs/twigs while others on tall grass; cattle feed on grass alone;

(b) Rhizobium;

(c) Fixes free nitrogen to nitrates used by plants;

17. (a) Combines with CO_2 (ornithine cycle) to form urea;

(b) There is very little accumulations of toxic wastes since metabolic reactions are very Slow
- Reutilization of some of the wastes e.g CO_2 and O_2;
- Main substrate is carbohydrates giving less toxic wastes e.g. CO_2

18. (a) Grana

(b) photolysis/splitting water to avail H^+ for dark stage;

- ATP formation used in dark stage;

19. Stomatal transpiration;

Cuticular transpiration;
Lenticular transpiration;

20. Collenchyma
Sclerenchyma
Xylem vessels/tracheids

21. (a) Telophase
(b) middle lamella/cell plate
(c) Root tip;
Shoot tip; (A**ny one)**

22. 1) Malaria
2) E. histolytica
3) Taking contaminated food or water
4) Salmonela typhi

23. protection of inner delicate parts of the followers
Reduction of transpiration
Regulation of temperature
A way of obtaining some limited mineral nutrients
(any one)

24. (a) No formation/slow formation of larval cuticle/no moulting/insect remains in larval stage
(b) Intermoult phase