KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

FRIENDS SCHOOL KAMUSINGA

BIOLOGY

PAPER 1

MARKING SCHEME

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FRIENDS SCHOOL KAMUSINGA KCSE TRIAL AND PRACTICE EXAM 2016
BIOLOGY 233/1
MARKING SCHEME

1 Peptide bond;
2 (a) Arachnida;
(b) Cephallothorax;
3. Pteridophyta; Rej. Pteridophytes / ferns
4 (a) Maintain high blood pressure; (in arteries)
(b) Sustain Capillarity
5. – Crossing over / recombination;
- Independent assortment;
6. Light intensity decreases with depth;
Less or no photosynthesis hence less or no producers;
7. root tips;
Shoot tips;
8. (a) Physiological process. Anaerobic respiration;
(b) **Between R and S.**
Metabolic rate in muscles increases resulting to higher demand of oxygen; muscles starts respiring anaerobically forming lactic acids and hence the increase;
(c) **Between S and T.**
More oxygen supplied ; lactic acid oxidized anaerobically; lactic acid is converted into glucose / glycogen / lactic acid oxidized to carbon (iv) oxide; hence the decrease;
9. Insecta; Rej. Insects

10. (a) ulna
(b) – Radius;
-Humerus;
11. (a) (i) These are structures that have ceased to be functional over a long period of time and henced reduced in size;
(ii) -reduced limbs in python;
-Reduced wings in kiwi / emu / ostrich;
(b) Desease causing organisms mutate ; and become resistant
12. (a) the auxillary / lateral buds will sprout/ branches formed or form;
(b) Decapitation removes the hormone / IAA/ Auxins which is produced in the terminal bud / stem tip;
Absence / removal of the harmone auxins / IAA promotes branching / development of auxillary buds;
13.

DNA	RNA
- Is double stranded - Is made up of deoxybose sugar - Has base thiamine	- Is single stranded - Made up of ribose sugar. - Has base uracil

NB The comparison must be comparative.
14. -Waste products are mainly made from carbohydrates and hence not as harmful as proteanous materials;
- Waste products are formed slowly / little accumulation of wastes / plants are less active;
- Some waste products (such as O_2 or CO_2) are reused / recycled;

-Some waste products (such as resins and gums) are stored in insoluble form in dead tissue s / in non toxic forms in e.g flowers / seeds / leaves / fruits / backs.

-Some wastes can be removed by diffusion.

15. (a) Rate of photosynthesis increase as the CO_2 concentration increases up to optimum level (and vice versa)
(b) Rate of photosynthesis increases as light intensity increases up to optimum level;
(and vice versa)

16. Large cranial capacity ability to think and plan; opposable thumb ; bipedal erect posture etc. (Any three correct answer 3mks)

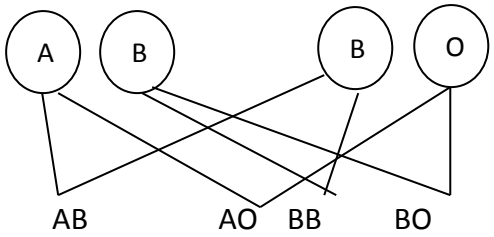
17. - Mixing of genetic material leading to hybrid vigour/ higher yields / heterosis;
- Resistance of diseases / increased chances of survival/ drought resistance / early maturity;
- Lead to new strains / varieties ; Rej species;

18. (a) Lacteal in the villi – Absorption of emulsified fats / oils.
(b) Goblets cells – secretes mucus;

19. (a) A – ciliated epithelium
(b) Nasal / trachea epithelium.

20. Parental phenotype woman Man
Genotype AB x BO
Grametes

Gametas

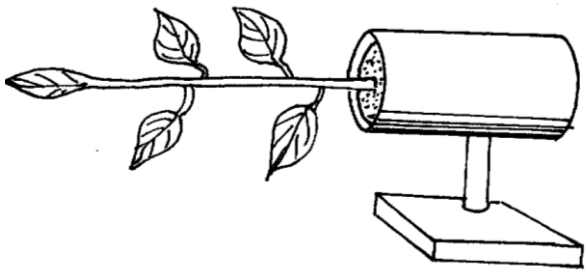


Probability ¼ or 25% / 0.25

21. (i) In plasma: Bicarbonates / hydrogen carbonate ions
(ii) In RBC = Haemoglobin ;

22. (a) X starch present
Y starch absent
(accept results not observations)
(b) X - acts as a control
Y – CO_2 absent absorbed by potassium hydroxide pellet
(Accept correct explanation)

23. (a) Klinostat.
(b) still horizontal with an increase in length



(c) Geotropism; / the shoot bending upwards and the root bending downwards.

24. Non disjunction :
- Failure of homologous chromosome to segregate during meiosis / anaphasei/ meiosis I of cell division.
- Failure of sister chromatid to segregate during meiosis / anaphaseII / meiosis II of cell

division;

(i) -Downs syndrome;
-Turners syndrome
-Klinefelters syndrome.
-Surners syndrome .
Accept . Mongolism for Downs syndrome
Accept. Turners syndrome for surnevs syndrome/ Gonadodysgenesis

(ii) Gene mutation
Albinism /; sickle cell anaemia; haemophilia colour blindness; chondrodytrophic dwarfsm/ Achondroplasia/ phenylketonuia/ Duchene muscular Dystrophy (DMD)

25. (a) $N = \frac{nx\ M}{m}$

$= \frac{374 \times 400}{80} = 1870$

(b) **Assumptions ;**
- There was even distribution of crabs.
- No movement in and out of the lagoon / no migration
- There was random re-distribution of the crabs after the first capture.

(c) Capture mark release recapture / capture recapture / capture release recaptures;

26. Provide energy required for splitting water molecules / autolysis / photolesis;

27. When they can interbreed naturally and produce a fertile offspring / viable offsprings;

28. Facilitates / causes / stimulate the liver cells to convert excess glucose into glycogen.
- Opens up body cells for efficient utilization of blood sugar.

29. (a) X – trophic hormone.
Y – Ecdysone hormone

(b) Retains juvenile characteristics
Inhibits moulting / ecdysis;
Prevents metamorphosis.

(c) Promotes ecdysis / moulting.
Facilitate change of larval stage to adult stage.

30. Increased vascularization for more blood supply;
Increased thickening (endometrium and myometrium) to act as cushion to prevent the foetus from shock

31. 1mm = 1000µm
Diameter of field of views = 3µm
3mm x 1000 = 3000mm
Size of one cell = $\frac{\text{diameter of field of of view}}{\text{No. of cells}}$

$= \frac{3000}{20} = 150\mu m$

Rej. Wrong units

32. (a) osmosis;

(b) Water moved from the cells of the potato into the sugar solution by osmosis; cells are hypotonic to sugar solution; more water is drawn from the adjascent cells of potato; drawing it from the beaker this continues until sugar solution increase