
KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

KABARAK HIGH SCHOOL
BIOLOGY
PAPER 1
MARKING SCHEME

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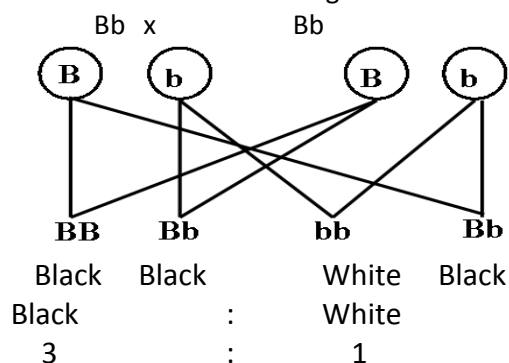
KABARAK HIGH SCHOOL KCSE TRIAL AND PRACTICE EXAM 2016

BIOLOGY

PAPER 1 /231/1

MARKING SCHEME

1. a) Active transport
b) Energy expenditure
2. a) Fine adjustment knob
b) Eye piece lens magnification time x objective lens magnification
3. a) Gill
b) - Highly vascularized to facilitate transport of respiratory gases.
- Thin to reduce diffusion distance hence faster rate of diffusion.
- Numerous to increase surface area for absorption of respiratory gases
4. a) Supply carbon (IV) oxide
b) To prevent change of composition of gases/ experiment result by respiring microbes in the soil / to prevent evaporation of soil water into the jar.
5. Water vapour accumulates in the depression of the stomata, lowering the water vapour concentration gradient, leading to lower rate of transpiration.
6. - Defence against diseases
- Clotting
- Temperature regulation / distribution of heat.
7. Has villi and micro villi to increase S.A for absorption.
8. - Folded inner membrane to increase S.A for respiration
- Matrix has respiratory enzymes to catalize respiratory reactions
9. - Lignified to provide mechanical strength / support
- Narrow lumen for capillarity
- Lack organelles to provide free movement of water and mineral salts
- Has bordered pits to allow lateral movement of water and mineral salts.
10. - Blood flows rapidly under pressure in arteries while in veins it flows slowly under low pressure.
- Transport oxygenated blood except pulmonary artery while vein transport deoxygenated blood except pulmonary vein
11. This is the oxygen required to get rid of acids that accumulates in the body tissues; when supply of oxygen is less than the demand.
12. Secrete sebum; which keeps hair and the epidermis flexible and waterproof; sebum contains antiseptic substances for protection against bacteria.
13. - Insulin
- Glucagon
14. a) Humerus
b) Y – deltoid ridge
c) Hinge joint
15. a) A – Dendrite
B – Transmits impulse
C – Cytoplasm
D – Insulates the axon to confine impulse
16. a) An alternative form of a gene



17. a) Medulla Oblongata
b) Cerebrum
18. a) Fused head and thorax in arthropods
b) Organisms whose nuclei are bound by nuclei membrane
19. A – Trifoliolate
B – Pinnate acc. Digitate
C – Pinnate
D – Bipinnate
20. a) Sweep neet
b) Total population = $\frac{\text{first capture} \times \text{second capture}}{\text{marked recapture}}$
= $\frac{400 \times 200}{80}$
= 1000 grasshoppers
21. a) To minimize stomata exposure to environmental factors
b) To reduce the surface area over which transpiration occurs.
22. The inside of the nerve fibre becomes positively charged while the outside becomes negatively charged;
The sodium pump temporarily ceases causing an influx by diffusion of Na^+ / membrane depolarization;
23. Planktons take up the metallic industrial water; this nutrient is passed to the fish that feed on planktons; man feeds on fish and obtain these metallic wastes
24. a) Vibrio cholerae
b) - Has two hosts to ensure it has a ready host for survival;
- Lays many eggs to increase chances of survival
- Eggs have protective shell to survive harsh environmental condition
- Has thick elastic cuticle to protect it against digestive enzyme of the host
- Has tissues tolerant to low oxygen concentration to survive in the gut / respire anaerobically.
- Has muscular pharynx to suck digested food from host digestive intestine.
25. One male nuclei fuses with egg cell to form a zygote; the other male nuclei fuses with the polar nuclei to form a triploid endosperm.
26. a) - Chorion
- Allantois
- Annion
b) Chorion
27. - Allowing more time for embryo to mature
- Provide environmental factors such as oxygen, water and suitable temperature
- Increase growth hormones cytokinins / gibberellins
- Provision of required light wavelengths
- Scarification / weakening of testa / boiling / burning
28. a) Juvenile hormone
b) Corpora allata (accept corpus allatum)
29. a) Metaphase I
b) - Nuclei membrane has disappeared
- Homologous chromosomes are at the spindle equator
- 30.

Collenchyma	Sclerenchyma
1. Walls are thickened with cellulose	1. Walls are lignified
2. Has living protoplasm / active	2. Do not have protoplasm / inactive