Name……. **Index No**…….

School…….. **Sign**…….

Date…….

231/1
BIOLOGY
(THEORY)
PAPER 1
JULY / AUGUST – 2012
TIME: 2 HOURS

KISII SOUTH DISTRICT JOINT EVALUATION -2012

Kenya Certificate of Secondary Education (K.C.S.E)

231/1
BIOLOGY
(THEORY)
PAPER 1
JULY / AUGUST – 2012
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your name and Index Number in the spaces provided above.
- Sign and write date of examination in the spaces provided above.
- Answer **ALL** questions in the spaces provided.

FOR EXAMINER'S USE ONLY.

Question	Maximum score	Candidate sscore
1 - 25	80	

This paper consists of 10 Printed pages. Candidates should check the question paper to ensure that all the Papers are printed as indicated and no questions are missing.

1. a) Name the cell organelle which forms spindle fibres during cell division. (1mk)

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b) Other than the function given in (a) above, state one other function of the organelle. (1mk)

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2. Name the diseases caused by the following parasites.

i. Salmonella, typhi (1mk)

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ii. Entamoeba histolytica (1mk)

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3. a) Name the part of a chloroplast where the following proceses occur. (2mks)

i. Photolysis

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ii. Carbon (iv) oxide fixation.

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b) State how the part named in a (i) is suited to its function. (1mk)

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4. a) State three pieces of evidence which suggest that organic evolution is ongoing. (3mks)

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b) Giving examples explain what you understand by the following terms as used in evolution. (4mks)

i. Homologous structures

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ii. Analogous structure

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5. a) Give the genetic term used to describe the numbers of chromosomes resulting from

i. Meiosis (lmk)

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ii. Non-disjunction (lmk)

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b) Recessive trait is only expressed phenotypically when an organism is in _____condition. (lmk)

c) Who postitulated the theory that acquired characteristics are inherited? (lmk)

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6. Name two classes of animals that have a cephalothorax. (2mks)

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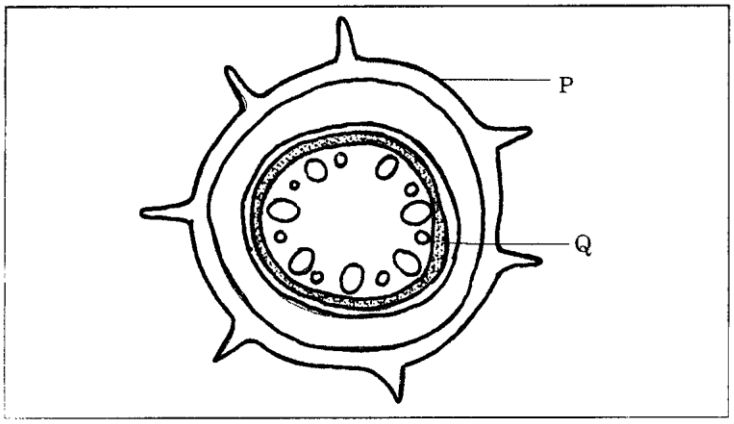
7. The diagram below represents a section through a plant part.



a) (i) Name the part of the plant from which the section was obtained. (lmk)

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ii. Give a reason for your answer in a(i) above. (I mk)

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b) On the diagram, label X to indicate the part which would be stained if the plant was left to stand in coloured waters for 30 minutes before the section was made. (lmk)

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c) State the function of the part labeled Q. (lmk)

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8. Give one similarity and one difference between water and wind dispersed seeds. (2mks)

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9. (a) Name the parts of a mammalian ear which carry out the following functions.

i) Balance and posture. (lmk)

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ii) Hearing. (lmk)

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(b) State the importance of presence of glands in auditory canal. (lmk)

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10. (a) State the function of co-factors in cell metabolism. (Imk)

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(b) Give one example of a metallic co-factor. (lmk)

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I I. A form IV student was found having the following symptoms

- Bleeding of gums
- Poor healing of wounds.

(a) What deficiency disease was the student likely to be suffering from? (1mk)

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(c) Suggest the kind of food to be given to rectify the condition. (lmk)

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12. Define the following ecological terms:

(a) Niche. (lmk)

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(b) Ecosystem. (lmk)

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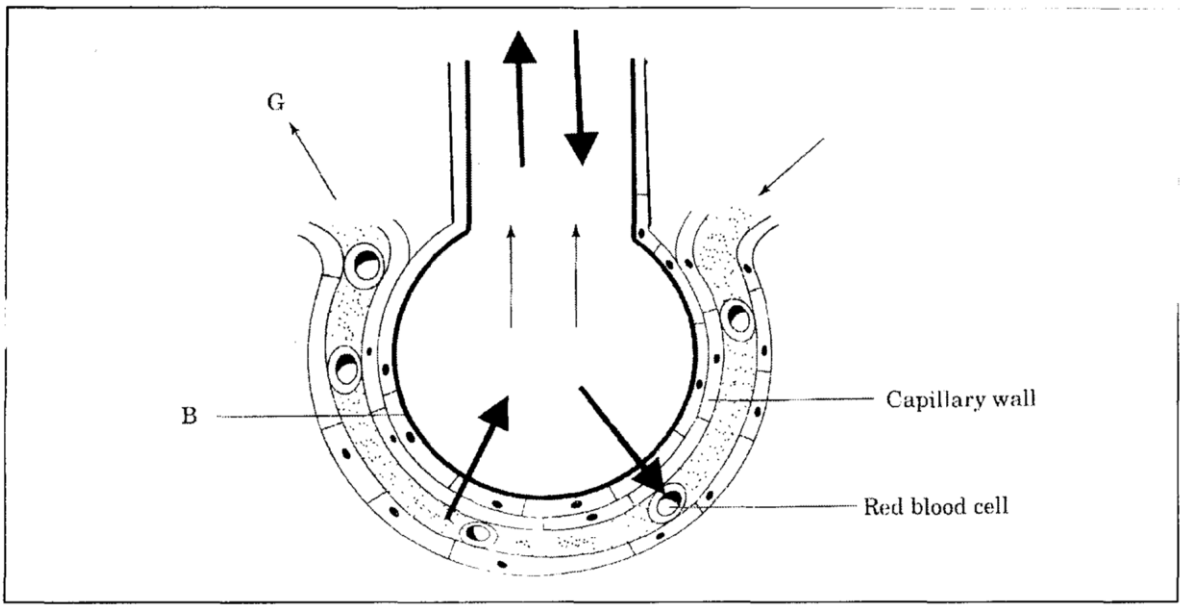
13. The diagram illustrates gaseous exchange in alveolus.



(a) Name the feature labeled B. (lmk)

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(b) Which blood vessel receives blood leaving at G? (lmk)

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(c) (i) How is the capillary wall suited for gaseous exchange? (lmk)

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(ii) Name the process by which gases move in and out of red blood cells. (lmk)

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14. For each of the following insect hormones, identify the site of secretion and state the function it serves. (4mks)

(a) Ecdysone;

Site of secretion

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Function

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(b) Juvenile hormone:

Site of secretion

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Function

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15. (a) State three differences between light microscope and electron microscope. (3mks)

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(c) State two advantages of using low power magnification over high power magnification when viewing specimen under a light microscope. (2mks)

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16. Name the disease characterized by

(a) Glycosuria. (lmk)

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(b) Diuresis. (lmk)

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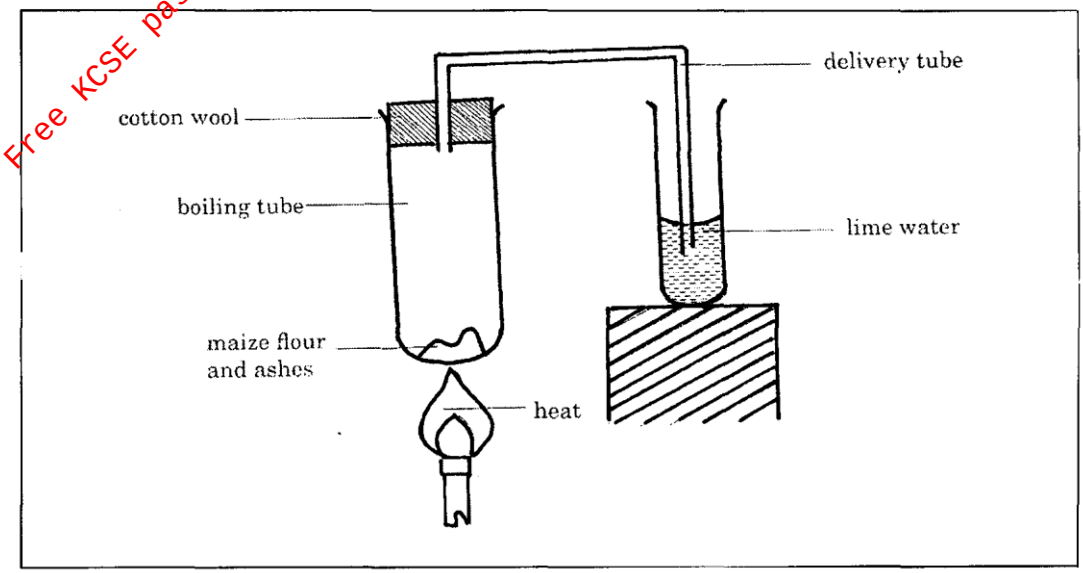
17. The diagram below show a set-up to illustrate phenomenon.



(a) State the aim of the experiment. (lmk)

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(b) (i) Identify one error in the set up. (lmk)

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(ii) State the expected results if the set up was corrected. (lmk)

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(c) What was the use of ash in the experiment? (1mk)

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18. State three ways by which human skin protects body tissues. (3mks)

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19. (a) Why is blood group AB described as universal recipient? (2mks)

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(b) Suggest why blood does not clot in blood vessels of a healthy person. (lmk)

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20. (a) State why the placenta is considered as an endocrine gland. (lmk)

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(b) Describe how the embryo in human is protected during pregnancy. (2mks)

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21. State three effects of dumping untreated sewage into a river. (3mks)

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22. (a) State why people who sweat a lot tend to eat salty food. (lmk)

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(b) Explain the effect of salty food on urine production in a person. (3mks)

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23. (a) A person touches a hot object and suddenly withdraws the hand. Using arrows, show how the impulse that leads to withdrawal of the hand travels between the neurons in a reflex arc.(lmk)

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(b) (i) Name the response shown when free swimming algae move towards optimum light intensity. (lmk)

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(ii) State the biological importance of response shown by algae. (lmk)

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24. (a) Name the plant excretory product which is used for:

i. Treatment of malaria. (lmk)

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ii. As a beverage. (lmk)

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(b) Explain why lactic acid is not considered as an excretory product though it's toxic to tissues. (lmk)

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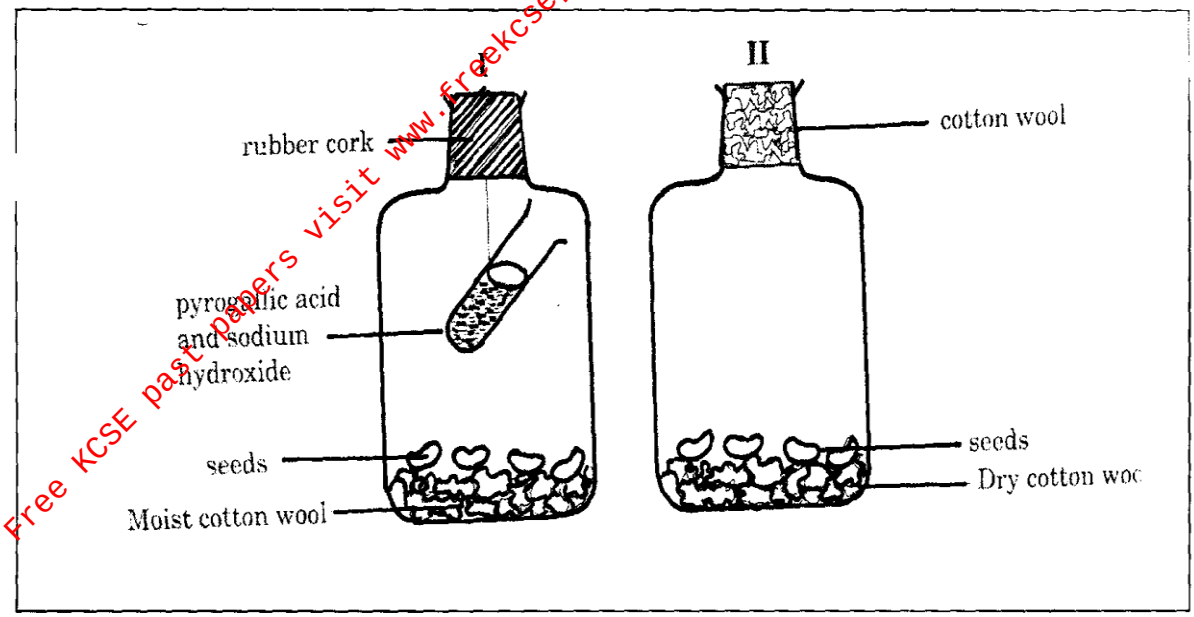
25. Experiment set ups I and II were used to investigate conditions required in germination. The seeds in the two set ups did not germinate.



(a) Explain why?

i. Seeds in set up I did not germinate. (2mks)

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ii. Cotton wool was placed at the mouth of the flask in set up II. (lmk)

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(b) Name the condition which prevented germination in set up II. (1 mk)

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