Name…… Index No……/…….

School…… Date ……..…

Candidate's Signature……

231/1
BIOLOGY
Paper 1
(THEORY)
July / August, 2012
Time: 2 Hours

TESO SOUTH DISTRICT JOINT EVALUATION TEST - 2012

Kenya Certificate of Secondary Education – K.C.S.E

231/1
BIOLOGY
Paper 1
(THEORY)
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INSTRUCTIONS TO CANDIDATES

- Write your name, school and index number in the spaces provided at the top of this page. Sign for and write the date of the examination in the spaces provided above.
- Answer ALL questions in the spaces provided in the question paper.
- Additional pages must not be inserted.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 22	80	
TOTAL SCORE		

This paper consists of 12 printed pages.
Candidates should check the question paper to ascertain that all pages are printed as indicated and that no question is missing

1. Name the element present in all protein molecules but absent in carbohydrates. (1 mk)

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2. Name a vitamin and mineral ion involved in blood clotting process: (2 mks)

Vitamin:-

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Mineral ion:-

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3. Name the organ in humans where the following materials formed:- (2 mks)

(i) Urea:

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……

(ii) Urine:

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4. The figure below shows a structure of a tooth:

(a) Identify the tooth: - (1 mk)

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(b) State how the tooth named in (a) is modified to perform its function:- (1 mk)

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5. Explain how each of the following serve as evidence for evidence for evolution:- (2 mks)

(i) Fossil records:-

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(ii) Comparative embryology:-

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6. Differentiate between dry dehiscent and dry indehiscent fruits. (2 mks)

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7. What is the role of the following parts of the human brain:-

(i) Cerebellum: - (2 mks)

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(ii) Hypothalamus:- (2 mks)

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8. The diagram below represents bones obtained from the forelimb of a mammal

(a) Name the bone labeled A: - (1 mk)

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(b) Which type of joint is formed at point B? (1 mk)

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(c) Identify the bone that articulates with bone A at the proximal end: - (1 mk)

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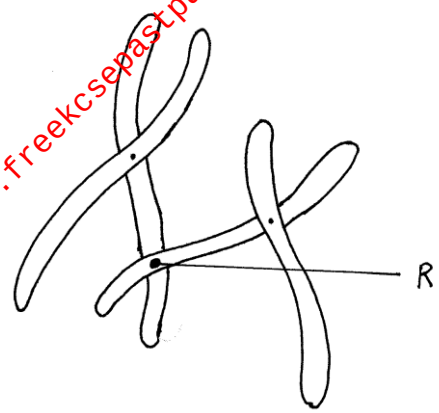
9. The diagram below represents a stage of cell division:-



(a) Identify the type and stage of cell division :- (2 mks)

Type of cell division:-

……

……

Stage of cell division:-

……

……

(b) What is the significance of the process at point R. (1 mk)

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10. Name a disorder in humans caused by:-

(i) Gene mutation :- (1 mk)

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(ii) Chromosome Mutations :- (1 mk)

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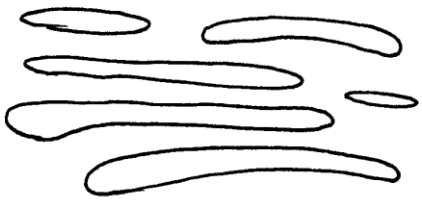
11. The figure below shows two organelles:-



(a) Identify the organelle :- (1 mk)

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(b) State two functions of the above organelle :- (2 mks)

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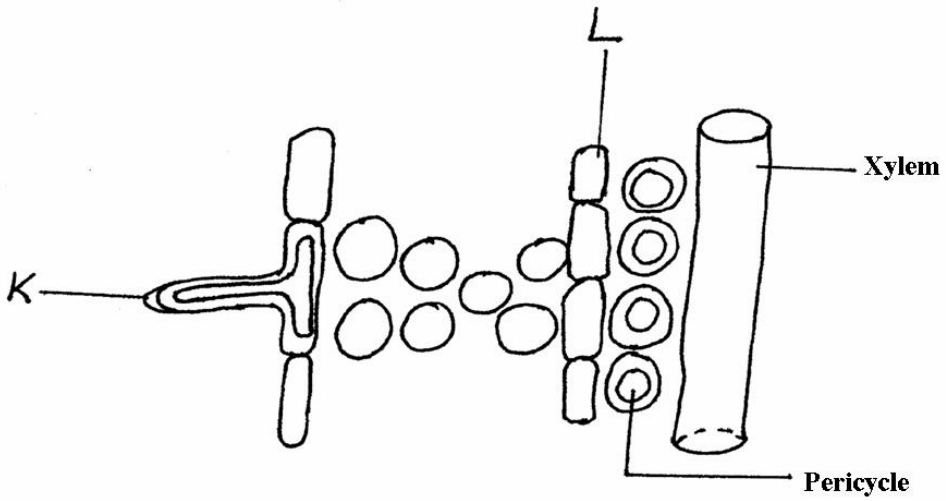
12. The diagram below shows part of a longitudinal section of a root: -



(a) Identify cells K and L :- (2 mks)

K

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……

L

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(b) State two adaptations of Cell K to its functions :- (2 mks)

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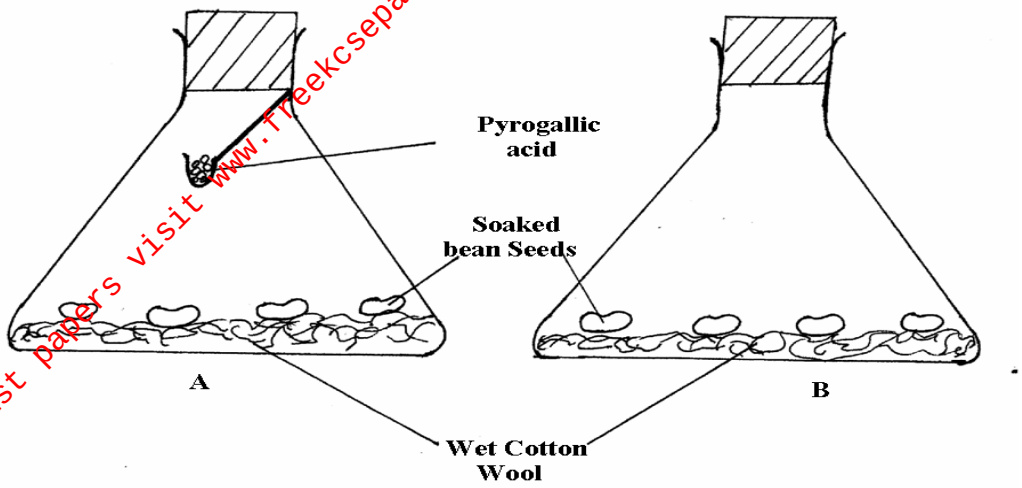
13. Science club members designed an experiment as shown below: Examine it:-



The se –up was kept at room temperature for one week:-

(a) What was the aim of the experiment? (1 mk)

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(b) What observation was made after one week? (1 mk)

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(c) Why were Soaked Seeds used in the experiment instead of dry seeds :- (2 mks)

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14. The table below shows the estimated number of organisms in a lake :-

Organism	Biomass
K	800 g
L	5000g
M	40 g
N	1200g

(a) Identify a producer in the lake:- (1 mk)

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(b) Explain why organism N has a higher biomass than organism K (2 mks)

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15. Define each of the following terminologies as used in biology :- (2 mks)

(i) Ecology:-

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(ii) Anatomy:-

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16. (a) State two characteristics of Meristematic cells. (2 mks)

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(b) Name the tissue responsible for Secondary thickening in plants:- (1 mk)

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17. State the role of each of the following features found in the human respiration system :- (2 mks)

(i) Goblet cells:-

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(ii) Rings of cartilage:-

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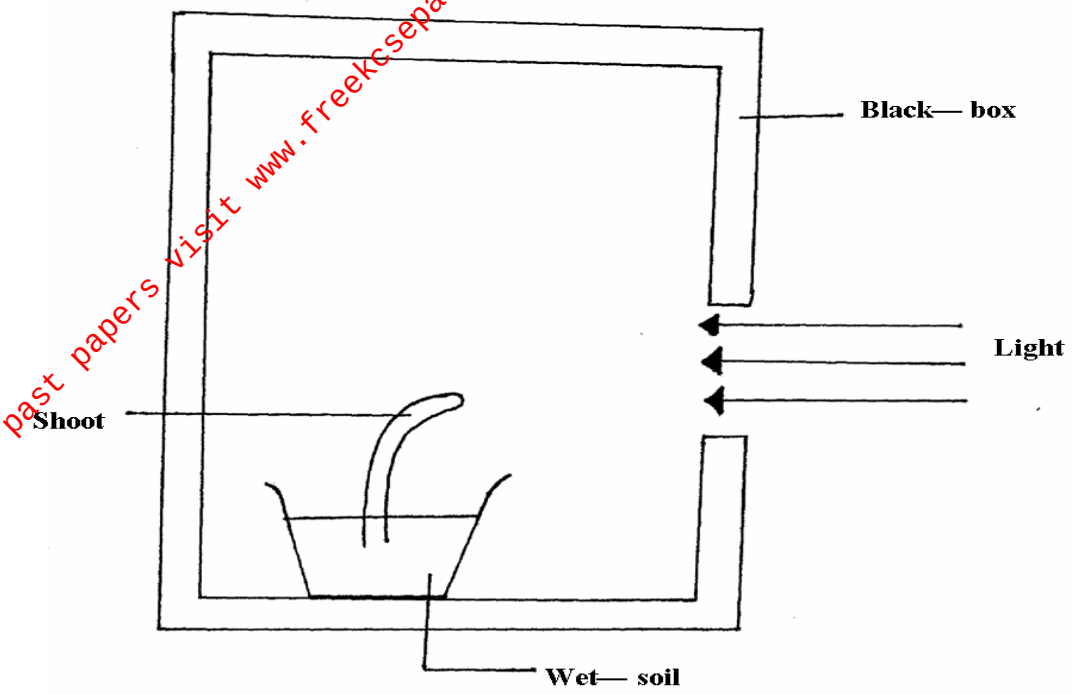
18. A response exhibited by a plant shoot is illustrated below:-



(a) Name the response:-

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(b) Explain how the response named in (a) above occurs. (2 mks)

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19. (a) Name the hormone secreted in the human body when one takes in a large amount of water:- (1 mk)

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(b) Which disease results from inadequate production of the hormone named in (a) above? (1 mk)

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20. Give two structural features that can be used to separate a housefly, a millipede, and a tick into their respective classes. (2 mks)

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21. Name two sites for gaseous exchange in submerged aquatic plants:- (2 mks)

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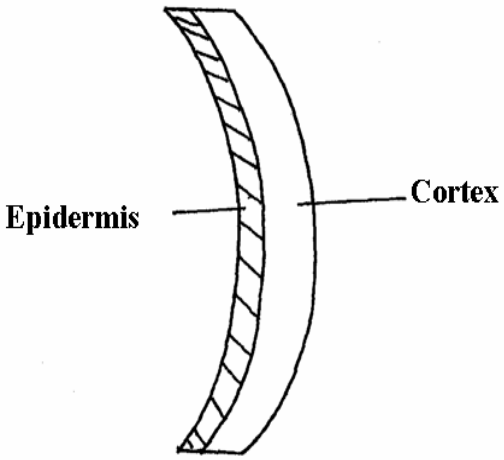
22. A straight piece of tradescantia system of length 4 cm was split lengthwise and then placed in a solution for 30 Minutes. The appearance after 30 minutes was as shown in the figure below:-



(a) Identify the type of solution in which the stem was placed:- (1 mk)

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(b) Account for the appearance of the stem after 30 minutes. (3 mks)

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23. The equation below shows a reaction that occurs in plants.

$$6CO_2 + 12\,H^+ \longrightarrow C_6H_{12}O_6 + 3O_2$$

(a) Identify the process. (1 mk)

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(b) In which part of the chloroplast do the processes represented by the above reaction occur? (1 mk)

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24. (a) Give two advantages of metamorphosis in insects ;- (2 mks)

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(b) Name the hormone responsible for metamorphosis in insects :- (1 mk)

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25. State three main functions of the stomach in human beings:- (3 mks)

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26. State the role of each of the following hormones in human reproduction:-

(i) Exytocin (2 mks)

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(ii) Lutenising Hormone. (2 mks)

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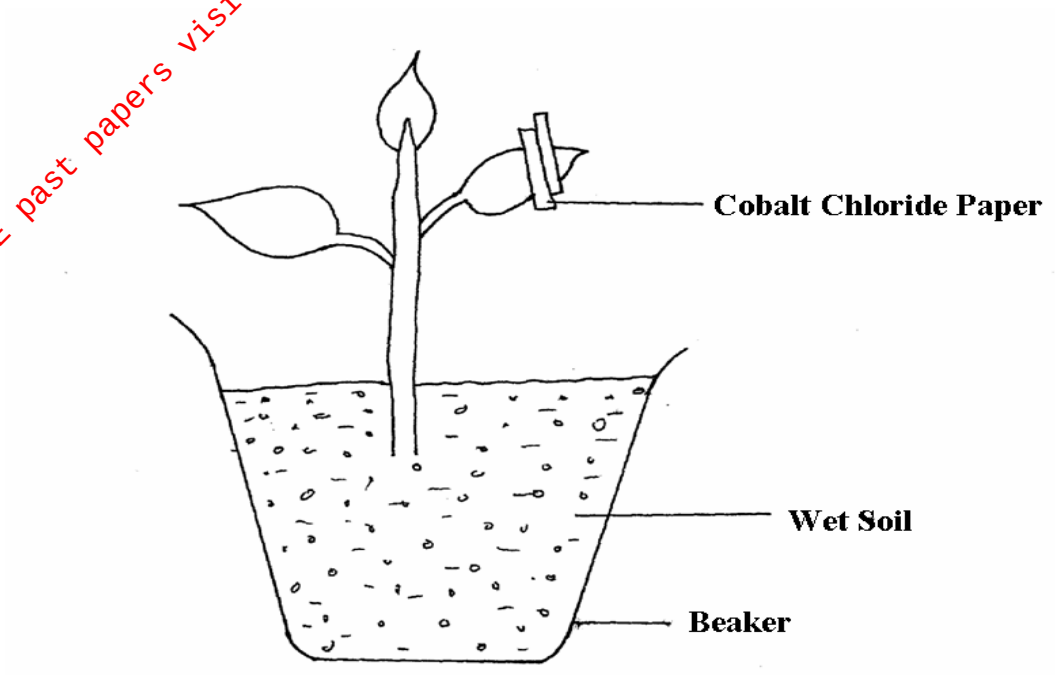
27. A student set – up an experiment shown below to investigate a physiological process in plants:-



After 1 hour, the Cobalt Chloride paper changed to Pink.

(a) What process was being investigated? (1 mk)

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(b) The cobalt chloride turned pink faster on the upper side than the lower side. Explain why:- (2 mks)

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(c) Suggest the likely habitat of the plants:- (1 mk)

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28. It was found that during germination of bean seeds, 9.2 cm^3 of carbon IV Oxide was produced while 9.0 cm^3 of oxygen was used up.

(a) (i) Calculate the respiratory quotient of the reaction:- (2 mks)

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(ii) Identify the substrate being met abolished:- (1 mk)

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(b) In which part of the cell does glycolysis occur? (1 mk)

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29. (a) Define Homeostasis:- (1 mk)

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(b) Name three processes in the human body in which homeostasis is involved. (3 mks)

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END