NAME: ……. **INDEX NO: …….**

SCHOOL: …… **CANDIDATE'S SIGNATURE: ……**

DATE : ……

231/3
BIOLOGY
PAPER 3
(PRACTICAL)
JULY / AUGUST 2014
TIME: 1¾ HOURS

NANDI NORTH SUB-COUNTY JOINT EVALUATION 2014

Kenya Certificate of Secondary Education (K.C.S.E.)
BIOLOGY
PAPER 3
TIME: 1¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(i) *Write your **Name,** **Index Number** and **School** in the spaces provided.*

(ii) ***Sign** and write the **Date** of Examination in the spaces provided.*

(iii) *Answer all the questions in the spaces provided.*

(iv) *You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*

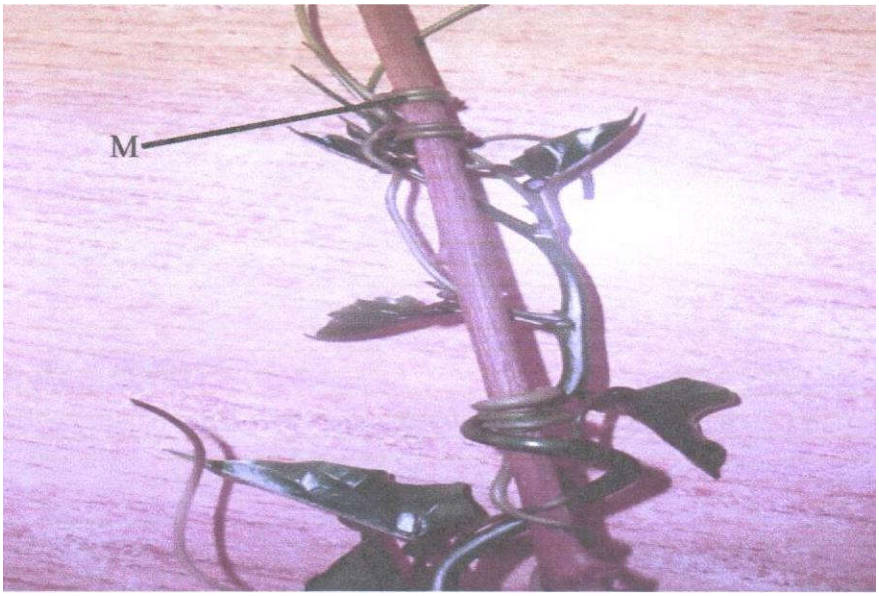
FOR EXAMINER'S USE ONLY

QUESTION	MAX. SCORE	CANDIDATE'S SCORE
1	14	
2	17	
3	09	
TOTAL	**40**	

SECTION A (40 MARKS)

Answer all questions in this section in the spaces provided.

1. (a) Examine the photograph **below** carefully and answer the questions that follow.



(i) **What** name is given to the coiled part labeled **M** found on the photograph? (1mk)

……

(ii) **Name** the type of response shown in the photograph. (1mk)

……

(iii) **Name** the stimulus responsible for the response named in (ii) above. (1mk)

……

(iv) **Explain** the mechanism of the response. (3mks)

……

……

……

(v) **State** the biological significance of the response described in (iv) above to the survival of the specimen. (2mks)

……

……

(b) **Photograph F** illustrates the observations made two weeks after the plant was trimmed.

(i) Name the phenomenon that was experienced by the plant before it was trimmed. (1mk)

……...

(ii) Account for the observation made in the shoot after the practice. (3mks)

……

……

……

……

(iii) Explain the application of the practice in agriculture. (2mks)

……

……

……

2. You are provided with solution L and Laboratory Reagents. Use it to carry out experiments as follows:

(i) Take the filter paper and carefully fold it twice through the middle. Open it up to make a funnel. Put it in a plastic funnel. Place the set up in 100ml beaker.

(ii) Take 15mls of solution **L** add 5 drops of dilute hydrochloric acid (HCL).

(a) Record your observations. (1mk)

……

(b) Where in the body is HCL found and what is its importance in the body? (1mk)

……

……

(iii) Using the set up, filter solution **L** into the 100ml beaker. Remove from the filter paper all the materials on it and place them in a Petri dish using the spatula. Dry the filter paper over flame care being taken not to burn it.

(a) Record your observations. (1mk)

……

(b) What conclusion do you make on the observation? (1mk)

……

……

(c) What name is given to this test? (1mk)

……

(iv) Use the provided reagents to carry out food tests on the filtrate and residue by filling in the table below.

FILTRATE

FOOD BEING TESTED	PROCEDURE	OBSERVATION	CONCLUSION

RESIDUE

FOOD BEING TESTED	PROCEDURE	OBSERVATION	CONCLUSION

Briefly explain what happened if there are any difference between results of filtrate and residue.

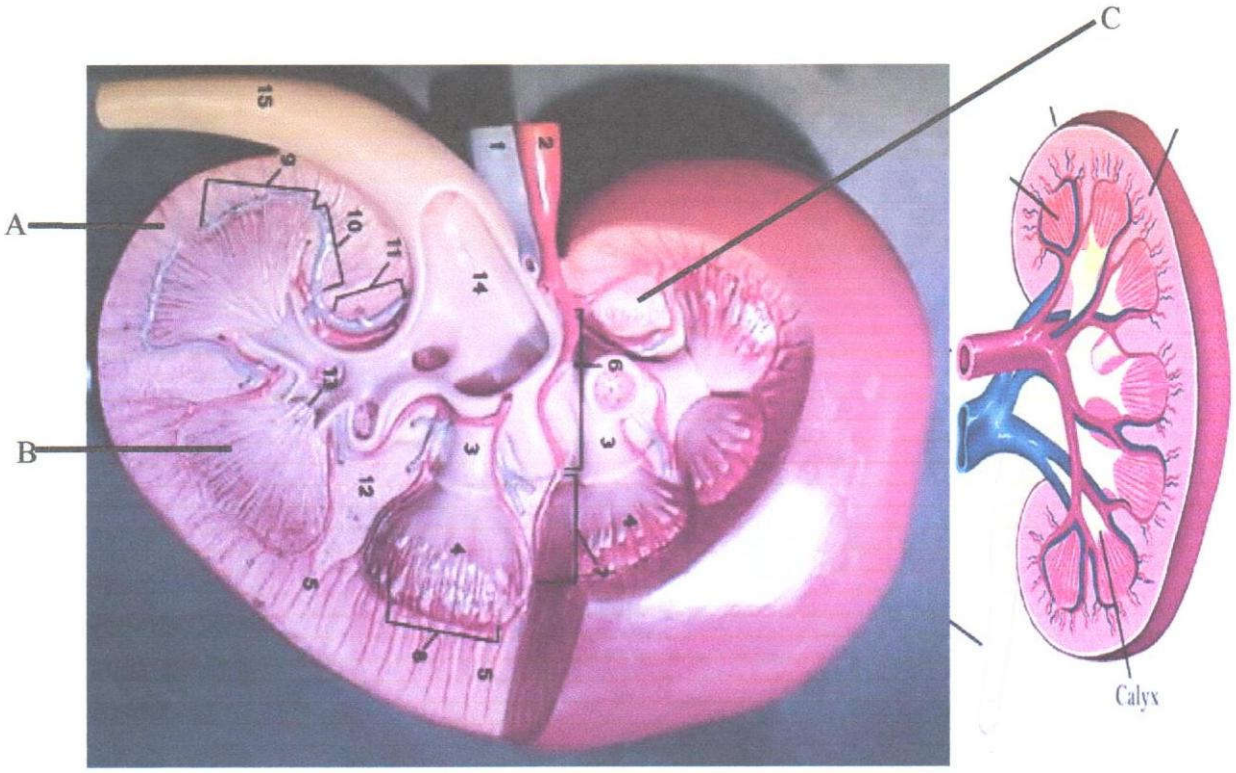
……

……

……

……

3. Below is a section through a mammalian organ.



(i) Identify the section. (1mk)

……...

(ii) Name the parts labeled 1, 2 and 15. (3mks)

1:……

2:……

15:……..

(iii) State **two** functions of the photographed specimen. (2mks)

……

……

(iv) Indicate **on** the photograph where the **Glomerulus**, and **Distal Convoluted tubule** are located? (2mks)

(v) What are the differences between the organ in a kangaroo rat and tilapia? (2mks)

……

……

……..

NANDI NORTH SUB-COUNTY JOINT EVALUATION 2014
231/3 – BIOLOGY PAPER 3 - MARKING SCHEME

1. (a) (i) Tendril; Rej. wrong spellings. Accept plural. (1mk)
(ii) Positive Thigmotropism / Positive Haptotropism; Rj. wrong spellings;
(iii) Contact; Rj. Touch
(iv) Due to contact; the auxins / IAA moved away from the surface of contact / accumulated on the surface away from contact; where they caused faster growth / cell elongation hence curling / coiling (around a support);
(v) - Has tendril to provide support; (by coiling around firm support) / to reach for light.
- Allow flowers to be exposed to pollinating agents.
- Facilitates exposure of seeds and fruits to dispersal agents.

(b) (i) Apical dominance.
(ii) Cutting off the shoot at the apex removes the source of auxins that retard the development of the lateral buds. This leads to establishment of more side branches.
(iii) Pruning of plants such as tea enables tea bushes to develop more side branches increasing the yield.

2. (ii) (a) L – Coagulates
(b) stomach
Functions of HCL in the body
- Creates right PH for stomach enzymes.
- Kills any micro-organisms that enters with food.
- Coagulates, milk making it hold together for easy action of digestive enzymes.

(iii) (a) Permanent spot / mark is made.
(b) Fats / Lipids present.
(c) Permanent spot test / grease test / filter paper grease test.

(iv)

FOOD BEING TESTED	PROCEDURE	OBSERVATION	CONCLUSION
STARCH	Add iodine (solution)	No colour change / colour of iodine solution retained.	Starch Absent
PROTEIN RESIDUE	Add NaOH followed by $CuSO_4$ dropwise.	Purple colour observed	Proteins present

FOOD BEING TESTED	PROCEDURE	OBSERVATION	CONCLUSION
STARCH	Add iodine (solution)	Blue / black / blue-black	Starch Present
PROTEINS	Add NaOH followed by $CuSO_4$ dropwise.	Violet / purple colour	Proteins present

3. (i) Longitudinal section;
(ii) Parts labeled 1, 2 and 15
1 – Renal vein
2 – Renal artery
15 – Ureter

(iii) - Ionic balance in the body / Osmoregulation;
- Excretion of metabolic wastes;
- Regulate PH of body fluids; (2mks)

(iv) Label on the photograph the region of the specimen where the glomerulus and Loop of Henle are located.

(v)

Kangaroo rat	Tilapia
- Small and few glomeruli - Long loop of Henle	- Large and many glomeruli - Short loop of henle