

Name.....

Index No.....

School.....

Candidate's sign.....

Date.....

231/2
BIOLOGY
Paper 2
(THEORY)
July/August 2012
2 Hours

MBITA-SUBA DISTRICTS JOINT EVALUATION TEST– 2012
Kenya Certificate of Secondary Education (K.C.S.E)

231/2
BIOLOGY
Paper 2
(THEORY)
July/August 2012
2 Hours

INSTRUCTIONS TO CANDIDATES.

1. write your name and admission number in the spaces provided
2. Sign and write the date of examination in the spaces provided above
3. this paper consist of TWO section A and B
4. Answer ALL the questions in section A in the spaces provided
5. In section B answer question 6 (compulsory and either question 7 or 8 in the spaces provided after question 8.

For examiners use only:

SECTION	QUESTION	MAX.SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
TOTAL		80	

This paper consists of 2 printed pages. Candidates should check the question paper to Ensure that all the pages are printed as indicated and no questions are missing.

SECTION A (40MKS)

Answer ALL the questions in this section in the spaces provided.

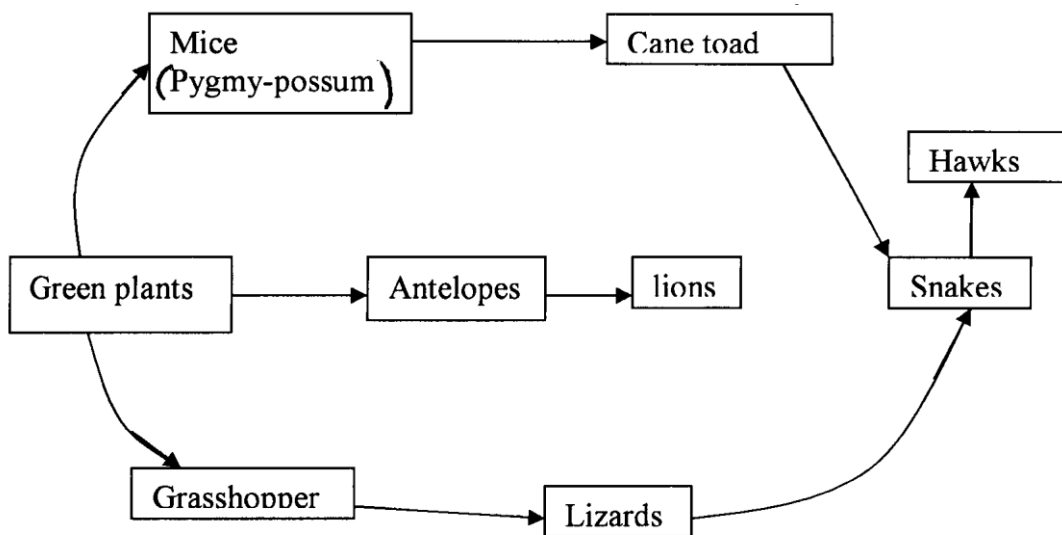
1. (a) Define
- i) Osmosis (1mk)
-
-
-
- ii) Haemolysis (1mk)
-
-
-
- (b) State the role of active transport in plants. (2mks)
-
-
-
- (c) Why is oxygen important in the process of active transport? (1mk)
-
-
-
- (d) State three properties of the cell membrane (3mks)
-
-
-
2. In a family with four children, three were found to have normal skin pigmentation while one was an albino. Using letter A to represent gene for normal skin pigmentation and a to represent the gene for albinism.
- (a) What are the genotypes of the parents? (2mks)
-
-
-

(b) Work out the genotypes of the normal pigmented children and the albino child (5mks)

(c) What is the probability that the fifth child will be an albino? (1mk)

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3. The diagram below represents a food web in a terrestrial ecosystem.



(a) Which organism has the highest number of preys (1mk)

.....

(b) Construct food chains with snakes as tertiary consumers (2mks)

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.....

(c) State the trophic level occupied by hawks in the food chains constructed in b) above (1mk)

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- (d) Describe how capture — recapture method can be used in estimating the population of fishes in a lake. (4mks)

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4. (a) Differentiate between the mode of fertilization in higher plants and in mammals (2mks)

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- (b) Explain the role of the following hormones in the female menstrual cycle

- (i) Oestrogen (2mks)

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- (ii) Luteinizing hormone (2mks)

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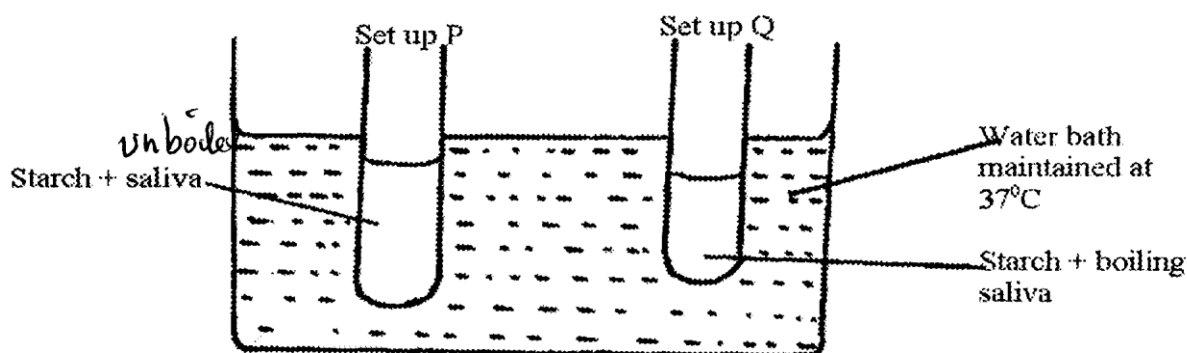
- (c) Give two functions of the placenta during pregnancy (2mks)

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5. In an experiment to investigate an aspect of digestion, two test tubes P and Q were set up as show in the diagram below.



The test tubes were left in the bath for 30 minutes. The content of each test tube was then tested for starch using iodine solution.

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

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(b) What results were expected in test tube P and Q (2mks)

P.....

Q.....

(c) Account for the results you have given in b above in test tube P and Q (2mks)

P.....

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Q.....

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(d) Why was the set up left at 37°C (1 mk)

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(e) Name the carbohydrate stored in (2mks)

i. Mammalian liver

.....

ii. Potato tuber

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SECTION B

Answer question 6 (Compulsory) and either question 7 or 8

6. Two sets of a pea seeds were germinated, set A was placed in normal daylight conditions in the laboratory while set B was placed in a dark cupboard. Starting a few days later the shoots lengths were measured twice daily and their mean lengths recorded as shown in the table below.

Time in hours	0	12	24	36	48	60	72	84
Set A length (mm)	12	14	20	23	28	31	47	54
Set B length (mm)	17	23	28	35	48	62	80	94

(a) Using suitable scale draw the graphs of the mean lengths in set A and B against time.

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(b) From the graph state the mean shoot length of each set of seedling at the 66th hour (2mks)

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.....

(c) Account for the difference of curve B and A (3 mks)

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(d) Explain what would happen to set up B if it were allowed to continue to grow under conditions of darkness (4mks)

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(e) State three external conditions which should be constant for both set ups (3mks)

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7. (a) What is reflex action (1mk)

(b) Describe what happens in the nervous system of a person who withdraws a finger from a very hot object. (14mks)

(c) Explain what happens to a young growing seedling when exposed to unidirectional source of light. (5mks)

8. (a) Outline the characteristics of the meristematic tissues. (5mks)

(b) Explain how different meristematic tissues contribute to growth higher plants. (15mks)

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A series of horizontal dotted lines for writing.

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Dotted lines for writing.

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