NAME:…………………………………………… INDEX NO:…………………………

SCHOOL:……………………………………………….. DATE:………………………………….

SIGN:………………………………….

231/3
BIOLOGY
PAPER 3
PRACTICAL
JULY / AUGUST 2012
TIME: 2 HOURS

KERICHO DISTRICT JOINT KCSE TRIAL EXAMINATION-2012
Kenya Certificate of Secondary Education (K.C.S.E)

232/3
BIOLOGY
PAPER 3
PRACTICAL
JULY / AUGUST 2012

INSTRUCTION TO CANDIDATES

Answer ALL the questions.

You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work. Answers must be written in the spaces provided. Additional pages must not be inserted.

Question	Maximum score	Candidate score
1	14	
2	12	
3	14	
Total Score	40	

This paper consists of 4 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and that no questions are missing.

1.   The diagram below shows the skull of a mammal. Study it carefully.
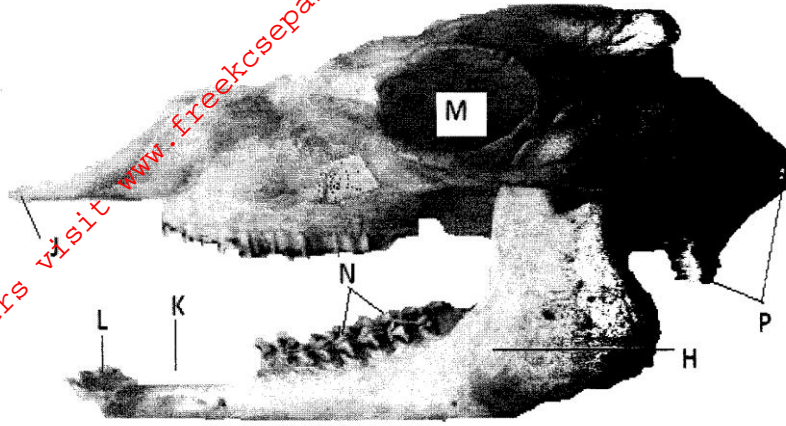
   (a) Name the parts labeled: (5 mk)

      H   …………………………………………………………………………

      K   …………………………………………………………………………

      L   …………………………………………………………………………

      M   …………………………………………………………………………

      P   …………………………………………………………………………

   (b)   State the mode of nutrition in the mammal above.   (1mk)

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   …………………………………………………………………………………………

   (c)   How do the following structures adapt the mammal to its mode of feeding:

      (i)   Structure J.   (1 mk)

   …………………………………………………………………………………………

   …………………………………………………………………………………………

      (ii)   Structure K.   (1 mk)

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   …………………………………………………………………………………………

      (iii) Structure L.   (1 mk)

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   …………………………………………………………………………………………

      (iv)   Structure N.   (2 mks)

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   (d)   State the functions of the following:

      (i)   Parts P.   (1 mk)

   …………………………………………………………………………………………

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      (ii)   Cavity M.   (1 mk)

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(e)   The structures labeled N never wear out. Give an explanation.   (1mk)

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2.   You are provided with specimen K. Using a cork borer prepare three Irish potato cylinders each measuring 30mm in length. Place one in air (on an empty Petri dish), another in l0ml of solution P in a Petri dish and the third one in l0ml of solution Q in a Petri dish. Leave the set-up to stand for 30 minutes.

(a)   Remove each cylinder from the Petri dishes, wipe with a tissue paper and measure their lengths again. Record your measurements in the table below and work out the percentage change in the length and record in the last column.   (3 mks)

Cylinder in	Initial length(mm)	Final length(mm)	% change
Air	30		
Solution P	30		
Solution Q	30		

(b)   From your results in (a) above, suggest the nature of solutions P and Q.   (2 mks)

    P…………………………………………………………..

    Q………………………………………………………….

(c)   Account for the changes in length of the potato cylinders placed in Solution P.   (3 mks).

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(d)   Why was the potato cylinder on an empty Petri dish included in the experiment?   (1 mk)

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(e)   State **three** significances of the physiological process under investigation to plants.   (3 mks)

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3.   Label three test tubes A, B and C and treat them as follows:

        Test tube A- Put 1 ml of solution **S1**

Test tube B -Put 1 ml of solution **S1**

Test tube C -Put 1 ml of solution **S1**

(a)   Withdraw two drops from test tube A, place on a white tile and add two drops of iodine solution. Record your observations and conclusions in the table below.   (2 mks)

Test tube	Observation	Conclusion
A		

(b)   Solution S2 is an extract obtained from a germinating seed. To test tubes B and C, add 1ml of solution S2. Boil the contents of test tube C for two minutes and cool. Place the three test tubes A, B and C in a water bath maintained at 37°C and leave the set up for 20 minutes. After which, test the contents of the three test tubes A, B and C with iodine solution following the procedure in (a) above. Fill the table below appropriately.   (6 mks)

Test tube	Observations	Conclusions
A		
B		
C		

(c)   To the contents of test tube B, add an equal amount of Benedict's solution and heat to boil. Record your observation and conclusion.

Observation: (1 mk)

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Conclusion: (1 mks)

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(d)   (i)   Suggest the identity of S2.   (1 mk)

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        (ii)   State **two** reasons for your answer in (d) (i) above.   (2 mks)

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(e)   Give a reason why the temperature of the water bath was maintained at 37°C.   (1 mk)

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