

NAME: ..... INDEX NO: .....

SIGNATURE: ..... DATE : .....

231/2  
BIOLOGY  
PAPER 2  
(THEORY)  
JULY / AUGUST 2014  
TIME: 2 HOURS

## NANDI CENTRAL DISTRICT JOINT MOCK 2014

*Kenya Certificate of Secondary Education (K.C.S.E.)*  
BIOLOGY  
PAPER 2  
TIME: 2 HOURS

### INSTRUCTIONS TO CANDIDATES:

- (a) Write your **Name** and **Index Number** in the spaces provided.
- (b) **Sign** and write the **Date** of examination in the spaces provided.
- (c) This paper consists of TWO sections A and B.
- (d) Answer all questions in section A in the spaces provided.
- (e) In section B, answer question 6 (compulsory) and either question 7 or 8 in the spaces provided.

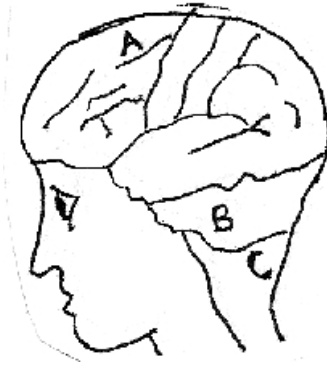
### FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAX. SCORE	CANDIDATE SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	<b>TOTAL</b>	<b>80</b>	

SECTION A (40 MARKS)

Answer all questions in this section in the spaces provided.

1. The diagram below shows surface view of a human brain.



(a) Name the part labeled B and C. (2mks)

B:.....

C:.....

(b) State **three** functions of the part labeled A. (3mks)

.....

.....

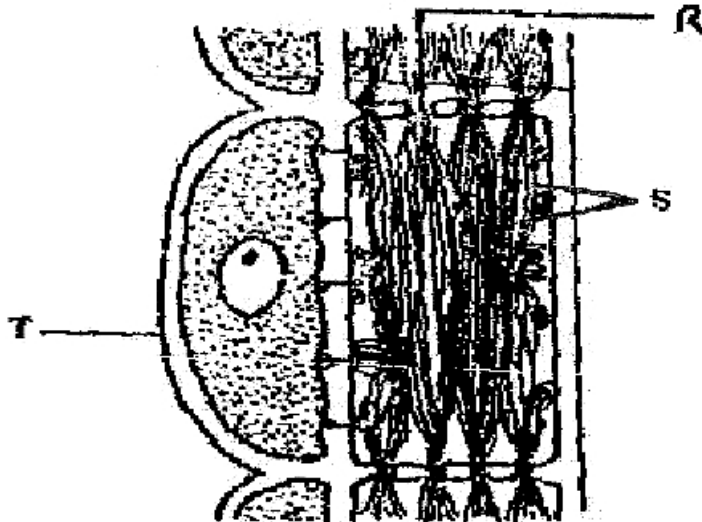
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(c) State what would happen if the part labeled B was damaged. (2mks)

.....

.....

2. The diagram below represents part of phloem tissue.



(a) Name the structures labeled R and S and the cell labeled T. (3mks)

R:.....

S:.....

Cell labeled T:.....

(b) State the function of the structure labeled S. (1mk)

.....

(c) Explain why xylem is a mechanical tissue. (2mks)

.....

.....

(d) (i) State the effect of removal of the cell labeled T. (1mk)

.....

(ii) Give a reason for your answer in (a) above. (1mk)

.....

3. (a) Name two disorders in human caused by gene mutation. (2mks)

.....

.....

(b) Describe the following chromosomal mutations:

(i) Inversion (2mks)

.....

.....

(ii) Translocation (2mks)

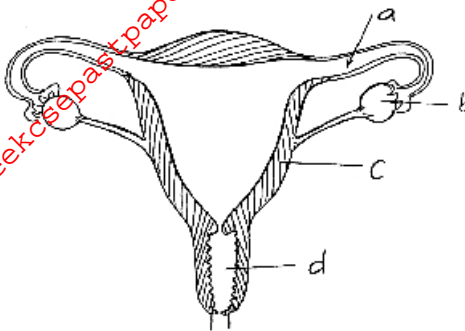
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(c) In mice the allele for **black fur** is **dominant** to the allele for **brown fur**. What percentage of offspring would have brown fur from a cross between heterozygous black mice? Show working. Use letter **B** to represent the allele for **black colour**.

(4mks)

4. Study the diagram below and answer the questions that follow.



(a) (i) Which part marked a, b, c and d, when defective after implantation may lead to abortion. (1mk)

.....

(ii) Give a reason for your answer. (1mk)

.....

.....

(b) The part labeled b can be removed after 4 months of pregnancy without interfering with the pregnancy. Explain. (2mks)

.....

.....

(c) Under each of the following, state the name of the causative agent.

(i) Syphilis (1mk)

.....

(ii) Gonorrhoea (1mk)

.....

(iii) AIDS

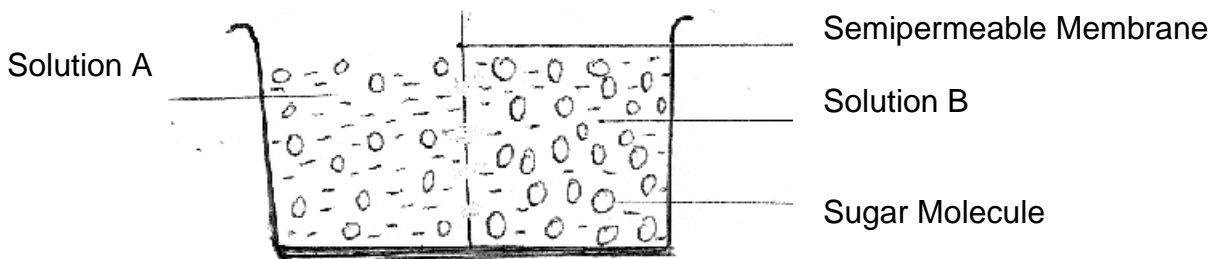
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(d) State two disadvantages of external fertilization. (2mks)

.....

.....

5. Study the figure below and answer the questions that follow.



(a) Which solution has higher concentration of free water molecules? (1mk)

.....

(b) Which solution is more concentrated? (1mk)

.....

(c) In which direction will osmosis take place? Indicate using an arrow. (1mk)

(d) What does semi-permeable membrane represent in an animal cell (1mk)

.....

.....

(e) Name **two** processes in living organisms that depend on osmosis. (2mks)

.....

.....

**SECTION B – 40 MARKS**

**Answer question 6 (Compulsory) and any other one question from this section.**

6. During germination and growth of a cereal, the dry weight of endosperm, the embryo and total dry weight were determined at two-day intervals. The results are shown in the table below.

Time after planting	Dry weight of endosperm	Dry weight of embryo (mg)	Total dry weight (mg)
0	43	2	45
2	40	2	42
4	33	7	40
6	20	17	37
8	10	25	35
10	6	33	39

(a) Using the same axes, draw graphs of dry weight of endosperm, embryo and the total dry weight against time. (8mks)

(b) What is the total dry weight on day 5? (1mk)

.....

(c) Account for:

(i) Decrease in dry weight for endosperm from day 0 to 10. (2mks)

.....

.....

(ii) Increase in dry weight of embryo from day 0 to 10. (2mks)

.....

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