Name:	 Index no	
School:	 Candidate's sign	••
Date:		
231/2		
BIOLOGY		
PAPER 2		
JUNE 2016		

# KASSU JET EXAMINATION

Kenya Certificate of Secondary Education (K.C.S.E.) 2016

Biology Paper 2

**TIME: 2 HOURS** 

## **INSTRUCTIONS TO CANDIDATES:**

- Write your name and index number in the spaces provided.
- Answer all the questions in Section A in the spaces provided.
- In section B answer questions 6 (compulsory) and either question 7 or 8 in the spaces provided

### For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5 KINGE	8	
В	6	20	
	7	20	
	8	20	
	TOTAL	80	

This paper consists of 10 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing

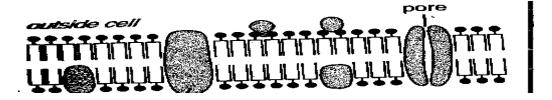
#### **SECTION A (40 MARKS)**

## Answer all the questions in this section in the spaces provided

1. A couple has three children, the mother had blood group A and the father had blood group B while one

the children had <b>blood group 0.</b>	
(i) What were the genotypes of the parents?	(1 mark)
Father	
Mother	
WOLKI <sup>O</sup>	
(ii) What was the genotype of the child with blood <b>group 0?</b>	(1mark)
(b) Work out using a punnet square the genotypes of the other children.	(4 marks)
(b) Work out using a punnet square the genotypes of the other children.	
(c) <b>Which</b> child can receive blood from any member of the family?	(1mark)
(d) <b>State</b> the percentage of children who can donate blood to all blood groups.	(1mark)

2. Below is a diagram of a structure found in Eukaryotic cells? Study it and answer the questions that follow



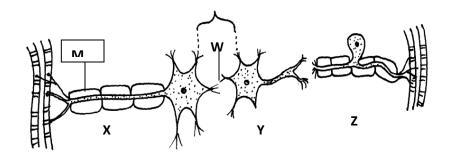
a) <b>Identify</b> the structure	(1 mark)
b) State <b>two</b> functions of the structure	(2 marks)
i.	9
i.  ii.  c) (i) Name <b>one</b> organelle found in animal cells but absent in plant cells	
e) (i) I tame one organone round in animal constant absent in plant cons	(1 mark)
ii) State <b>one</b> function of the organelle you have named in(c) above	(1 mark)
d) Briefly <b>explain</b> cell biology as an evidence of evolution	(3 marks)
, , , , , , , , , , , , , , , , , , ,	

3. I	Below is a diagram of a plant a form three student collected while carrying out an ecolo   Adventitious root  (a) With reasons identify the division into which the students classified the plant.	gical study?
	Division	(1mark)
	Reasons	(2marks)

		,
Reasons	pores in this plant.	(2marks)
		•••••
o) (i) <b>Name</b> the structure that produces sp	and the second s	(1mark)
(ii) State <b>two</b> differences between the spermatophyta.	plant division above and that of the division	( 2 marks)
Jish.	Spermatophyte	
tortiee Past Papers		
60,		
c) Give <b>two</b> distinguishing features of cla	ass Amphibia	(2marks)
a)		
o)		

4. The diagram below represents human foetus in a uterus. **Placenta** yolk В C Chorion **Mucus plug** a) **Name** the part labeled D. (1 mark) i) Name the types of blood vessels found in the structure labeled C. (2 marks) ii) **State** the differences in composition of blood found in the vessels named in (b) (i) above. (2 marks) iii) State two importance of the fluid found in part B (2 marks) iv) **State** the role of progesterone during pregnancy (1 mark)

5. The diagram below represents three types of neurons found in a mammalian body.



(a) Name the neurons $\mathbf{X}$ , $\mathbf{Y}$ and $\mathbf{Z}$	(3marks)
X	
Y	
call e	
Z(b) Name the chemical substance responsible for the transmission of an impulse across the	
labelled <b>W</b> .	(1mark)
(c) State <b>two</b> functions of the part labelled <b>M</b> .	(2marks)
with the second	, , ,
(d) In which part of the spinal cord is neurone <b>Y</b> located?	
× 000	•••••
(d) In which part of the spinal cord is neurone Y located?	(1mark)
ed .	•••••
(e) Using arrows indicate on the diagrams the direction followed by nerve impulse leading to a	
response.	(1mark)

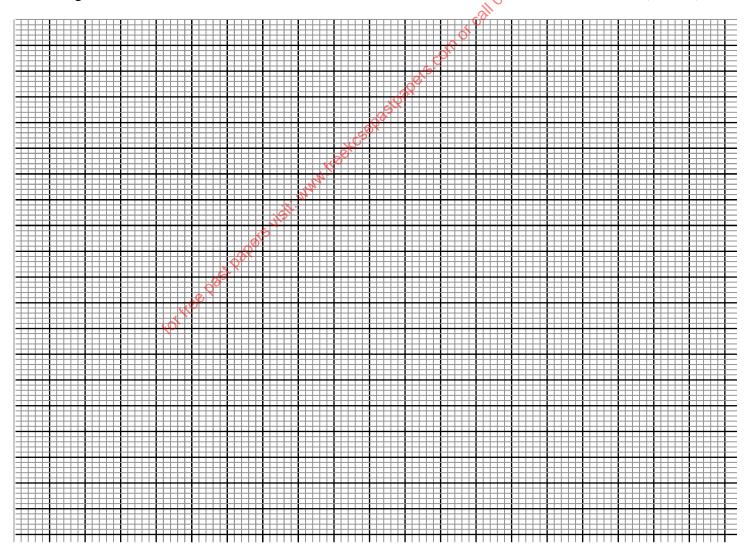
#### SECTION B (40MARKS)

#### Answer questions 6(compulsory) and either questions 7 or 8 in the spaces provided

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	Dry weight of	Dry weight of	Total dry weight (mg)
planting(days)	endosperm	embryo (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 weigh of endosperm, embryo and the total dry weight against time (8marks)



b) W	<b>hat</b> wa	as the dry weight of the endosperm and embryo on the 5 <sup>th</sup> day?	(2marks)
Endo	sperm		
Emb			
Emb			
`	<b>A</b>		
c)	Acco	ount for:	
	i)	Decrease in dry weight of endosperm from day 0 to 10	(2marks)
	••••	19	
	ii)	Increase in dry weight of embryo from day 0 day 10	(2marks)
		, c <sub>0</sub>	
	iii)	Decrease in total dry weight from day 0 to day 8	(2marks)
		nna Heek Eest	
d)	State	e the role of the following in germination	(2marks)
	i) Gl	lucose * Page 5 ***	
	•••••		
	•••••		
	ii) E	Enzymes	
	•••••		
e)	How	v are the foliage leaves adapted to their function	(2 marks)
	••••		

Explain how halophytes are adapted to their habitat  Explain the adaptations of thoracic, cervical and lumbar vertebrae to their functions  Describe the structural factors affecting transpiration	(10 marks
	(12 marks
<b>Describe</b> the structural factors affecting transpiration	(12 marks
	(8 marks
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