

Name: ..... Index no .....

School: ..... Candidate's sign .....

Date: .....

**231/2**

**BIOLOGY**

**PAPER 2**

**JUNE 2016**

**TIME: 2 HOURS**

# KASSU JET EXAMINATION

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

**Biology**

**Paper 2**

## 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
<b>A</b>	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
<b>B</b>	6	20	
	7	20	
	8	20	
	<b>TOTAL</b>	<b>80</b>	

*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 of the children had **blood group 0**.

(a) (i) **What** were the genotypes of the parents?

(1mark)

Father

.....

Mother

.....

(ii) What was the genotype of the child with blood **group 0**?

(1mark)

.....

(b) **Work out** using a **punnet** square the genotypes of the other children.

(4 marks)

(c) **Which** child can receive blood from any member of the family?

(1mark)

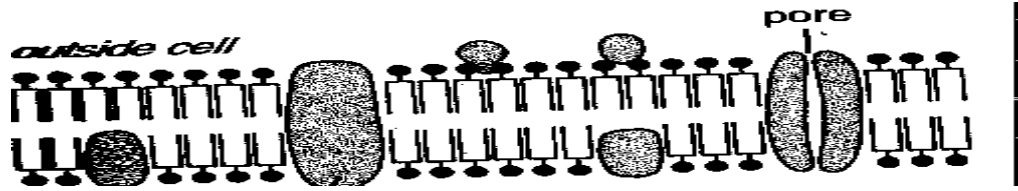
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(d) **State** the percentage of children who can donate blood to all blood groups.

(1mark)

.....

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



a) **Identify** the structure

(1 mark)

.....

b) State **two** functions of the structure

(2 marks)

i.

.....

ii.

.....

c) (i) Name **one** organelle found in animal cells but absent in plant cells

(1 mark)

.....

ii) State **one** function of the organelle you have named in(c) above

(1 mark)

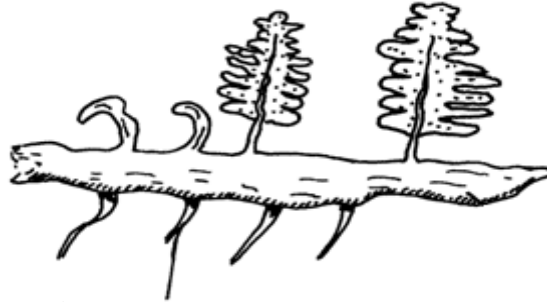
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d) Briefly **explain** cell biology as an evidence of evolution

(3 marks)

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....

3. Below is a diagram of a plant a form three student collected while carrying out an ecological study?



*Adventitious root*

(a) With reasons identify the division into which the students classified the plant.

Division (1mark)

.....

Reasons (2marks)

.....

.....

b) (i) **Name** the structure that produces spores in this plant. (1mark)

.....

.....

(ii) State **two** differences between the plant division above and that of the division *spermatophyta*. ( 2 marks)

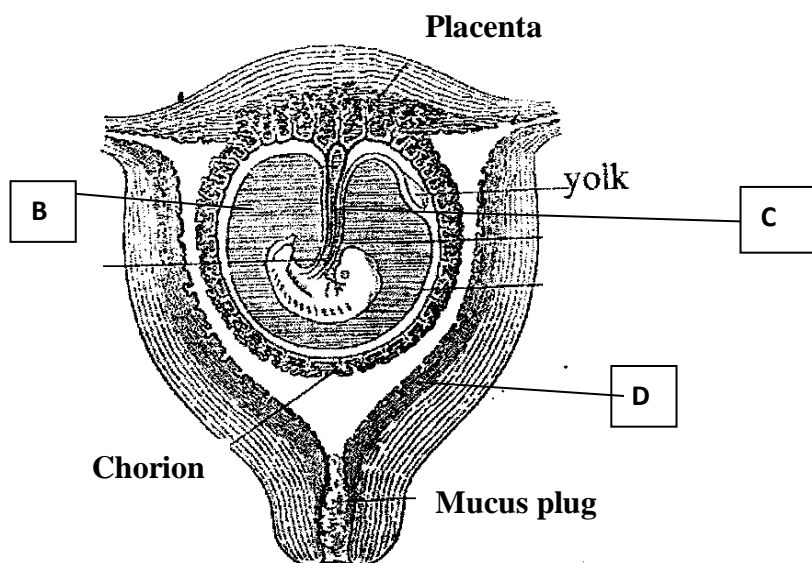
	<i>Spermatophyte</i>

c) Give **two** distinguishing features of class *Amphibia* (2marks)

a) .....

b) .....

4. The diagram below represents human foetus in a uterus.



a) **Name** the part labeled D. (1 mark)

.....

b) 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)

.....

.....

.....

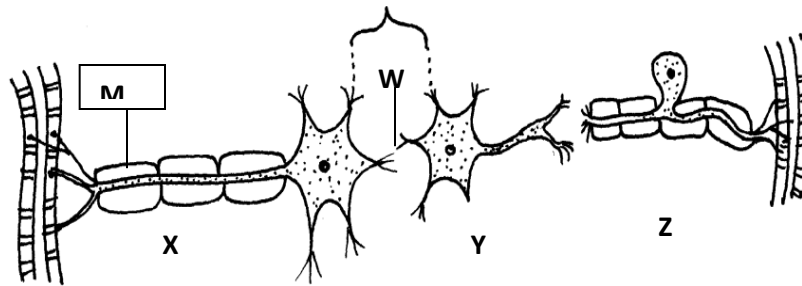
iv) **State** the role of progesterone during pregnancy (1 mark)

.....

.....

.....

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



(a) Name the neurons **X**, **Y** and **Z** (3marks)

X.....

Y.....

Z.....

(b) Name the chemical substance responsible for the transmission of an impulse across the gap labelled **W**. (1mark)

.....

(c) State **two** functions of the part labelled **M**. (2marks)

.....

.....

(d) In which part of the spinal cord is neurone **Y** located? (1mark)

.....

(e) Using arrows indicate on the diagrams the direction followed by nerve impulse leading to a response. (1mark)

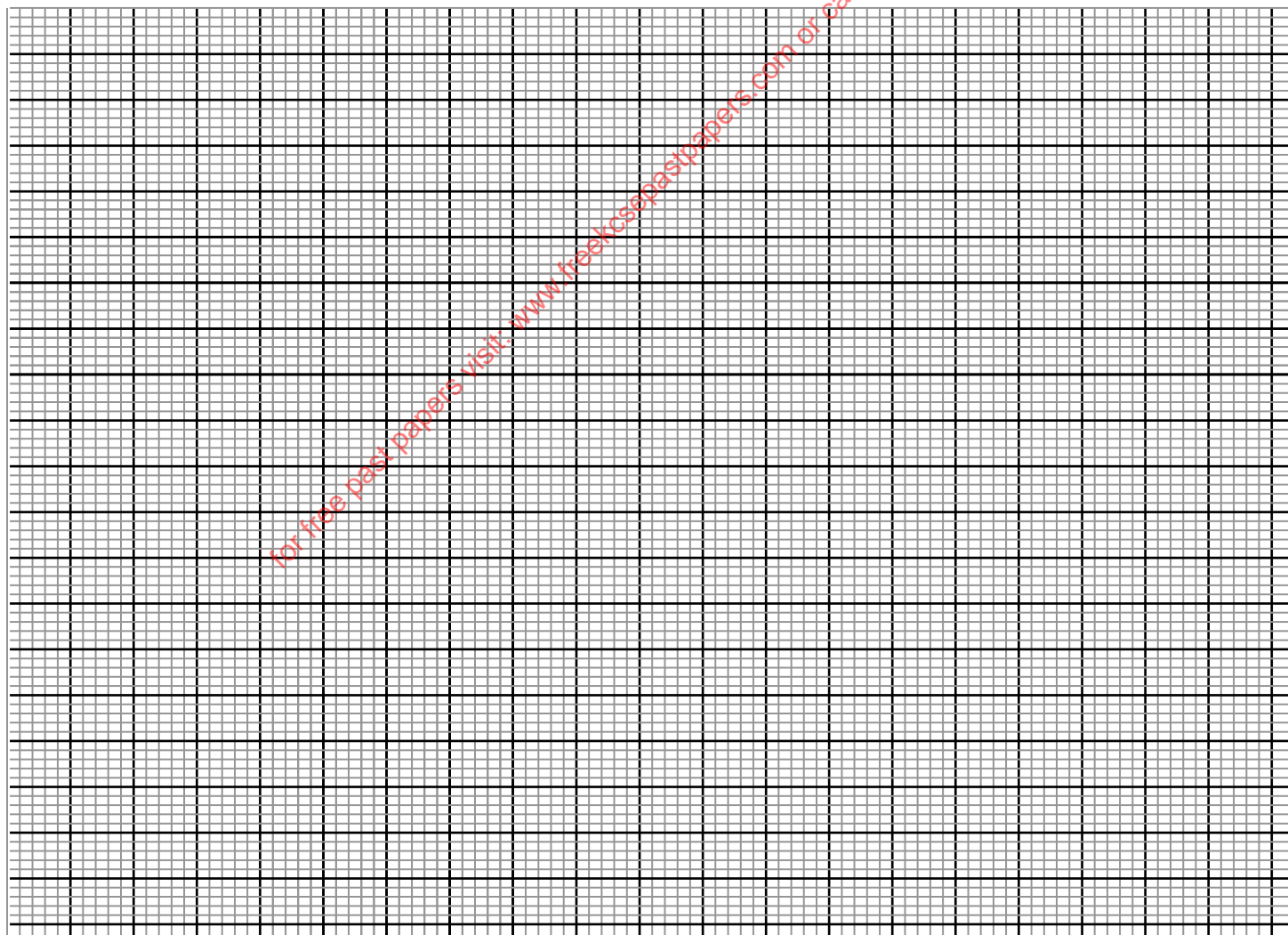
**SECTION B (40MARKS)**

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



b) **What** was the dry weight of the endosperm and embryo on the **5<sup>th</sup> day**? (2marks)

Endosperm

.....

Embryo

.....

c) **Account** for:

i) Decrease in dry weight of endosperm from day 0 to 10 (2marks)

.....

.....

.....

ii) Increase in dry weight of embryo from day 0 day 10 (2marks)

.....

.....

.....

iii) Decrease in total dry weight from day 0 to day 8 (2marks)

.....

.....

.....

d) **State** the role of the following in germination (2marks)

i) Glucose

.....

.....

ii) Enzymes

.....

.....

e) **How** are the foliage leaves adapted to their function (2 marks)

.....

.....

.....





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