Name: …… **Index no** ……..….....

School: ……..…. **Candidate's sign** ……....

Date: ……

231/2
BIOLOGY
PAPER 2
JULY /AUGUST 2011
TIME: 2 HOURS

NDHIWA DISTRICT JOINT EVALUATION TEST

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

Biology
Paper 2

INSTRUCTIONS TO CANDIDATES:

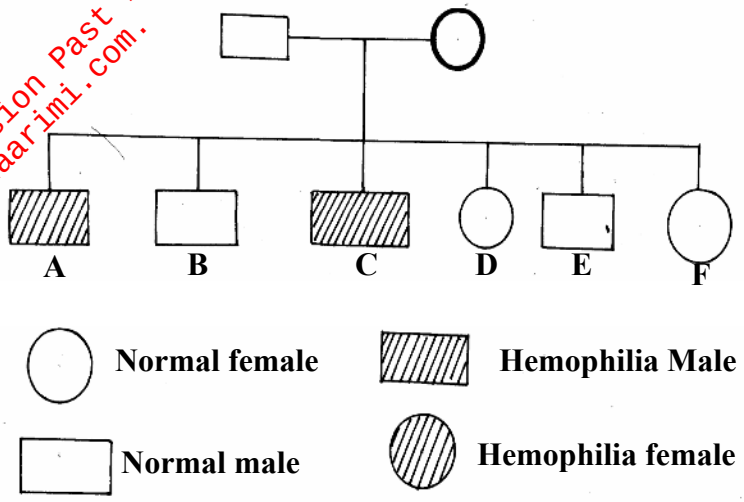
- *Write **your name** and **index number** in the spaces provided.*
- *Answer **all** the questions in Section **A** in the spaces provided.*
- *In section **B** answer questions **6** (compulsory) and either question **7** or **8** in the spaces provided*

For Examiner's Use Only:

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

This paper consists of 8 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing

1. Study the phenotypic chart below showing the inheritance of the gene responsible for haemophilia in a family.



(a) Write the genotype of individuals A and F. (2mks)

A……

F……

(b) A member of this family labeled C marries a carrier family. What will be the phenotypic ration of the offspring? Show your workings. (4mks)

(c) Other than the condition stated above, state any other **two** common genetic disorders that remit from gene mutation. (2mks)

……

……

2. (a)Distinguish between Homologous structures and analogous structures. Give an example in each case. (4mks)

Homologous structure ……

Example……

Analogous structures……

Example……

(b) Explain why same parasites develop resistance to certain drugs after a long time of exposure. (2mks)

……

……

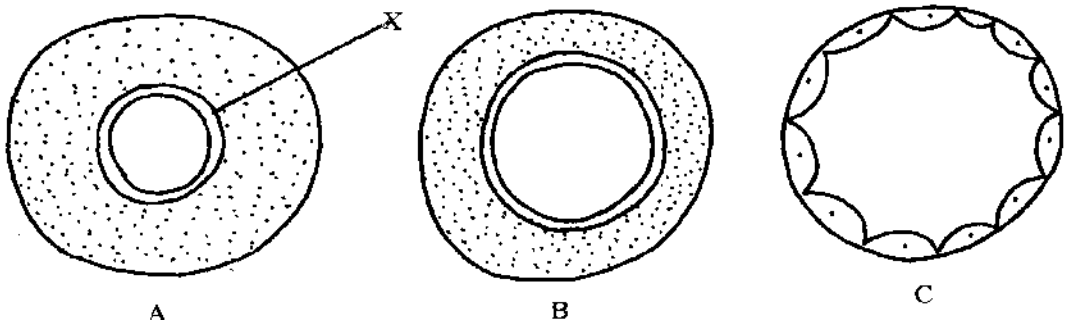
(c) (i) What is non-disjunction? (1mk)

……

……

(ii) Give **one** example of a genetic disorder associated with non-disjunction. (1mk)

3. Diagrams **A,B** and **C** below show cross-sections of three different types of blood vessels. They are not drawn to scale.



(a) Identify blood vessels **A,B** and **C** (3mks)

A……

B……

C……

(b) (i) Name the layer labeled **X** on vessel **A** (1mk)

……..

(ii) State **two ways** in which vessels A is adapted to its functions (2mks)

……

……

(c) (i) What is an immune response? (1mk)

……

……

(ii) Name **one** disease that is effectively controlled through vaccination (1mk)

……

……

4. (a) What is meant by the term fertilization? (2mks)

……

……

(b) (i) Name the type of cell division that produces gametes (1mk)

……

(ii) Where does the type of cell division mentioned above occur in mammals? (1mk)

……

(c) What happens to the wall of the uterus; (1mk)

(i) before the release of an egg? (1mk)

……

(ii) if no fertilization occurs? (1mk)

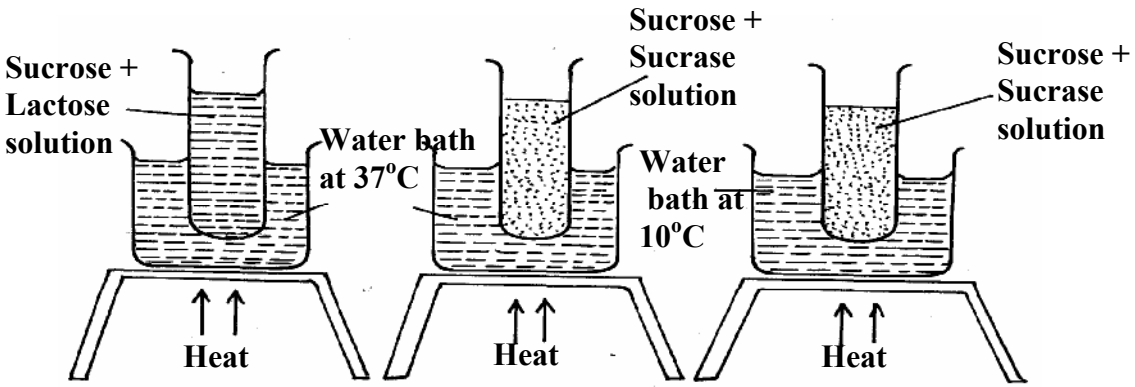
……

(b) How is the placenta adapted to its functions? (2mks)

……

……

5. The diagram below represent set ups arranged by a group of students investigating certain characteristic of enzymes



After thirty minutes the students tested the contents of the test tubes for sucrose

(a) In which of the three set ups was the test for sucrose negative? (1mk)

……

……

(b) For each of the test tubes where the test for sucrose was positive, explain why? (2mks)

……

……

(c) State the two characteristics of enzymes the students were investigating. (2mks)

……

……

(d) Name two reagents the students used while testing for sucrose. (2mks)

……

……

(e) Give the general name for all enzymes which digest proteins. (1mk)

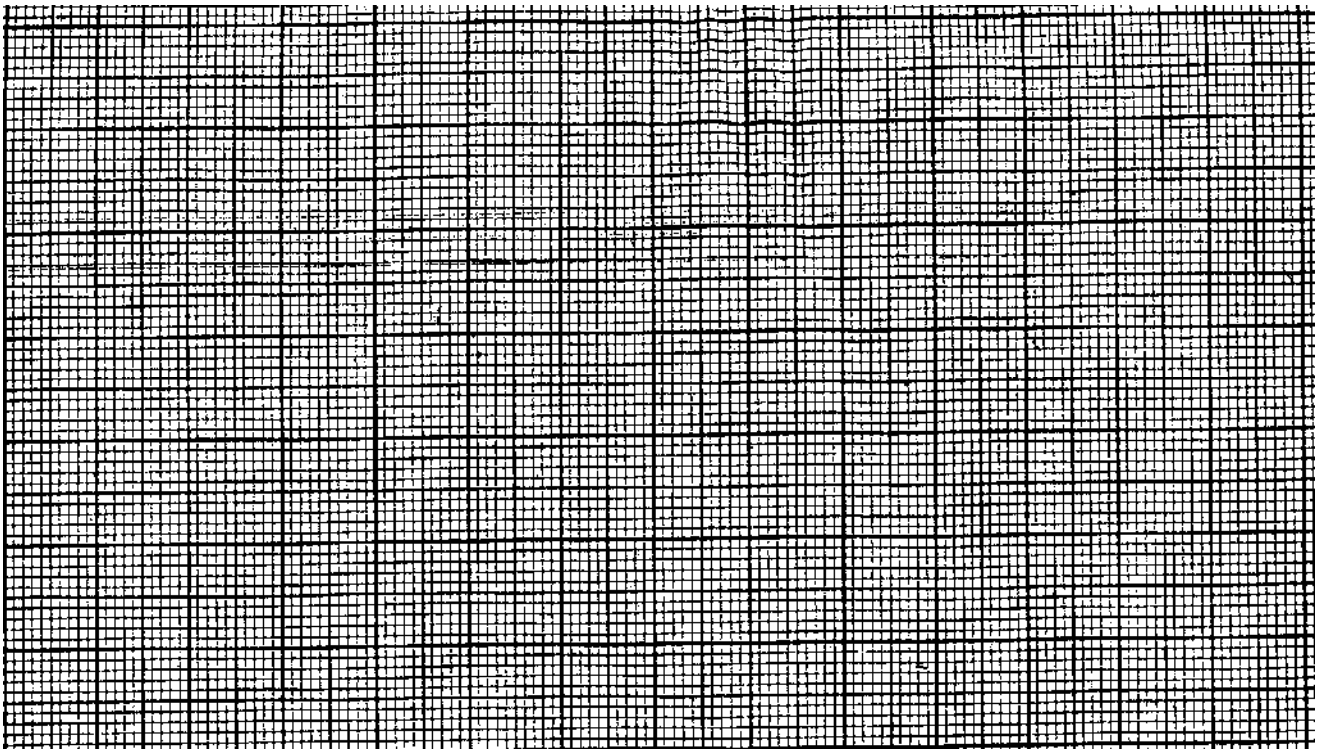
SECTION B (40 MARKS)

Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8

6. An experiment was carried out to investigate the rate of growth of pollen tube against time. The results are shown in the table below:

Time in minutes	Growth of pollen tube in millimeters
0	0
30	4.0
60	9.8
90	15.2
120	20.0
150	21.6
180	22.4

(a) (i) On the grid provided draw a graph of the pollen tube growth against time. (7mks)



(b) (i) At what intervals was the growth of the pollen tube measured? (1mk)

……

……

(ii) What was the length of pollen tube at 130 minutes; (1mk)

……

(iii) At what time was the length of the pollen tube 18mm? (1mk)

……

(iv) With reasons, describe the growth pattern of the pollen tube between:

0 to 120 munutes……(2mks)

Reason

……

120 to 180 minutes……..(2mks)

Reason

……

(v) State the importance of the growth of pollen tube to the plant (1mk)

……

(c) State the changes that take place in a flower after fertilization (5mks)

……

……

……

……

……

……

7. Explain how the various activities of man have caused air pollution. (20mks)

8. (a) What is meant by digestion? (2mks)

……

……

(b) Describe how mammalian small intestine is adapted to its function. (18mks)

……

……

……

……

.....

.....