NAME……INDEX NO……. ADM…….

CLASS……..CANDIDATE'S SIGNATURE……DATE……

KAMDARA JOINT – 2016

231/2
BIOLOGY (THEORY)
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and Index Number in the spaces provided above.

2. This paper consists of TWO sections; A and B.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 after question 8.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
Total Score		80	

This paper consists of 9 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no question is missing.

SECTION A: *Answer all the questions in this section in the spaces provided.*

1. (a) What is meant by the term (2mks)

(i) Allele

(ii) Test cross

(b) Describe the following chromosomal mutations:

i) Inversion (1mks)

……

……..

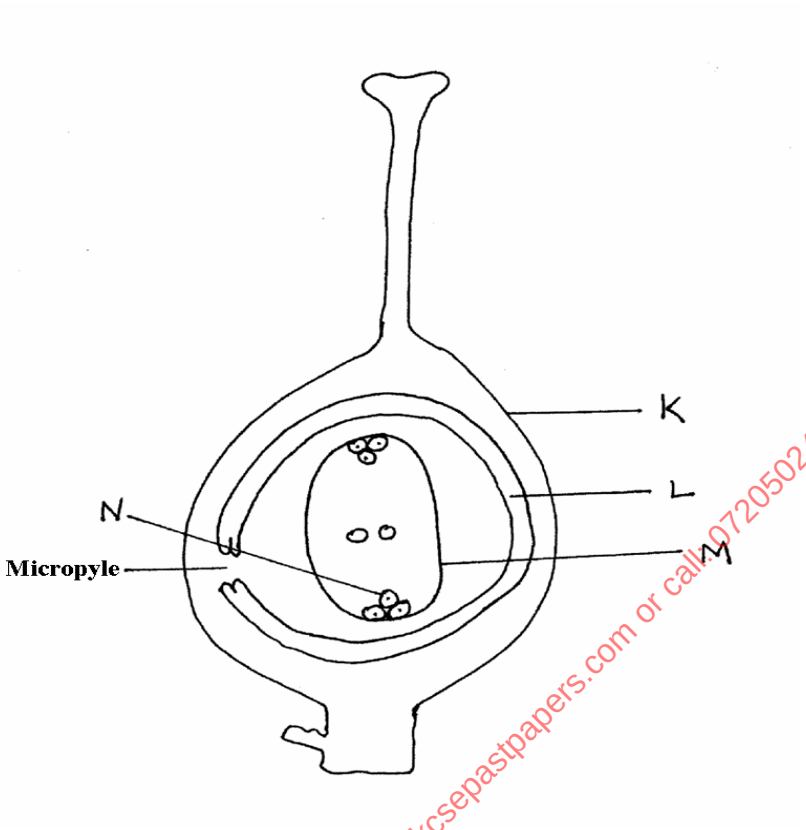
ii) Translocation (1mks)

……

……

(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 your working. Use letter **B** to represent the allele for **black fur**. (4mks)

2. The diagram below shows a cross – section through a pistil.



(a) Name the structures labeled K, L and M: (3 mks)

K

……

L

……

.

M

……

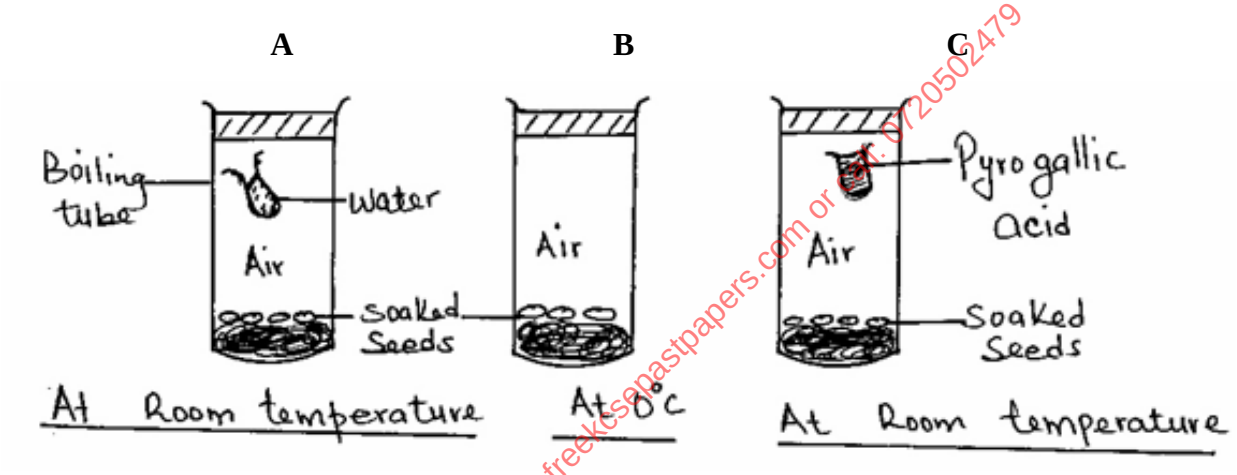
(b) What do the following parts develop into after fertilization?: (2 mks)

Part L:……

Part N:-……

(c) State three ways by which plants promote cross fertilization. (3 mks)

3. Study the diagrams below and answer the questions that follow.



(a) Identify the process being investigated. (1mk)

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(b) With a reason identify the set-up in which germination will occur. (2mks)

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(c) State **two** roles played by water during germination. (2mks)

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(d) Name **three** factors inside the seed that causes seed dormancy. (3mks)

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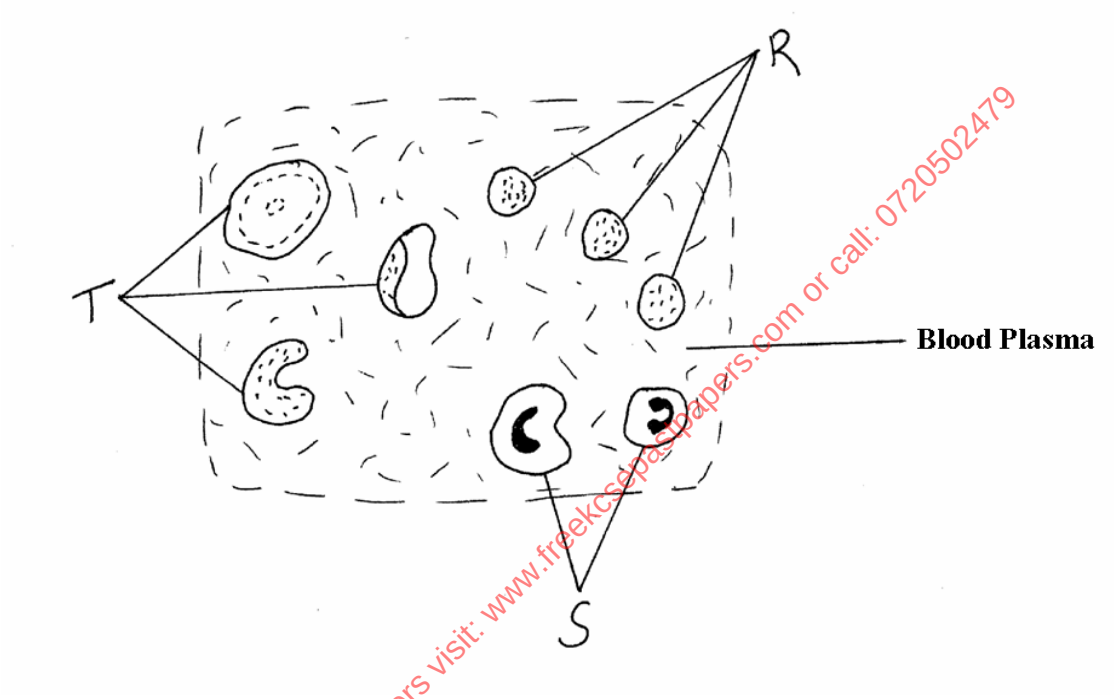
4. The figures below represent mammalian tissue as seen under a light microscope.



(a) Identify the tissue (1 mk)

……

(b) Name the cells represented by (3 mks)

R

……

S

……

T

……

(c) State the function of structure S and R. (2 mks)

S

……

R

……

(d) Explain **two** adaptations of structure T to its function. (2 mks)

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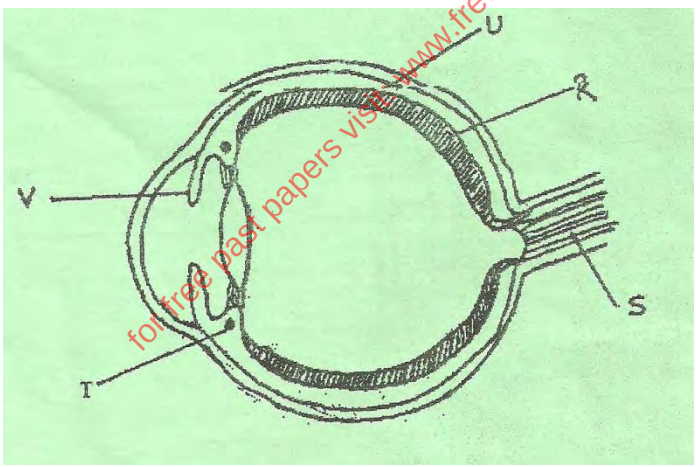
……

……

(e) Name the hereditary condition a person with structure T is suffering from. (1mk)

5. The diagram below shows a mammalian eye.



a) Name the parts labeled R, S and T. (3 mks)

R……

S……

T……

b) Give **two** adaptations of part labeled U. (2 mks)

……

……

……

……

c) Describe the changes that occur to part V when one moves from a bright room to a dark room. (3 mks)

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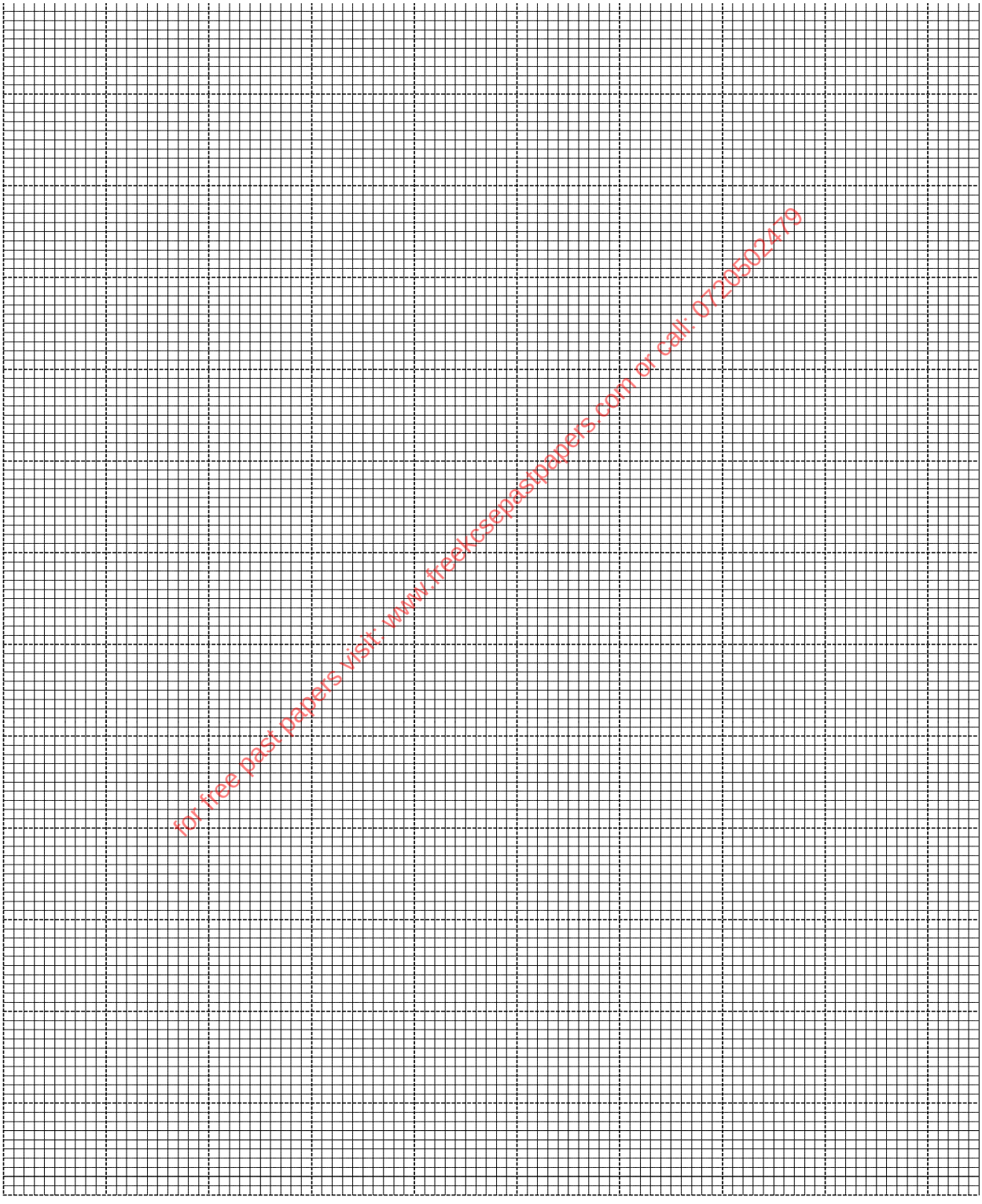
SECTION B

Answer questions 6 (Compulsory) and either question 7 or 8 in the spaces provided after question 8.

6. Equal grams of maize flour were placed into two boxes K and L respectively. Equal numbers of weevils were then introduced into the boxes. The boxes were kept under similar environmental conditions. The weevils were counted at intervals and the results recorded in the table below.

No. of days after introduction of weevils	Approximate No. of weevils present	
	K	**L**
0	20	20
5	20	20
40	200	300
60	550	800
80	560	1300
100	650	1750
120	640	1750
135	650	1740
150	645	1748

a) Using a suitable scale and on the same axes draw two graphs of the approximate number of weevils present against number of days after introduction of weevils on the graph paper provided. (8mks)



(b) What were the approximate number of weevils present in the two boxes on the 70th day?

(2mks)

Number in **K:** ……..

Number in **L:** ….....

(c) (i) On what day was the population of weevils in **K** 580? (1mk)

.....

(ii) Between which days was the population difference greatest? (1mk)

.....

(d) Account for the shape of graph **L** between day 5 and day 100. (4 mks)

.....

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.....

(e) State factors that would make the human species assume the curve **K**above. (4mks)

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7. (a) Explain the role of Auxins in geotropic response in plants (5 mks)

(b) Describe roles of **other** hormones in the growth and development of plants. (15 mks)

8. a) what is natural selection? (4mks)

b) Describe **four** evidences for organic evolution. (16mks)