NAME…….. INDEX NO…….....

SCHOOL…… DATE……..……

231/2
BIOLOGY
PAPER 2
(THEORY)
MAY, 2019
TIME: 2 HOURS

ACK DIOCESE OF NAMBALE

FOUR 2019 JOINT EXAMINTIONS

INSTRUCTIONS TO CANDIDATES:

(a) Write your **Name**, **Index Number** and **School** in the spaces provided above.

(b) **Sign** and write the **date** of examination in the spaces provided above.

(c) This paper consists of **two Section**; **A** and **B**.

(d) Answer all the 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 after question **8**.

FOR EXAMINER'S USE ONLY:

Section	Question	MaximumScore	Candidates Score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
Total Score		80	

SECTION A: ANSWER ALL QUESTIONS

1. Bile and pancreatic juice are important secretions in animal nutrition

a) In which part of the digestive system do they exert their influence? (1 mark)

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b) i). For efficient digestion, which of the two secretions should be mixed with chyme? first?

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ii). Explain your answer above (2 marks)

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c) Explain why:

i). It is not necessary to eat too much protein in the diet (2 marks)

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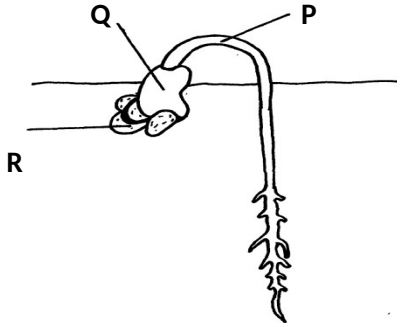
ii). Liver is recommended in the diet of anaemic persons (2 marks)

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2. The diagram below represents a stage of growth in a seed during germination.



(a) (i) Name the type of germination illustrated above (1mk)

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

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(b) Name the part labellled R in the above diagram. (1mk)

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(c) Give **two** functions of the part labeled Q (2mks)

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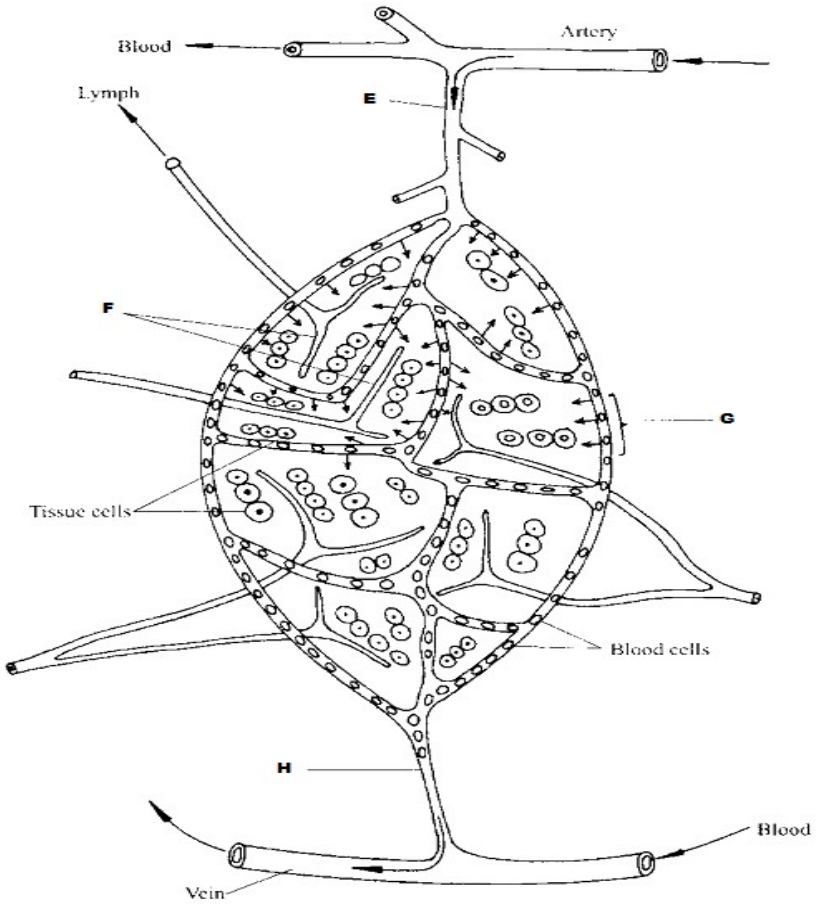
d) Explain how the part labeled P straightens. (3mks)

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3 Study the diagram below and answer questions that follow.



a)Identify the parts labeled E, F and H. (3mk)

E……

F……

H……

b)State the importance of the process represented by G in bodies of living organisms. (2mk)

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a) Compare the composition of blood in vessel E and H. (3mk)

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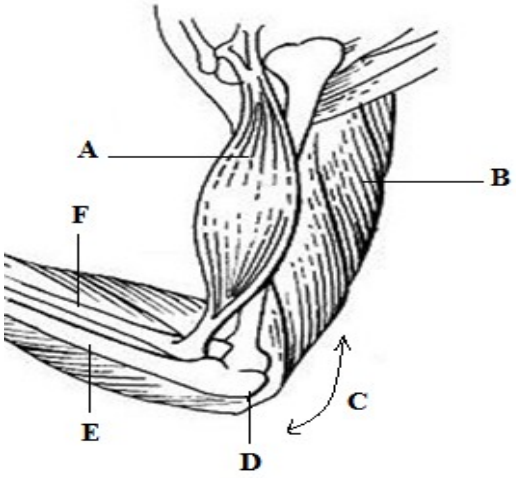
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4. Study the diagram below and answer the questions which follow.



(i) Identify the muscle represented by letters A and B (2 marks)

A

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B

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(ii) Describe how muscles A and B cause straightening of joint C (2 marks)

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(b) Name the joint C (1 mark)

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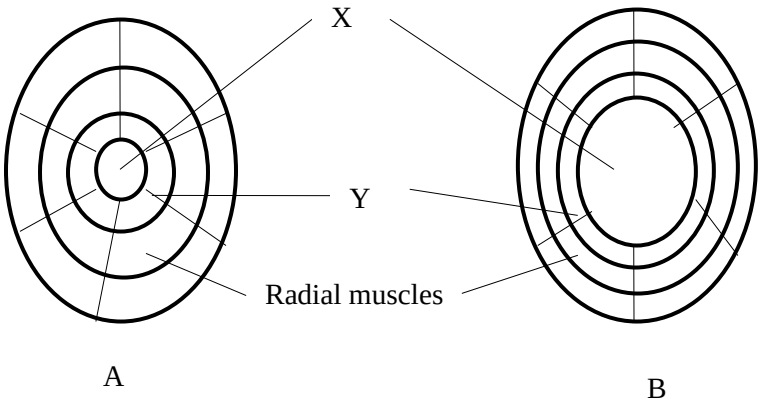
(c) Name parts label D, E and F (3marks)

D……

E……

F……

5. The diagram below shows how the iris and pupil of human eye appear under different conditions.



a) Name the structures labeled X and Y (2 marks)

X …….

Y ……

bi)State the condition that lead to the change in appearance shown in the diagram labeled B. (1mrk)

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……..……

ii)Describe the changes that lead to the appearance of the iris and pupil as shown in the diagram labeled B.(4 marks)

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i) What is the significance of the changes described in (b) (ii) above. (1 mark)

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6. Form one students of St. Josephine carried out an experiment to determine the percentage change in weight of two tender stems of two different plants when placed in two different sucrose solutions of different concentrations.

Sucrose concentration (mg)	0	5	10	15	20	25	30	35
Percentage change in weight for plant N	7.0	6.6	5.0	3.6	1.6	-0.8	-2.3	-2.8
Percentage change in weight for plant D	3.2	2.2	0.8	-0.6	-1.4	-2.2	-2.8	-3.4

a) On the same axes, in the graph provided below, plot a graph of percentage weight change of the plant stem tissues against sucrose concentration (8 marks)

b) Account for the results obtained for the plant tissues at 15 mg/ml sucrose concentration (2 marks)

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c) From the graph, determine the concentrations of the cells saps of the two plants

Plant N (1 mark)

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Plant D (1 mark)

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d) i). Identify the plant that was most likely obtained from a more saline environment?

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ii). Explain your answer above (2 marks)

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e) Describe the effect of high osmotic pressure of body fluids on urine formation (5 marks)

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7. a). Discuss the practical applications of auxins and gibberellins in agriculture (10 marks)
b). Discuss the role of living organisms in the nitrogen cycle (10 marks)
8. Describe the structural adaptations of the mammalian heart (20 marks)

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