THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education

231/3 – BIOLOGY – Paper 3
(PRACTICAL)
Nov. 2018 – 1¾ hours

Name ..... **Index Number** .....

Candidate's Signature ..... **Date** .....

Instructions to candidates

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(a) *Write your name and index number in the spaces provided above.*
(b) *Sign and write the date of examination in the spaces provided above.*
(c) *Answer **all** the questions in the spaces provided.*
(d) *You are required to spend the first 15 minutes of the 1¾ hours allowed for this paper reading the whole paper carefully before commencing your work.*
(e) *Additional pages must **not** be inserted.*
(f) ***This paper consists of 7 printed pages.***
(g) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
(h) ***Candidates should answer all the questions in English.***

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	14	
2	12	
3	14	
Total Score	40	

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1. The photographs below represent three mammalian bones, labelled **E**, **F** and **G**.

E

F

G

(a) With reasons, identify the bones.

Bone	Identity	Reason(s)
E	.....	.....
	.....	.....
	.....	.....

(3 marks)

F	.....	.....
	.....	.....
	.....	.....

(2 marks)

G	.....	.....
	.....	.....
	.....	.....

(2 marks)

(b) Name the joints formed at the anterior and posterior ends of **F**.

Anterior end ..... (1 mark)

Posterior end ..... (1 mark)

(c) State the types of movement facilitated by the joint at the anterior end of specimen labelled **F**. (1 mark)

.....

.....

(d) (i) Name the substance found inside the living tissue of the specimen represented in photograph **F**. (1 mark)

.....

.....

(ii) State the function of the substance named in (d) (i) above. (1 mark)

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(e) (i) Name the muscle bundle usually attached onto the front of the specimen represented in photograph **F**. (1 mark)

.....

(ii) State the function of the muscle bundle named in (e) (i) above. (1 mark)

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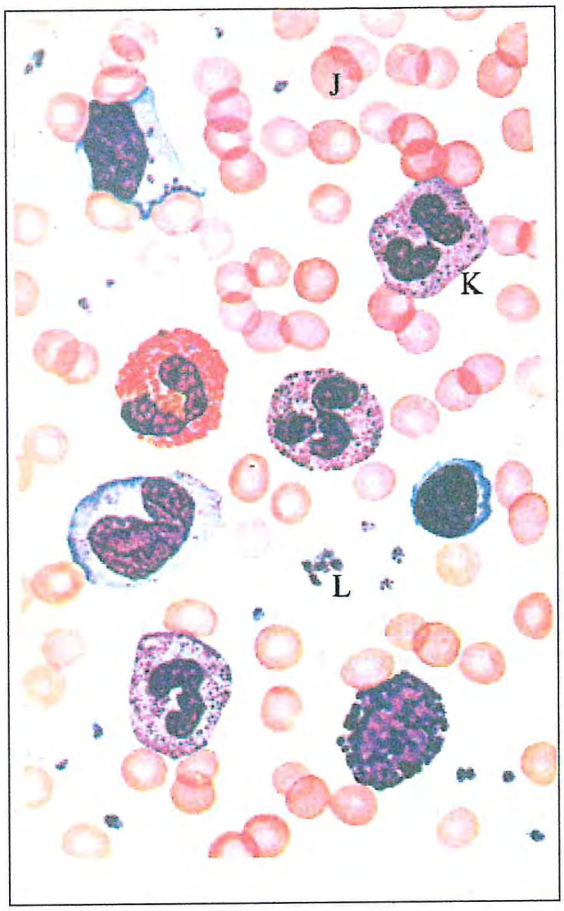
2. Below is a photograph of a blood smear from a normal individual. The arrangement is arbitrary and the number of blood elements is greater than what would normally occur in an actual microscopic field.



(a) (i) Name the blood elements labelled **J**, **K** and **L**. (3 marks)

J .....

K .....

L .....

(ii) State **one** function of each of the elements named in (a) (i) above. (3 marks)

J .....

K .....

L .....

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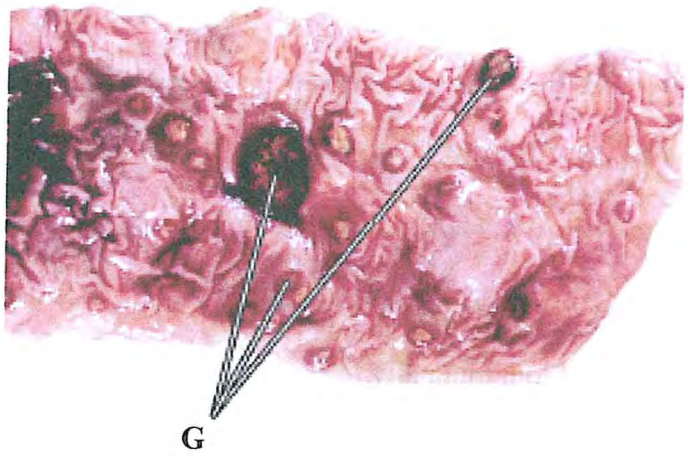
(b) The photograph below is of a section of the human intestines of a patient suffering from a common parasitic disease.



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(i) Name the disease. (1 mark)

.....

(ii) Name the parasite that causes the disease in (b) (i) above. (1 mark)

.....

(iii) State **two** control measures for the disease. (2 marks)

.....

.....

(iv) State the effects of having the parts labelled **G** in the patient's intestines. (2 marks)

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3. You are provided with a specimen labelled **H**. With the aid of a hand lens, examine the external features of the specimen.

(a) (i) What part of a plant is specimen **H**? (1 mark)

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(ii) Give **two** reasons for your answer in (a) (i) above. (2 marks)

.....

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(b) Open up specimen **H** longitudinally.

Use a hand lens to observe the internal structures of specimen **H**.

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(i) Draw and label the internal cut surface and associated structures of specimen **H**. (5 marks)

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(ii) Explain how you would determine the magnification of the drawing made in (b) (i) above. (2 marks)

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(iii) State the mode of dispersal for seeds of specimen **H**. (1 mark)

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(iv) Explain how seeds of specimen **H** are dispersed through the mode stated in (b) (iii) above. (3 marks)

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