

THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Secondary Education

231/3 -

BIOLOGY
(PRACTICAL)

- Paper 3

Nov. 2018 - 1¾ hours

Name Index Number

Candidate's Signature Date

Instructions to candidates

- (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	

A105



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)

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

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- (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)

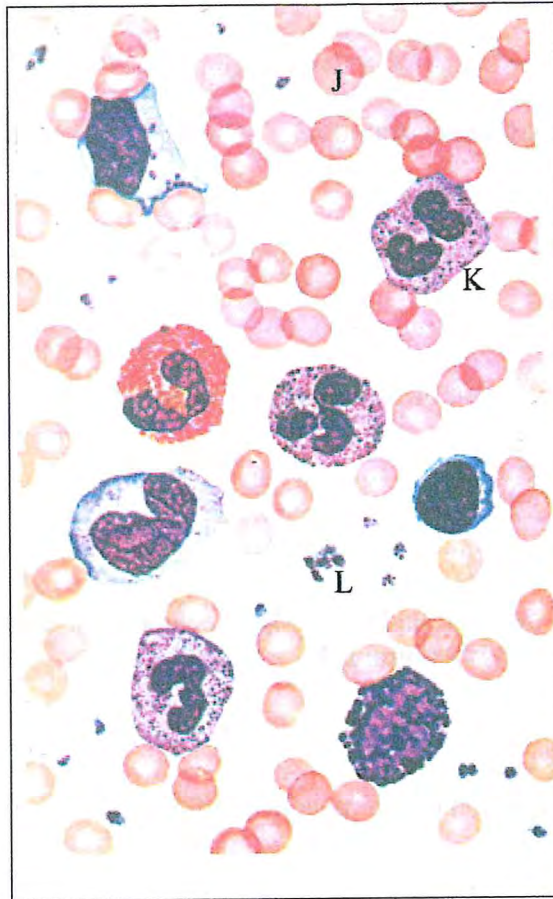
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- (ii) State the function of the muscle bundle named in (e) (i) above. (1 mark)

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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)

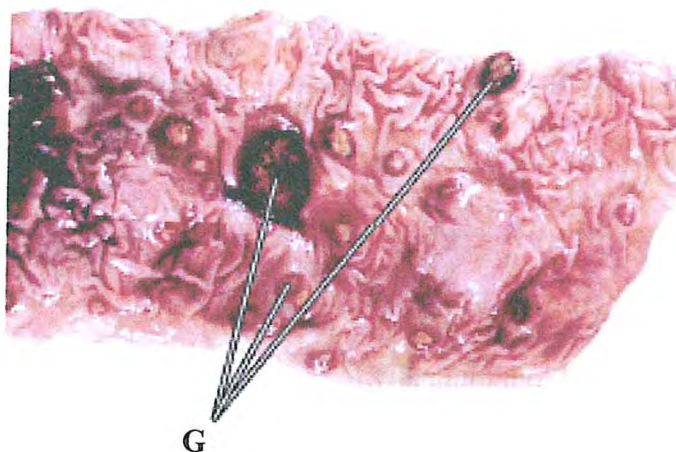
J

K

L



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



- (i) Name the disease. (1 mark)
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- (ii) Name the parasite that causes the disease in (b) (i) above. (1 mark)
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- (iii) State **two** control measures for the disease. (2 marks)
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- (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**.

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

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

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149

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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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