

KCSE TRIAL 2021
BIOLOGY PAPER 3

1. The diagram below shows bones obtained from the same mammal.



(a) Give the identity of each of the above bones. (4 marks)

- 1.....
- 2.....
- 3.....
- 4.....

(b) Draw a diagram of the bones, arranged as they appear in the mammal from which they were obtained from. (3 marks)

(c) On your diagram indicate by naming the types of joints between the bones. (2 marks)

(d) (i) Give **three** adaptations of bone labeled 3 to its functions. (3 marks)

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(ii) Give **three** adaptations of bone labeled 4 to its functions (4 marks)

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2. You are provided with solution labeled **J**, use the reagents provided to test for the food substances.

(a) Use the iodine solution to test for the food substance in solution **J**.

Food substance (1 mark)

..... Procedur

e (1 mark)

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Observation (1 mark)

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Conclusion (1 mark)

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(b) Use Benedict's solution to test for the presence of the food substance in solution **J**.

Food substance (1 mark)

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Procedure (1 mark)

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Observation (1 mark)

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Conclusion (1 mark)

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(c) Use DCPIP solution provided to test for the presence of the food substance in solution **J**

Food substance (1 mark)

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Procedure (1 mark)

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Observation (1 mark)

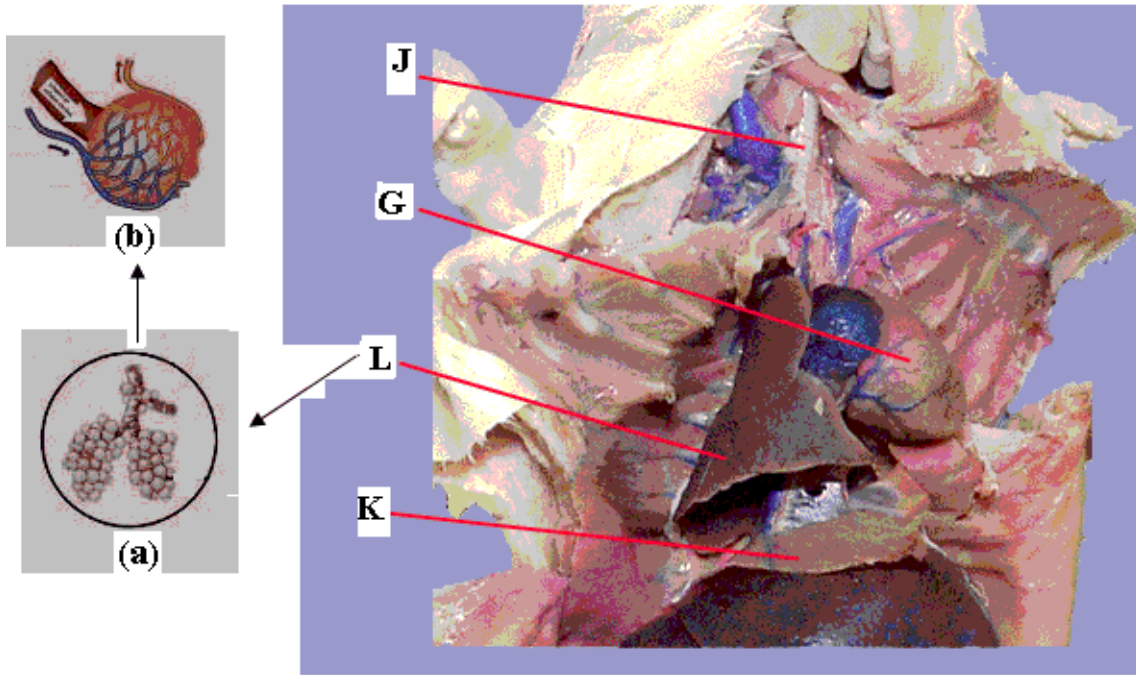
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Conclusion (1 mark)

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(d) When testing for non-reducing sugars explain the role of the following substances.

(i) Dilute hydrochloric acid. (1 mark)

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(ii) Sodium hydrogen carbonate (1 mark)

3. Study photograph labeled **V** which is a display of internal organs of a small mammal. Photograph **F** is an inset of internal structure of part labeled **L**. Study them carefully.



Photograph F

Photograph V

(a) Name the part of the mammalian body where the organs shown in the photograph are found. (1 mark)

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(b) Identify the organ system that consists of parts **J** and **L** in the photographs. (1 mark)

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(c) (i) Name the parts labelled **J** and **K**. (2 marks)

J.....K.....
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(ii) Give the function of the part labelled **G**. (1 mark)

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(d) State **two** adaptations of organ in **L** to its functions (2 marks)

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(e) **F (a)** is an inset of the internal structure of part **L** showing the position of the functional units of **L**. One of these functional units is shown in the inset **F (b)**.

(i) Identify the functional unit shown in inset **F(b)** and give its function. (2 marks)

Identity:

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Function:

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(ii) Give **one** observable feature in the structure you have named in (e)(i) above that adapt it to its function. (1 mark)

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