

CANDIDATES NAME: CLASS..... ADM NO.....

INDEX NO..... SIGN.....

DATE:

BIOLOGY PAPER TWO

231/2

TIME; 2.00 HOURS

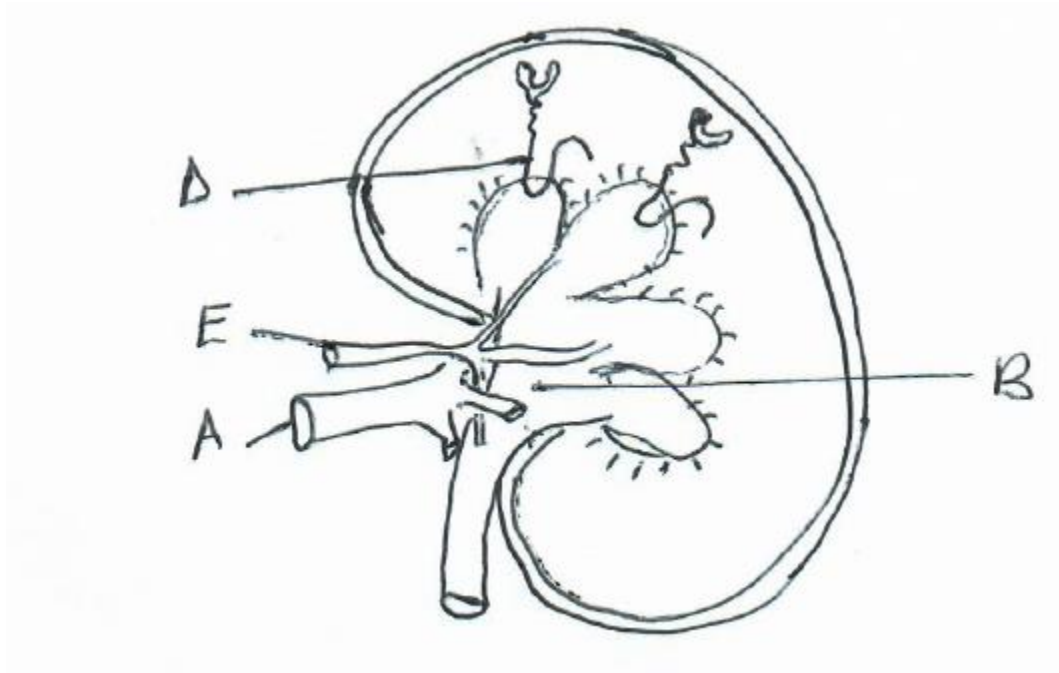
INSTRUCTIONS TO CANDIDATES

1. Write your Name, Class, Admission Number, KCSE Index Number, Date, and Sign in the spaces provided above.
2. This paper has two sections, A and B.
 - (a) Answer all questions in section A in the spaces provided.
 - (b) In section B, answer question 6(compulsory) and either Q7 or Q8 in the spaces provided under question 8

SECTION	Question	Max. Marks	Candidate's score
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
Total marks scored		80	

SECTION A: (Answer All the Questions)

Q.1 The figure below represents a Mammalian organ.



(a) State the name of the part labelled

(i) A..... (1mk)

(ii) B..... (1 mk)

(b) State how the part labelled D would vary in a desert rat and fresh water fish (2 marks)

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(c) State two differences in composition of blood between vessels A and E (2 Marks)

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(d) State two functions of the above organ

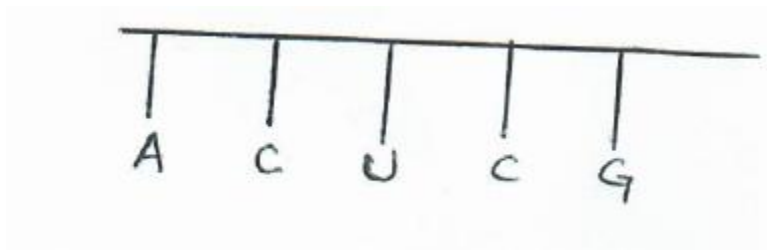
(2 Marks)

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Q.2 (a) Below is a section of a nucleic acid strand with a series of organic bases



(i) Is this a Deoxyribonucleic Acid or an Ribonucleic Acid molecule?

(1 Mark)

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(ii) Explain your answer in a(i) above

(1 mark)

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(iii) Draw the complementary Deoxyribonucleic Acid strand of the above strand.

(2 marks)

(b). State two differences between Deoxyribonucleic Acid and Ribonucleic Acid
(2 Marks)

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(c) Name two types of gene mutations (2 marks)

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(d) State one advantage of polyploidy in Agriculture (1 mark)

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Q3. (a) Differentiate between the following terms

(i) Protogyny and Protandry (2marks)

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(ii) Asexual & sexual reproduction (2 marks)

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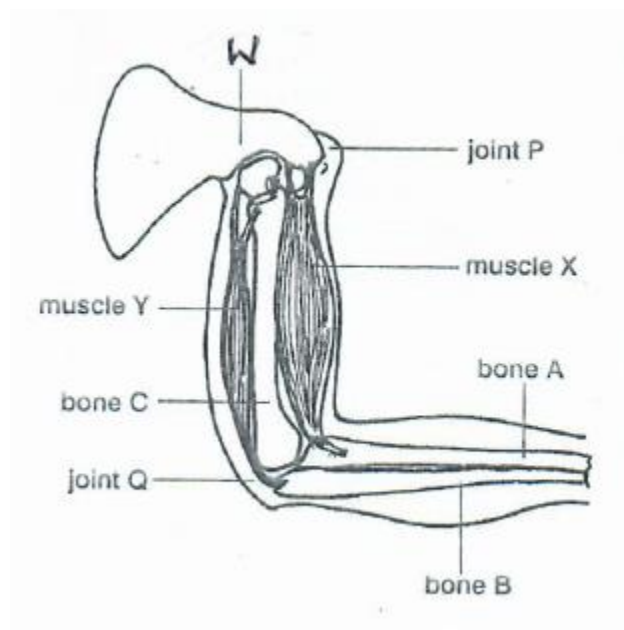
(b) State two disadvantages of sexual reproduction (2 marks)

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(c) Name two Accessory glands associated with the male reproductive system (2 marks)

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Q4. The following diagram shows the skeleton and some muscles of the human arm.



(a) Name bone

(i) A

(ii) C

(2 marks)

(b) (i) State what happens when muscle X contracts

(2 marks)

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(ii) What type of muscle is Y?

(1 mark)

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(c) Explain two adaptations of bone W

(2 marks)

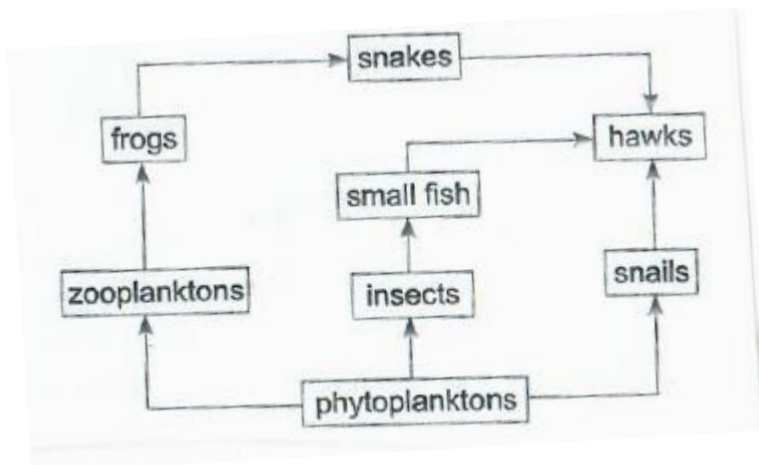
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(d) State the major difference between joints P and Q

(1 mark)

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Q.5 The diagram below represents a feeding relationship in an aquatic ecosystem



(a) Name the;

(i) Producers in this ecosystem

(1 mark)

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(ii) Organism that occupies the highest trophic level

(1 mark)

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(b) Write a food chain that ends with the hawk as a secondary consumer

(1 mark)

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(c) If all the frogs died, state two short term effects on this ecosystem.

(2 marks)

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(d) Oil spills on water bodies lead to death of fish. Explain

(1 mark)

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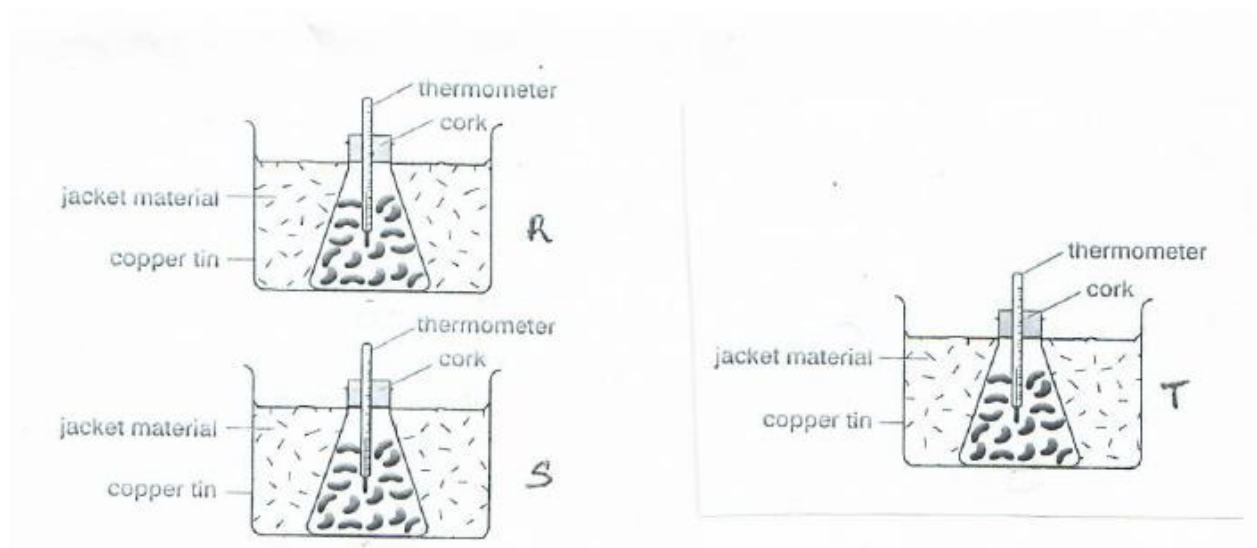
(e) Give two causes of water pollution other than oil spills

(2 marks)

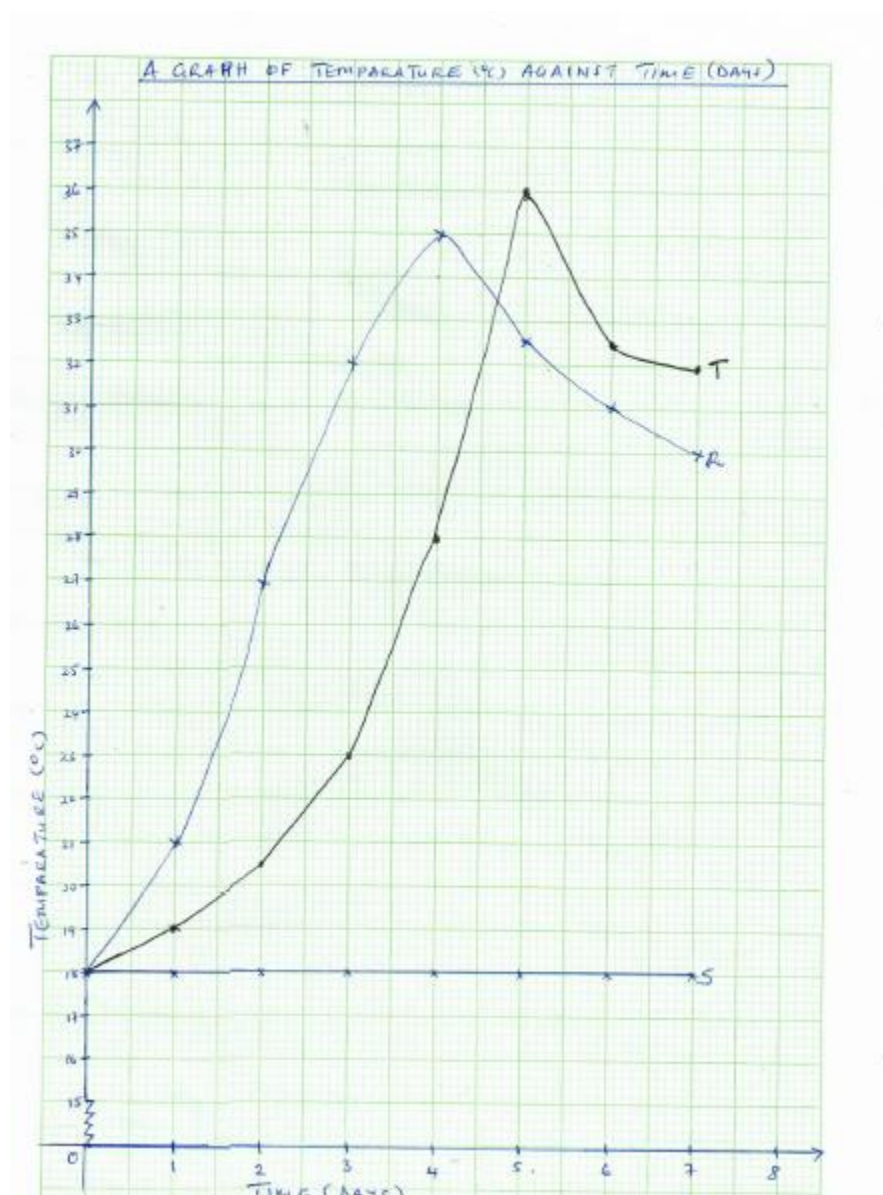
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SECTION B: (Answer Question 6 which is **COMPULSORY** and choose between 7 and 8 and answer it on the space provided below question 8)

Q6. A student set up the apparatus shown below to investigate a certain physiological process. In R, **beans soaked in water** were introduced. **Boiled beans sprinkled with antiseptic** and **just boiled beans** were introduced in S and T respectively.



The temperature in each set of apparatus was recorded for one week and the results obtained represented in the graph shown below.



- (a) Using the information on the graph and the set of apparatus shown above, state the aim of the experiment. (1 mark)

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- (b) At what temperature did the setups R and T have the same rate of respiration (1 mark)

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- (c) Account for the differences in the change in temperature in apparatus R and T:

- (i) From days zero to 2 (5 marks)

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(ii) After 5 days

(5 marks)

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(d) Explain why there was no temperature change in S for the whole week.

(3 marks)

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(e) (i) Suggest one way the set-up above could be improved for more accurate results. Give a reason for your answer.

(2 marks)

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(ii) Why was the setup S included in the experiment?

(1 mark)

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