

PC 5042  
 WASSCE (PC1) 2020  
**BIOLOGY 2**  
 Essay  
 1 hour 40 minutes

**2**

Surname

Other Names

Centre Number

Candidate's Number

**THE WEST AFRICAN EXAMINATIONS COUNCIL**  
**West African Senior School Certificate Examination (WASSCE)**  
**for Private Candidates, 2020 - First Series**

(PC1) 2020                      BIOLOGY                      1 hour 40 minutes  
 \                                      ESSAY  
    [ 70 marks ]

**Instructions to Candidates**

*Write your surname, other names, centre number and candidate's number in the spaces provided at the top of this booklet.*

*Please note that your name should be written in the order in which it was captured during registration.*

*In addition to writing your name on the front page of your booklet, write your full name in the area provided at the top of pages 3, 5 and 7 in the designated space "Candidate's Name:...".*

*Answer three questions in all: two questions from Section A, and in addition, all questions from Section B.*

*Write boldly and legibly in ink (blue or black) and state your answers precisely.*

*Use 2B pencil to draw where necessary.*

*Write your answers within the spaces provided.*

*Do not write answer(s) beyond the spaces provided for the question(s).*

*Do not write more than one answer on a line.*

*Do not write on the bar codes at the bottom of the pages.*

*Do not tear any part of this booklet. It is an examination malpractice if you do so.*

For Examiner's Use Only	
Question No.	Mark
1	
2	
3	
4	
5	
<b>Total</b>	



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Answer **three** questions in all: **two** questions from Section A, and in addition, the **only** question in Section B.

Large labelled diagrams should be used where they make an answer clearer. The names given for chosen species **must** be English or Scientific and **not** vernacular.

Credit will be given for clarity of expression and orderly presentation of answers.

SECTION A

Answer **two** questions **only** from this section.

1. (a) State **five** differences between *hormonal coordination* and *nervous coordination* in mammals.

<i>Hormonal coordination</i>	<i>Nervous coordination</i>

[5 marks]

- (b) State:

- (i) **two** functions of the *Follicle Stimulating Hormone* in humans;

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[2 marks]

- (ii) **two** functions of *Antidiuretic Hormone* in humans;

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[2 marks]

- (iii) **three** functions of *Adrenaline* in humans.

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[3 marks]



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(c) What happens to a mammalian hormone after performing its function?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2 marks]

(d) Describe **briefly** the role of *auxins* in geotropism.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [6 marks]

2. (a) In the table below, name **five** classes of food provided by plants for human consumption, **one** importance of **each** class in the diet and **one** example of **each** class.

<i>Food class</i>	<i>one importance</i>	<i>one example</i>

[15 marks]

(b) Explain **briefly** how insulin regulates the amount of glucose in the blood.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [5 marks]

3. (a) State **four** adaptive features of aquatic plants.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [8 marks]



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(b) (i) What is *secondary succession*?

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[2 marks]

(ii) List **three** factors that bring about changes in a climax community.

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[3 marks]

(iii) Explain **briefly** succession of plant in a pond.

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[3 marks]

(c) List **four** conditions in humans that are caused by mutation.

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[4 marks]

4. (a) What type of variation is tongue rolling?

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[1 mark]

(b) Give **two** other examples **each** of the type of variation stated in 4(a) which occur in:

(i) plants;

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[2 marks]

(ii) animals.

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[2 marks]

(c) The heights of twenty-two students in a school are measured in *cm*. The results were recorded as shown below:

150 127 123 131 101 122 132 117 132 134 101  
124 115 105 143 114 104 150 100 146 153 140



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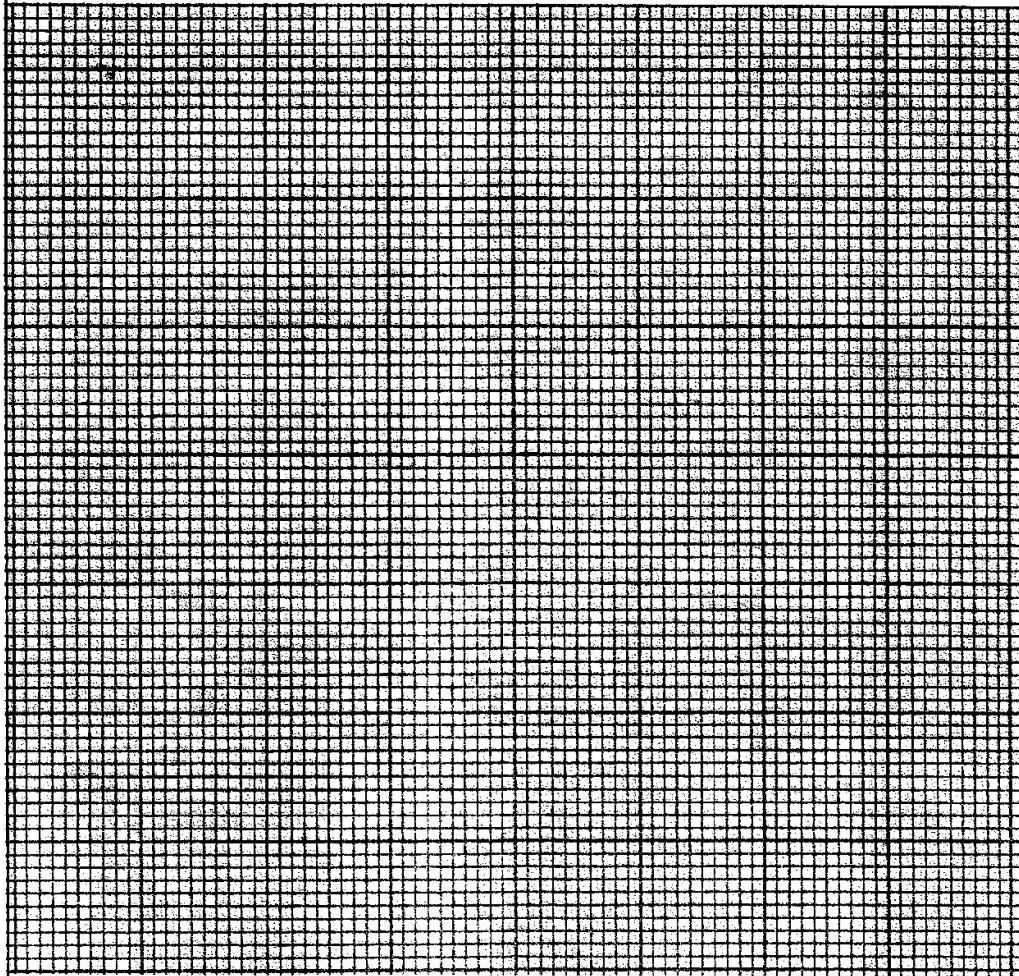
- (i) Complete the frequency table below.

<i>Height (cm)</i>	<i>Frequency</i>
100-109	
110-119	
120-129	
130-139	
140-149	
150-159	

[5 marks]

- (ii) On the graph sheet provided, draw a histogram of the frequency distribution using a scale of 1cm to 10 units on the x-axis and 1cm to 1 unit on the y-axis.

[10 marks]



SECTION B  
Answer the questions in this section.

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5. (a) List **five** structures that make up the dermis of the human skin.

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[5 marks]

- (b) State **two** similarities between the process of *decay* and *digestion*.

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[2 marks]

- (c) Explain **briefly four** ways by which plants and animals are interdependent in a forest habitat.

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[ 4 marks]

- (d) List **two** examples **each** of:

- (i) density-dependent factors as used in ecology;

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[2 marks]

- (ii) density-independent factors as used in ecology.

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[2 marks]



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(e) (i) Explain **briefly** the behavioural adaptations of honeybees.

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[4 marks]

(ii) State **two** beneficial effects of bees to humans.

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[2 marks]

(f) State **three** ways by which animals survive unfavourable conditions.

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[3 marks]

(g) State **six** functions of a Public Health Authority.

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[6 marks]

