

**Year 12 Human Biology**

**Extended Response: Homeostasis**

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| Name: |
| Teacher: |

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|  | Marks Available | Marks Achieved |
| Question 1 | 25 |  |
| Question 2 | 10 |  |
| Total | 35 |  |

Assessment Time: 50 minutes

Weighting: 5%

You must **answer all questions** on the lined paper provided. Please clearly number questions and use the paper at the back of the booklet if you wish to plan your answer. Clearly label your plan.

**Question 1)**

The homeostatic regulation of **water** and **oxygen** concentrations of the blood are both examples of negative feedback systems.

1. Discuss the differences between the involuntary homeostatic mechanisms at each stage of these feedback loops. In your answer assume that water concentration of the blood is high and oxygen concentration of the blood is very low.

(23 marks)

1. Discuss the reasons why we have voluntary control over breathing.

(2 marks)

**Question 2)**

The inability to maintain optimal blood glucose levels results in the condition called diabetes mellitus. This condition occurs in two different forms known as Type 1 and Type 2.

In what ways are these **two** forms of diabetes mellitus similar and how do they differ?

(10 marks)

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