**Yr. 12 ATAR Human Biology ATHBY**

**Task 11: Extended Response**

**Conditions**

Time for task:

Part A: You have one week to research the topic and complete notes. You **may not** use these notes for Part B.

Part B: 30 minutes for in class validation – examination-style extended answer question.

**Task weighting: 3 %**

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**Part A: Research Notes (5 marks)**

* Developments in biotechnology have increased the access to genetic information of species, population and individuals existing now or in the past. The interpretation and use of this information may be open to ethical considerations. the incidence of genetic diseases in particular populations illustrates the effects of different factors on the dynamics of gene pools, including the incidence of Tay-Sachs disease, thalassemia and sickle-cell anaemia
* biotechnological techniques provide evidence for evolution by using PCR (to amplify minute samples of DNA to testable amounts), bacterial enzymes and gel electrophoresis to facilitate DNA sequencing of genomes

1a. Research how the body’s homeostatic processes ensures each of the following factors remain within the required tolerance limits to maintain homeostasis. One A4 page of notes is required for each factor. (3 marks)

* Temperature
* Blood sugar
* Gases
* Composition of body fluids

Your research must include for each factor:

* A general overview of importance
* The role of associated endocrine glands and divisions of the nervous system in maintaining homeostasis
* Negative Feed Back loops
* Any behaviour mechanisms that assist in maintain homeostasis
* Impact of homeostatic dysfunctions
* Any other critical information

b. You must include your references in a standard referencing format of your choice; for example Harvard. Hand this in as a separate sheet attached to your note-taking. (2 marks)

**Part B: In-class assessment 20 marks**

Answer each part of the following question on the line paper provided.

Responses could include clearly labelled tables and graphs; clearly labelled diagrams with explanatory notes; lists of points with linking sentences and annotated flow diagrams with introductory notes.

Question provided during class time on day of validation activity.