

2001 HIGHER SCHOOL CERTIFICATE EXAMINATION

Biology

Section I – Part B (continued)

Marks

Question 19 (6 marks)

In your Biology course, you performed a first-hand investigation to gather information about structures in plants that assist in the conservation of water.

(a) Describe the procedure you followed.

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We investigated the use of stomates on leaves on plants, and how during particular times in the day the stomates would be open or closed to stop loss of water. We kept some plants covered out of the sun to see if they lost moisture slower than plants left exposed to the sun.

(b) Identify TWO safe work practices needed during this investigation.

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If we dissected any part of the plant to see the structure and how water was transpired - e.g. xylem and phloem cells, then we had to be safe when using scalpels, knives and always had to wash our hands.

Endothermic \Rightarrow inside
 Ectothermic \Rightarrow outside

Marks

Question 20 (7 marks)

Name ONE example of an Australian endothermic animal and ONE example of an Australian ectothermic animal, and summarise their responses to the following environmental changes. Give your answer in the form of a table.

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Change 1: The ambient temperature rises well above the average daily temperature range.

Change 2: The ambient temperature drops well below the average daily temperature range.

Endothermic animal: Common Wombat.....

Ectothermic animal: Blue tongued lizard.....

	Endothermic \rightarrow Common Wombat	Ectothermic \Rightarrow Blue tongued lizard
Change 1	regulates body temp. with increased sweat production	Sunnies himself less, (in sun in the morning and not in afternoon)
Change 2	means regulates body temperature with the decreased sweat production	Sunnies himself more (in sun all day).

Question 21 (4 marks)

Sutton, Boveri and Morgan worked in the field of genetics.

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Describe the contribution made by TWO of these scientists to the understanding of the chromosomal nature of inheritance.

Boveri discovered that chromosomes can be passed on from one generation to the next and that they pass on genetic information. Sutton also discovered the genes are carried on the chromosomes. He also agreed with Mendel's theories and found that genes possess certain characteristics. Morgan discovered sex-linked chromosomes which means that only some genes can be passed on to the same gender. He used *Drosophila* flies to discover sex-linked genes.