

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.

4

Found a plant and then sliced it horizontally so as we could see ~~the~~ down the stem.

The use of stomas and lenticles help to conserve the water in plants. Also we looked at how translocation worked in xylem to keep the water conserved in the plant for a period of time.

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

2

Be careful with the scalpels used so as you didn't cut yourself.

Wear safety goggles so nothing harmful got into the eye area.

**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.

7

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: ~~Blue tongue lizard~~ - Kookaburra

Ectothermic animal: ~~Blue tongue lizard~~ - Blue tongue lizard

change 1	The Kookaburra's temperature slightly rises by one or two degrees. Blue tongue lizard changes with the environment and seeks shelter.
change 2	The Kookaburra's temperature slightly drops because it can maintain its body temperature. Blue tongue lizard seeks warmth from a rock and basks on the rock for warmth.

**Question 21** (4 marks)

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

4

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

Sutton and Boveri showed that chromosomal nature of inheritance was based around dominant and recessive genes, they showed through the use of flow diagrams of a disease and other inherited condition were passed down through the generations.