

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
- gathered samples of plants from teacher and other sources
 - divided same plant samples into small groups and put these groups on tables around the room
 - observed plant structures
 - recorded plant structures in table form
- (b) Identify TWO safe work practices needed during this investigation. 2
1. Make sure to be careful when touching plant, in case of spines or poison, etc.
 2. Do not remove plants from environment, if it is to be a known habitat for other organisms.

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: Red Kangaroo

Ectothermic animal: Desert Lizard

change 1 -	<u>Red Kangaroo</u> The Red Kangaroo can withstand high temps due to its light coloured fur, but for further heat loss the Red kangaroo licks its paws and seeks shade.
change 2 -	The Red Kangaroo is able to withstand cooler temps due to the thin layer of fat and its fur coat, they both acts as insulators.
change 1 -	<u>Desert Lizard</u> Desert lizards bask early in the morning, their body temp rises to optimal levels. If it gets too hot then they will seek shade or alternate between shade and basking sites to maintain body temp.
change 2 -	The Desert Lizard will find a basking site and will flatten its whole body to the sun to gain maximum exposure to the sun and to get the body temp to desired levels.

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 and Morgan Sutton discovered that ~~that~~ inheritance was due to the genes on chromosomes, and if two characteristics were on the one gene, then both characteristics were inherited. Also the chromosomes during meiosis go through stages such as Crossing over and Random Segregation, to produce your genetic code of inheritance.