1.6 Variation, Classification and Adaptation: Test Pack

Calculator allowed · about 20 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Quickfire: circle the correct letter for each question.

(a) Differences between individuals of the same species are called: **(1)**

- ☐ A) adaptation
- ☐ B) variation
- ☐ C) classification
- ☐ D) reproduction

(b) Which of these characteristics shows continuous variation? **(1)**

- ☐ A) blood group
- ☐ B) height
- ☐ C) ability to roll your tongue
- ☐ D) whether an earlobe is attached or free

(c) Differences between two different species, such as a dog and a cat, are mainly the result of: **(1)**

- ☐ A) environment only
- ☐ B) different genes
- ☐ C) random chance only
- ☐ D) different adaptations only

(d) A characteristic such as body mass, which is affected by both genes and by diet and exercise, shows: **(1)**

- ☐ A) continuous variation
- ☐ B) discontinuous variation
- ☐ C) no variation
- ☐ D) classification

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2 Grey squirrels were introduced to the UK and compete with the native red squirrel for the same food and habitat. In one woodland, the red squirrel population was 800 in the year before grey squirrels arrived. Five years after grey squirrels arrived, the red squirrel population had fallen to 240.

(a) Calculate the percentage decrease in the red squirrel population over the five years. **(3)**

(b) Suggest the main reason for this decrease. **(1)**

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3 State the definition of a species.

(1)

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4 Adaptations can be structural (a body part), behavioural (a way an animal acts) or functional (something that happens inside the body). Classify each adaptation below.

(a) A polar bear has a thick layer of fur and fat. **(1)**

(b) A camel's body breaks down stored fat to release water and energy when food and water are scarce. **(1)**

(c) Some birds migrate to warmer countries in winter. **(1)**

(d) A cactus has sharp spines instead of broad leaves. **(1)**

(e) A hedgehog hibernates during the coldest months. **(1)**

(f) Some Arctic fish produce a natural antifreeze protein in their blood. **(1)**

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Mark scheme · 1.6 Variation, Classification and Adaptation: Test Pack

Question 1

(a) B (variation) cao **B1**

(a) Answer: **B) variation**

(b) B (height) cao **B1**

(b) Answer: **B) height**

(c) B (different genes) cao **B1**

(c) Answer: **B) different genes**

(d) A (continuous variation) cao **B1**

(d) Answer: **A) continuous variation**

Question 2

(a) decrease = 800 - 240 = 560 **M1**

(a) (560 / 800) x 100 **M1**

(a) = 70% decrease cao **A1**

(a) Answer: **70% decrease**

(b) competition with grey squirrels for the same food and habitat, so fewer resources are available for red squirrels, oe **B1**

(b) Answer: **Competition with grey squirrels for the same limited food and habitat means fewer resources are available for red squirrels.**

Question 3

a group of organisms that can breed (interbreed) together to produce fertile offspring, oe **B1**

Answer: **A group of organisms that can breed together to produce fertile offspring.**

Question 4

(a) structural cao **B1**

(a) Answer: **Structural**

(b) functional cao **B1**

(b) Answer: **Functional**

(c) behavioural cao **B1**

(c) Answer: **Behavioural**

(d) structural cao **B1**

(d) Answer: **Structural**

(e) behavioural cao **B1**

(e) Answer: **Behavioural**

(f) functional cao **B1**

(f) Answer: **Functional**

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