AQA GCSE BIOLOGY (HIGHER) · 8461

BIOLOGY



EXAM QUESTION PACK

4.6.4 CLASSIFICATION OF LIVING ORGANISMS

SCORE	PERCENTAGE
/36	%

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Q1.

Figure 1 shows a ring-tailed lemur.

Figure 1



The table below shows part of the classification of the ring-tailed lemur.

Classification group	**Name**
Kingdom	*Animalia*
Phylum	*Chordata*
	Mammalia
	Primates
	Lemuroidea
Genus	*Lemur*
	catta

(a) Complete the table above to give the names of the missing classification groups.

(2)

(b) Give the binomial name of the ring-tailed lemur.

Use information from the table above.

_____

(1)

Lemurs are only found on the island of Madagascar.

Madagascar is off the coast of Africa.

Scientists think that ancestors of modern lemurs evolved in Africa and reached Madagascar about 50-60 million years ago.

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Today there are many species of lemur living on Madagascar.

Figure 2 shows information about water currents.

Figure 3 shows the distribution of three species of lemur on Madagascar.

Figure 2

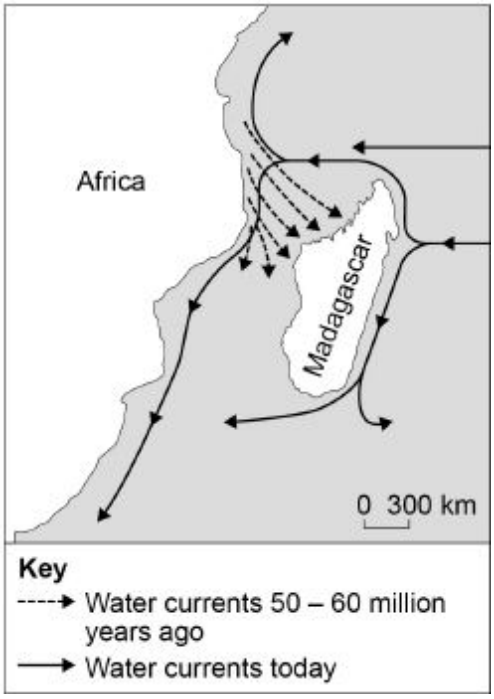
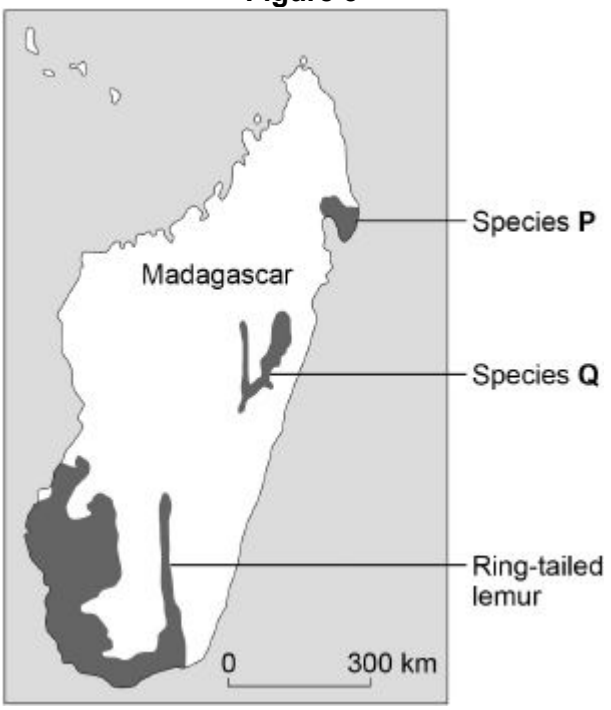


Figure 3



(c) Suggest how ancestors of modern lemurs reached Madagascar.

_____

_____

(1)

(d) Describe how the ancestors of modern lemurs may have evolved into the species shown in **Figure 3**.

_____

_____

_____

_____

_____

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_____

(5)

(Total 9 marks)

Q2.

Living organisms are classified into the following groups:

- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species

(a) Which scientist first suggested this type of classification system?

Tick **one** box.

Alfred Russel Wallace	☐
Carl Linnaeus	☐
Charles Darwin	☐
Gregor Mendel	☐

(1)

The stone plant, *Lithops bromfieldi*, is adapted to live in very dry deserts.

Figure 1 shows several stone plants.

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Figure 1



(b) Give the genus to which the stone plant belongs.

_____

(1)

(c) The stone plant has many adaptations that help it to survive in the desert.

Draw **one** line from each adaptation to how the adaptation helps the stone plant to survive.

Adaptation	How the adaptation helps survival
	Can trap a lot of light
Plants look like stones	Absorb water from deep in the ground
Leaves with thick, waxy cuticles	Help cross-pollination
Many long, branching roots	Are not easy to see and so are not eaten
Thick, fleshy leaves	Reduce water loss
	Store water

(4)

The jerboa is a small desert animal.

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Figure 2 shows a jerboa.

Figure 2



The jerboa is adapted for survival in the desert.
The jerboa spends the daytime in its underground burrow.
The jerboa only leaves its burrow to look for food during the night.

(d) Describe how these adaptations help the jerboa to survive in the desert.

_____

_____

_____

_____

(2)

(e) What type of adaptations are described in Question (d)?

Tick **one** box.

Behavioural ☐

Functional ☐

Structural ☐

(1)

(Total 9 marks)

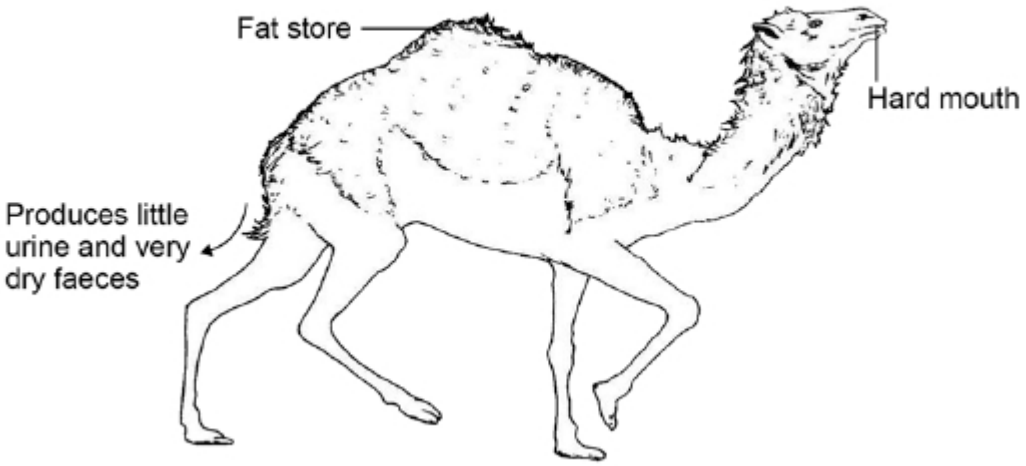
Q3.

Figure 1 shows a type of camel called a dromedary (*Camelus dromedarius*).

The dromedary lives in hot, dry deserts.

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Figure 1



(a) One adaptation of the dromedary is 'temperature tolerance'.

This means that the animal's body temperature can rise by up to 6 °C before it starts to sweat.

Explain how temperature tolerance can help the dromedary to survive in the desert.

_____

_____

_____

_____

(2)

(b) Three more adaptations of the dromedary are given in **Figure 1**.

Give a reason why each adaptation helps the animal survive in the desert.

Fat store _____

_____

Produces little urine and very dry faeces _____

_____

Hard mouth _____

_____

(3)

There are several species of the camel family alive today.

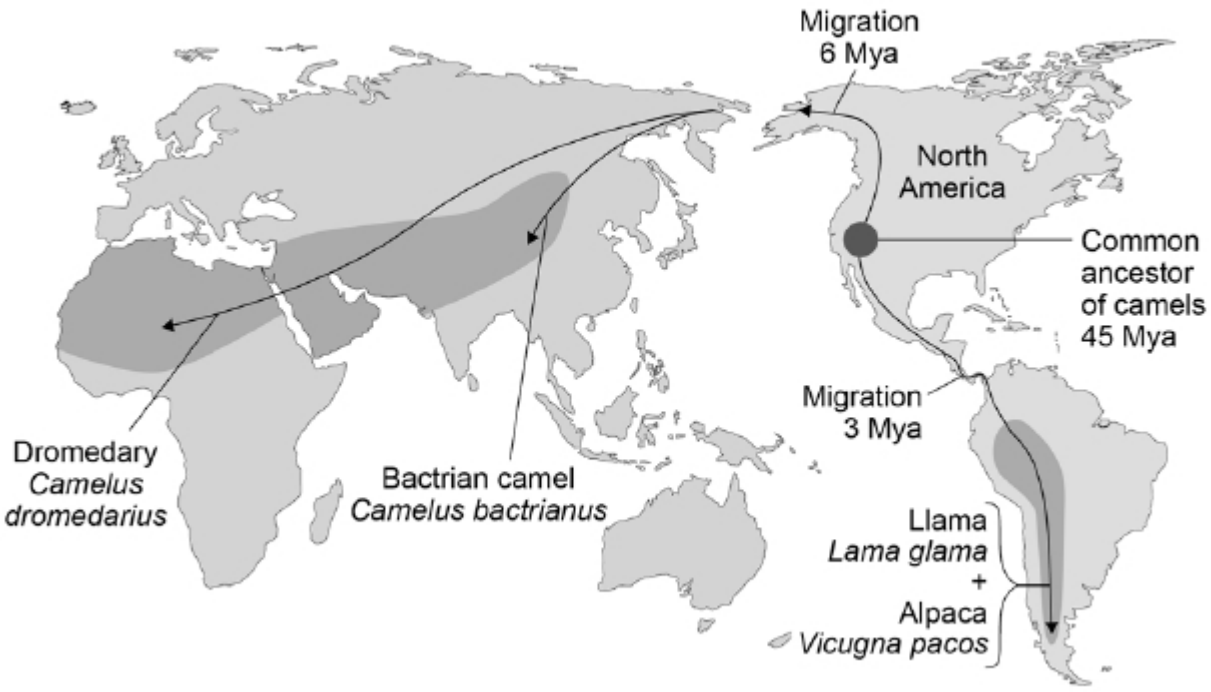
Scientists think these species evolved from a common ancestor that lived in North America about 45 million years ago (Mya).

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Figure 2 shows:

- where four modern species of the camel family live today
- how the ancestors of these camels migrated from North America.

Figure 2



(c) Which **two** of the four modern species of camel do scientists believe to be most closely related to each other?

Give the reason for your answer.

_____ and _____

Reason _____

_____

(1)

(d) Describe the type of evidence used for developing the theory of camel migration shown in **Figure 2**.

_____

_____

_____

_____

(2)

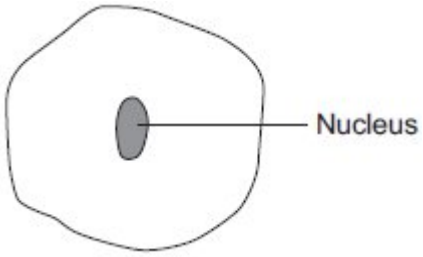
(e) Explain how several different species of camel could have evolved from a common ancestor over 45 million years.

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(6)
(Total 14 marks)

Q4.

The diagram below shows a cell.



(a) Draw a ring around the correct answer to complete each sentence.

(i) In the nucleus of a cell, genes are part of

chromosomes.
membranes.
receptors.

(1)

(ii) Different genes control different

characteristics
gametes
nuclei

of an organism.

(1)

(iii) Studying the similarities and differences between organisms allows us to

classify
clone
grow

the organisms.

(1)

(b) Complete the following sentence.

Living things can be grouped into animals, microorganisms and _____ .

(1)
(Total 4 marks)

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