AQA GCSE BIOLOGY (HIGHER) · 8461

BIOLOGY



MARK SCHEME

4.6.4 CLASSIFICATION OF LIVING ORGANISMS

SCORE	PERCENTAGE
/36	%

STEMUP

These questions belong to AQA, not to us.

The examination questions, mark schemes and examiner comments in this pack were written and published by AQA. They are past assessment materials, reproduced here so that students can revise from them.

What we do not own

STEMUP is not affiliated with AQA and does not own, and makes no claim to own, any of the question, mark scheme or examiner report material in this pack. AQA has not endorsed, approved or been involved in the production of it. AQA and the qualification titles used here belong to their respective owners and appear for identification only.

Where to find the originals

AQA publishes its past papers, mark schemes and examiner reports. Always check the current specification at aqa.org.uk before you revise, because content and wording can change between series.

If you hold the rights to any material in this pack and would like it amended or removed, contact admin@stemup.co.uk and we will act on it.

Q1.

(a)

Classification group	Name
Class	*Mammalia*
Order	*Primates*
Family	*Lemuroidea*
Species	*catta*

*all 4 correct = **2** marks*
*2 or 3 correct = **1** mark*
*0 or 1 correct = **0** marks*

2

(b) Lemur catta

ignore capitalisation / non-capitalisation of initial letters
ignore italics / non-italics
ignore underlining / non-underlining

1

(c) carried by (favourable) currents on masses of vegetation

allow description of currents from Figure 2
ignore swimming

1

(d) isolation of different populations

1

habitat variation between lemur populations

allow examples − biotic (e.g. food / predators) or abiotic (e.g. temperature)

1

genetic variation or mutation (in each population)

1

better adapted survive (reproduce) **and** pass on (favourable) allele(s) to offspring

*allow natural selection **or** survival of the fittest*
***and** pass on (favourable) allele(s) to offspring*
allow gene(s) / mutation as an alternative to allele(s)

1

(eventually) cannot produce fertile offspring with other populations

allow cannot reproduce 'successfully' with other populations
ignore cannot reproduce unqualified

1

[9]

STEMUP.CO.UK

Q2.

(a) Carl Linnaeus

1

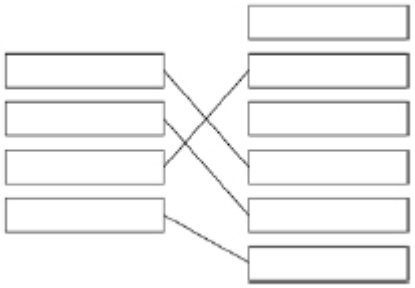
(b) Lithops

extras cancel

ignore capitalisation / non-capitalisation

1

(c)



***1** mark per line*

extra line from adaptation negates the mark for that adaptation

1
1
1
1

(d) any **two** from:

- cooler underground / at night
  or
  the jerboa can keep cool
- loses less water
  or
  sweats less
- less likely to be seen (by predators / prey)

2

(e) behavioural

1

[9]

Q3.

(a) less sweating so less water loss

1

(as) no / little water available in desert

1

(b) (fat store) can be metabolised / respired to water

1

(little urine…) conserve water

1

(hard mouth) not damaged by spines on plants / on food
or
not damaged by hard / dry food

1

STEMUP.CO.UK

(c) dromedary / *C.dromedarius*
and bactrian / *C. bactrianus*
no mark for the names, but must be identified
because
same genus
ignore 'both are Camelus'

1

(d) any **two** from:

- the fossil record
- oldest fossils in N. America
  or
- newer fossils in S. America / in Asia / in Africa
  *allow numbers for ages (45 Mya **and** 3 Mya / 6 Mya)*

- chemical / DNA analysis of living species
  allow radioactive dating of fossils

2

(e) isolation of separate camel populations by sea
or
by mountains

1

habitat variation / described between populations
allow examples – biotic (e.g. food / predators) or abiotic

1

genetic variation / mutation in each population

1

45 million years is sufficient time to accumulate enough mutations

1

natural selection
or
better adapted survive to reproduce

1

pass on favourable allele(s)
allow gene(s)

1

[14]

Q4.

(a) (i) Chromosomes

1

(ii) Characteristics

1

(iii) Classify

1

(b) Plants
ignore algae

1

STEMUP.CO.UK

[4]

STEMUP.CO.UK