Questions are for both separate science and combined science students

Q1.

Carl Linnaeus invented a classification system that places organisms into groups.

(a) What is the name of the largest classification group in Linnaeus's system?

Tick (✓) **one** box.

- Family ☐
- Kingdom ☐
- Order ☐

(1)

(b) Linnaeus gave each species a binomial name.

Which **two** classification groups form the binomial name?

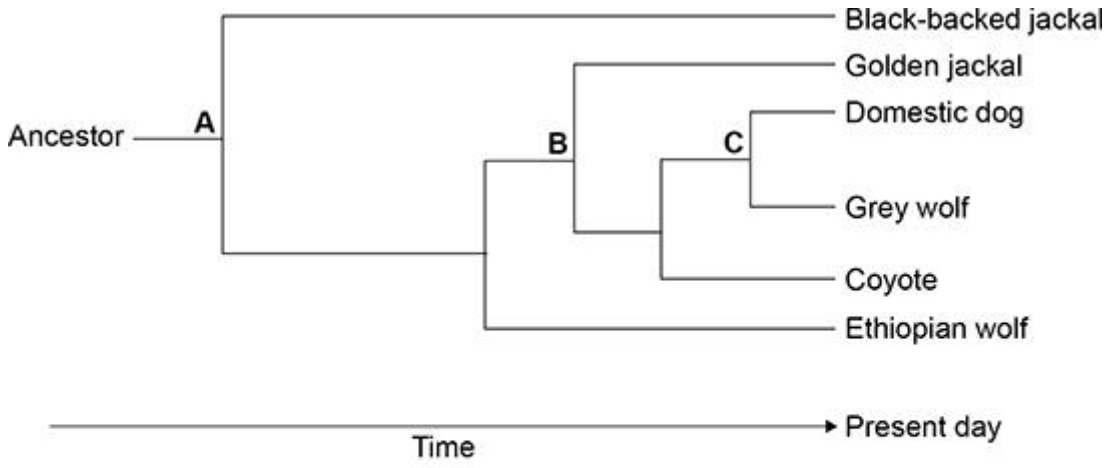
Tick (✓) **two** boxes.

- Class ☐
- Genus ☐
- Order ☐
- Phylum ☐
- Species ☐

(2)

Scientists think that the animals in **Figure 2** all evolved from an ancestor that lived about 6 million years ago.

The figure below shows how the animals may have evolved.



Key

A 6 million years ago
B 3 million years ago
C 32 thousand years ago

(c) What was the **most recent** time that the domestic dog and the golden jackal shared a common ancestor?

Tick (✓) **one** box.

32 thousand years ago ☐

3 million years ago ☐

6 million years ago ☐

(1)

(d) Which present-day animal in above figure is the **most distant** relative of the domestic dog?

_____

(1)

Scientists think the grey wolf and the domestic dog had a common ancestor.

The common ancestor:

- lived about 32 thousand years ago
- is now extinct.

(e) Give **two** possible causes of extinction.

1 _____

_____

2 _____

_____

(2)

(f) 32 thousand years ago, humans hunted other animals for food.

Wolves also hunted other animals for food.

Suggest **one** reason why wolves began to follow groups of humans.

_____

_____

(1)

(g) Some wolves are more aggressive than other wolves.

Describe how selective breeding of wolves could produce a domestic animal that is less aggressive than the wolf.

_____

_____

_____

_____

(2)

(Total 10 marks)

Q2.

Many different species can live together in the same habitat.

(a) What name is given to all of the organisms living in the same habitat?

Tick (✓) **one** box.

A community ☐

A food chain ☐

A population ☐

An ecosystem ☐

(1)

Figure 1 shows four species of bird from the same habitat in the UK.

Figure 1

Brambling (*Fringilla montifringilla*)

Bullfinch (*Pyrrhula pyrrhula*)

Chaffinch (*Fringilla coelebs*)

Goldfinch (*Carduelis carduelis*)

(b) Which species of bird in **Figure 1** do scientists think are most closely related?

Tick (✓) **one** box.

- Brambling and chaffinch ☐
- Brambling and goldfinch ☐
- Bullfinch and chaffinch ☐
- Bullfinch and goldfinch ☐

(1)

(c) Scientists think the brambling and the bullfinch belong to different species.

What evidence is used by scientists to classify the brambling and the bullfinch as different species?

Tick (✓) **one** box.

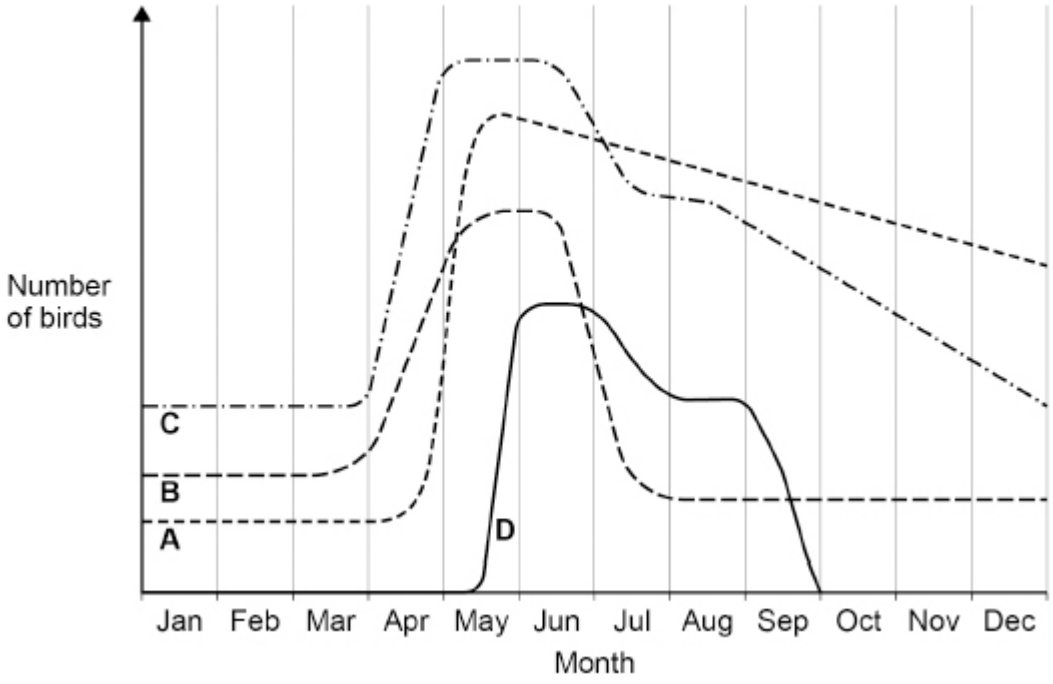
- The brambling and the bullfinch are different sizes. ☐
- The brambling and the bullfinch cannot breed together to give fertile offspring. ☐
- The brambling and the bullfinch live in different parts of the habitat. ☐
- The brambling eats mainly seeds and the bullfinch eats mainly insects. ☐

(1)

Four other species of bird (**A**, **B**, **C** and **D**) live in a habitat in the UK.

Figure 2 shows how the numbers of each species of bird varied during one year.

Figure 2



Use information from **Figure 2** to answer parts (d) to (f)

(d) Describe what happens to the number of birds of species **A** during the year.

_____

_____

_____

_____

_____

_____

(3)

(e) In June and July, a disease affected the populations of some of the species.

Which species had the **lowest** resistance to the disease?

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

(1)

(f) One species migrates between the UK and other countries.

Which species migrates between the UK and other countries?

Give a reason for your answer.

Species _____

Reason _____

_____

_____

(1)

(Total 8 marks)

Q3.

Living organisms can be classified into groups.

Trilobites are animals that lived in the sea 400 to 500 million years ago.

The table below gives the classification of two species of trilobite.

Classification group	**Trilobite A**	**Trilobite B**
	Animalia	*Animalia*
Phylum	*Arthropoda*	*Arthropoda*
Class	*Trilobita*	*Trilobita*
Order	*Ptychopariida*	*Ptychopariida*
Family	*Alokistocaridae*	*Marjumiidae*
	Elrathia	*Modocia*
Species	*kingii*	*typicalis*

(a) Complete the table above.

Choose answers from the box.

Community	**Genus**	**Kingdom**	**Mammal**	**Population**

(2)

(b) Which scientist invented the classification system given in the table above?

Tick (✓) **one** box.

Darwin ☐

Lamarck ☐

Linnaeus ☐

Mendel ☐

(1)

(c) What is the binomial name of trilobite **A**?

Use information from above table.

Tick (✓) **one** box.

Arthropoda kingii ☐

Elrathia kingii ☐

Trilobita kingii ☐

(1)

Figure 1 shows fossils of the two species of trilobite.

Figure 1

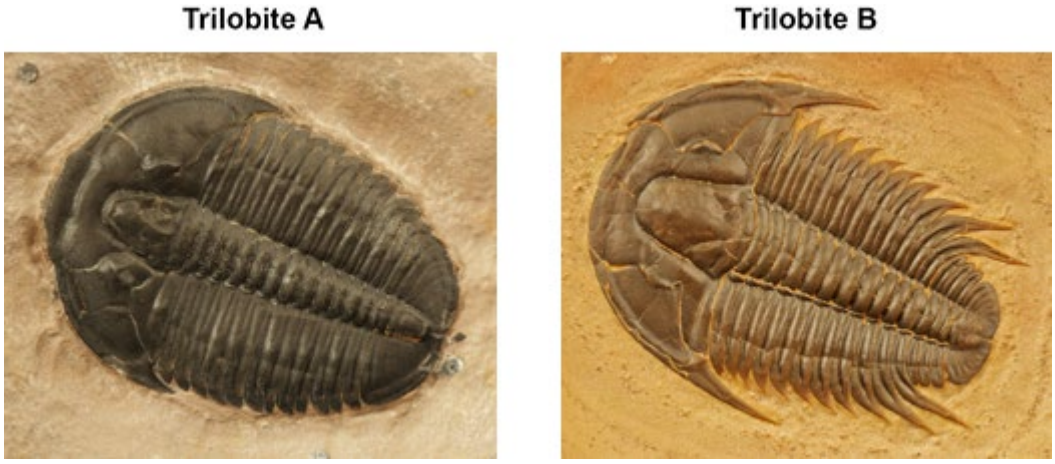
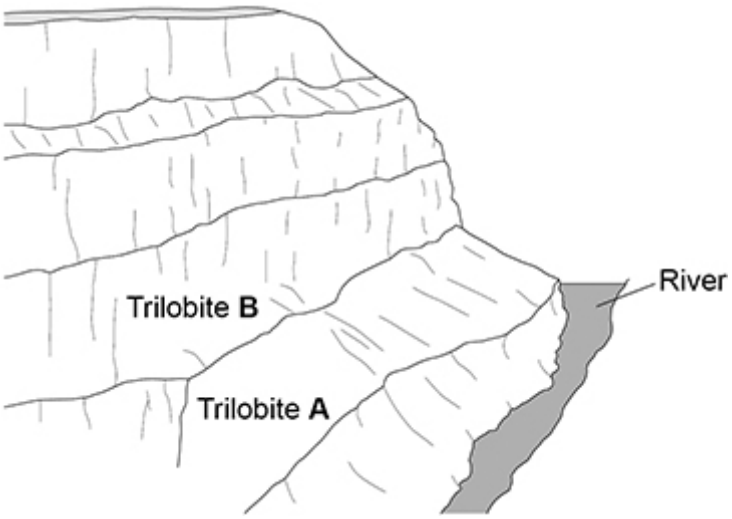


Figure 2 shows:

- layers of rock in a cliff
- where the trilobite fossils were found.

Figure 2



A scientist made the hypothesis:

'Trilobite **B** may have evolved from trilobite **A**.'

(d) What **two** pieces of evidence from **Figure 1** and **Figure 2** support the scientist's hypothesis?

Tick (✓) **two** boxes.

Trilobite **A** and trilobite **B** were in the same type of rock. ☐

Trilobite **A** was found in older rocks than trilobite **B**. ☐

Trilobite **B** has a smaller mass than trilobite **A**. ☐

Trilobite **B** is a different colour from trilobite **A**. ☐

Trilobite **B** is more complex than trilobite **A**. ☐

(2)

(e) Trilobites are animals that lived in the sea.

Complete the sentences about how the fossils of trilobites **A** and **B** were formed.

Choose answers from the box.

acids	**bones**		**hard parts**	**minerals**
	rocks	**sediments**	**soft parts**	

The animal dies and falls to the sea bed.

The animal is buried in _____.

The _____ of the animal decay.

The remains which do **not** decay are replaced by _____.

(3)

(f) Trilobites **A** and **B** are now extinct.

Give **three** possible causes of extinction.

1 _____

_____

2 _____

_____

3 _____

_____

(3)

(g) Suggest **one** reason why scientists **cannot** be sure what caused the trilobites to become extinct.

_____

_____

(1)

(Total 13 marks)