5090 Biology Paper 2 - Classification

Topical questions | 4 questions

1. Question part 1/2 | 5090 Specimen 2023 P2 Q7

7 Organisms can be classified into groups by the features they share.

(a) State **two** features used to classify humans as mammals.

1 .....

2 .....
[2]

(b) The scientific name for humans is *Homo sapiens*.

State the level of classification referred to by each part of the scientific name:

Homo .....

sapiens .....
[2]

(c) Humans may be infected with pathogens such as viruses.

State the **two** main features of a virus.

1 .....

2 .....
[2]

1. Question part 2/2 | 5090 Specimen 2023 P2 Q7

(d) Fig. 7.1 shows a sample of human blood as seen under a microscope.

In Fig. 7.1 one cell is labelled **X**. Cells of this type produce antibodies.

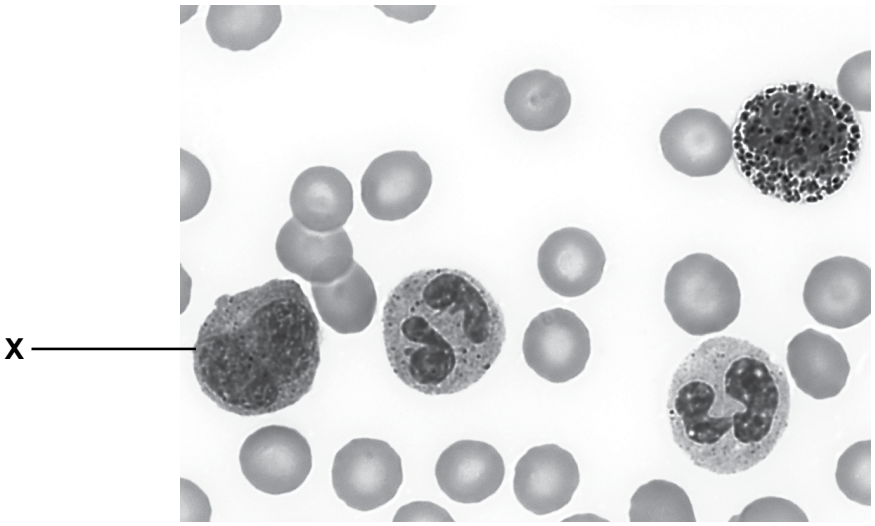

Fig. 7.1

(i) Outline how the type of cell labelled **X** defends the body against infection by a pathogen.

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.....

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.....

.....

..... [4]

(ii) Infection causes the type of cell labelled **X** to produce antibodies.

State **one** other cause of antibody production.

..... [1]

[Total: 11]

2. Question part 1/2 | 5090 May-June 2024 P2 V2 Q2

2 Organisms can be classified into groups using the features they share.

(a) Fish are one of the main groups of vertebrates.

(i) State **three** main features used to classify an organism as a fish.

1 .....

2 .....

3 .....

[3]

(ii) State **two** main groups of vertebrates other than fish.

1 .....

2 .....

[2]

(b) Swordfish are large fish that live in the ocean.

They have a long, bony extension to the skull, called a sword.

Fig. 2.1 is a diagram of a swordfish.

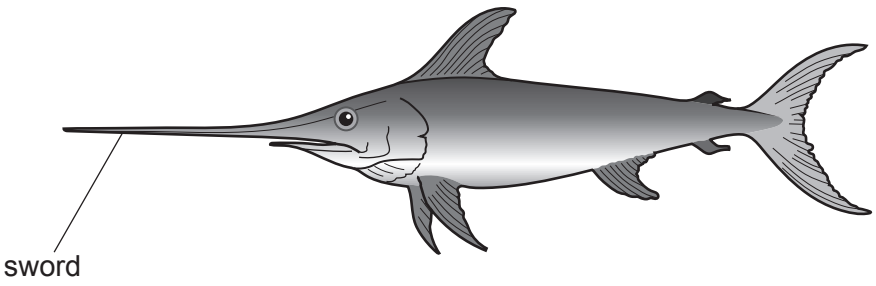

Fig. 2.1

The binomial name of the swordfish is *Xiphias gladius*.

(i) Define the term species.

.....

.....

..... [2]

(ii) State the species name of the organism shown in Fig. 2.1.

..... [1]

(c) Swordfish swim near the surface of the ocean where the water temperature is low.
During evolution, swordfish developed a muscle behind each eye that warms the eyes and the brain to a temperature above that of the ocean.
This feature gives swordfish improved vision.

(i) Name the process that led to the evolution of the muscle behind each eye of the swordfish.

..... [1]

(ii) Suggest reasons why the evolution of this feature has adapted swordfish to survive in the ocean.

.....

.....

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.....

.....

.....

.....

..... [4]

[Total: 13]

3. Question | 5090 Oct-Nov 2024 P2 V2 Q1

1 Use the dichotomous key in Fig. 1.1 to identify the five main vertebrate groups, **A**, **B**, **C**, **D** and **E**.

Complete Table 1.1.

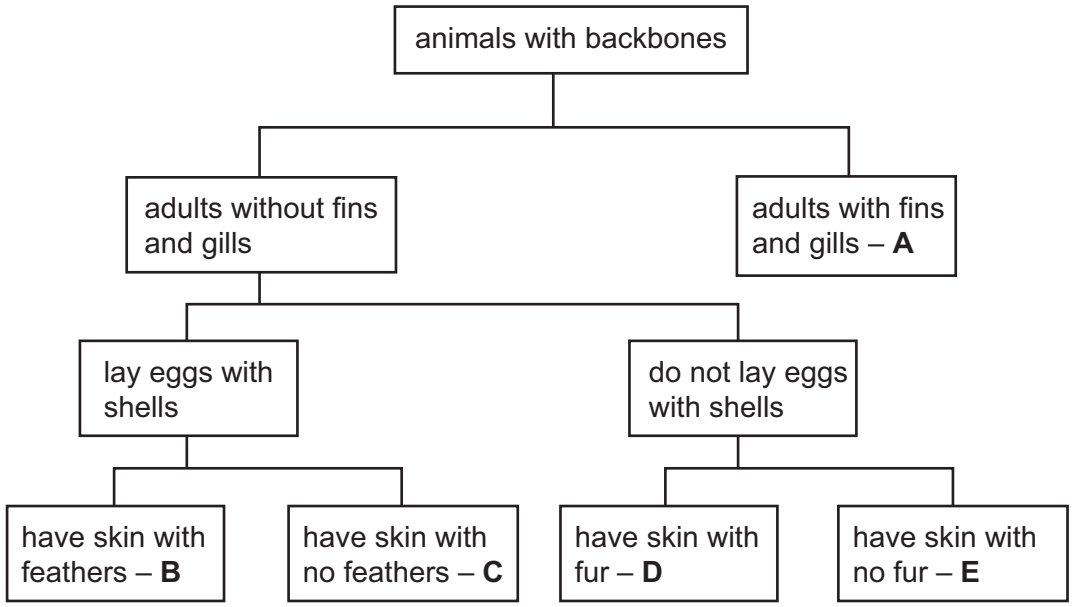

Fig. 1.1

Table 1.1

letter in key	name of vertebrate group
A	.....
B	.....
C	.....
D	.....
E	.....

[5]

4. Question | 5090 May-June 2026 P2 V2 Q1

1 There are millions of different species of organism living on Earth. Scientists classify these different species into groups.

(a) One way that scientists classify animals is by placing them into two groups: vertebrates and invertebrates.

(i) Define the term vertebrate.

..... [1]

(ii) Vertebrates are further classified into five smaller groups.

Complete the list of vertebrate groups.

mammals

fish

reptiles

.....

.....

[2]

(b) State **one** feature common to most reptiles.

..... [1]

[Total: 4]