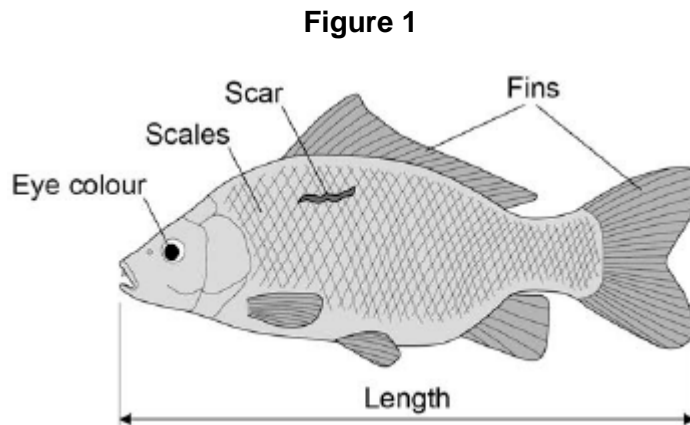


Q1.Figure 1 shows a fish called a carp.



The characteristics of an animal can be a result of:

- only genetic causes
- only environmental causes
- both genetic **and** environmental causes.

(a) Give **one** characteristic shown in **Figure 1** for each different cause.

Only genetic causes

Only environmental causes

Both genetic **and** environmental causes

(3)

(b) Two alleles control the body colour of carp:

- brown (**B**)
- blue (**b**).

The brown allele is dominant to the blue allele.

The genetic cross from breeding two carp is shown in **Figure 2**.

Figure 2

	B	b
b	Bb	
b		

Complete **Figure 2**.

(2)

(c) Draw a ring around **one** blue offspring shown in **Figure 2**. (1)

(d) What is the probability that the offspring from this genetic cross will be brown?

Tick **two** boxes.

0	<input type="checkbox"/>
0.25	<input type="checkbox"/>
0.5	<input type="checkbox"/>
1.0	<input type="checkbox"/>

(1)

(e) Carp can produce large numbers of offspring.

The two carp crossed in **Figure 2** had 260 000 offspring.

Approximately how many offspring are expected to be brown?

.....

Brown carp offspring =

(1)

(f) A pond contains carp used for breeding.

The carp for breeding are brown or blue.

A red carp has been seen.

The red carp was **not** added to the pond.

Suggest what might have caused the red carp to appear.

.....

.....

(1)

(Total 9 marks)