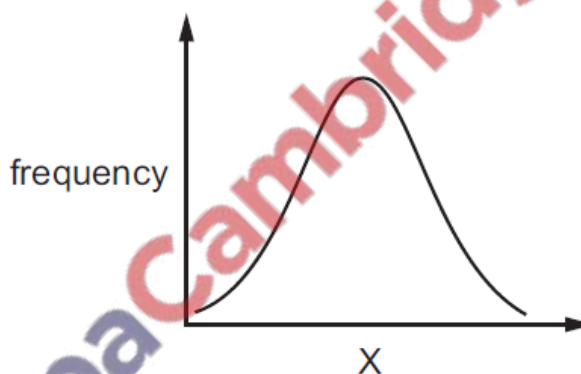


**Variation and selection – 2023 June IGCSE Biology 0610**

1. **June/2023/Paper\_0610/12/No.35**  
Which term is a genetic change?

- A allele
- B genotype
- C mutation
- D phenotype

2. **June/2023/Paper\_0610/13/No. 31**  
The graph shows the frequency of a human characteristic, X.



Which characteristics can be represented by X?

	blood groups	height	sex
<b>A</b>	✓	✓	x
<b>B</b>	x	x	✓
<b>C</b>	x	✓	x
<b>D</b>	✓	x	✓

key  
✓ = yes  
x = no

3. June/2023/Paper\_0610/13/No. 32

Which row shows some of the features involved in natural selection?

	many offspring are produced	humans choose desirable features	alleles are passed onto offspring
<b>A</b>	✓	x	x
<b>B</b>	x	✓	x
<b>C</b>	x	✓	✓
<b>D</b>	✓	x	✓

key

✓ = yes

x = no

4. June/2023/Paper\_0610/13/No. 33

Which statement is correct?

- A** Chromosomes are made of DNA.
- B** Chromosomes make up a gene.
- C** Each chromosome is a length of DNA that codes for a protein.
- D** Different forms of chromosomes are called alleles.

5. June/2023/Paper\_0610/13/No. 35

What is an example of a characteristic that shows discontinuous variation in humans?

- A** body mass
- B** height
- C** ABO blood groups
- D** width of hand

6. June/2023/Paper\_0610/21/No. 34

Which adaptation may be present in a xerophyte?

- A leaves with small surface area and large numbers of stomata
- B little or no xylem tissue and leaves with large surface area
- C stomatal hairs and rolled leaves
- D thin or no cuticle and deep roots

7. June/2023/Paper\_0610/22/No. 34

Which feature is a leaf adaptation for living in a hot, dry desert?

- A hairy
- B large surface area
- C many stomata
- D thin waxy cuticle

8. June/2023/Paper\_0610/23/No. 29

Which row shows some of the features involved in natural selection?

	many offspring are produced	humans choose desirable features	alleles are passed onto offspring
A	✓	x	x
B	x	✓	x
C	x	✓	✓
D	✓	x	✓

key

✓ = yes

x = no

9. June/2023/Paper\_0610/23/No. 33

Which Punnett square shows a test cross that identifies a heterozygous parent?

**A**

	T	t
T	TT	Tt
t	Tt	tt

**B**

	T	T
T	TT	TT
t	Tt	Tt

**C**

	T	t
t	Tt	tt
t	Tt	tt

**D**

	T	T
t	Tt	Tt
t	Tt	Tt

10. June/2023/Paper\_0610/23/No. 34

What is a feature of some xerophytes?

- A** large air spaces in the tissues
- B** leaves rolled up and covered with hairs
- C** leaves with stomata on the upper surface
- D** thin cuticle



(a) A farmer wanted to use selective breeding to produce goats with a high milk yield.

Fig. 7.1 shows a goat being milked.



Fig. 7.1

Describe the stages in selective breeding to develop goats with a high milk yield.

.....

.....

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..... [3]

(b) Animals can be farmed intensively.

State **two** advantages of intensive livestock production.

1 .....

.....

2 .....

.....

.....

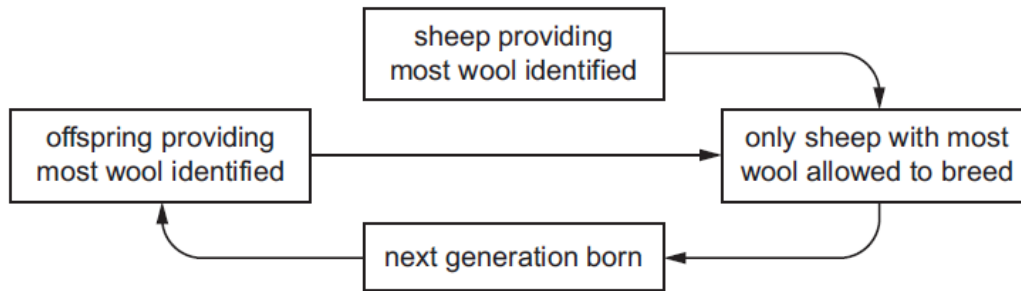
..... [2]

[Total: 5]

12. March/2023/Paper\_0610/12/No.35

Humans have kept sheep for many centuries because they supply us with wool.

The flow chart shows how a farmer would breed his sheep to provide more wool.



Which process is described by this flow chart?

- A natural selection
- B selective breeding
- C struggle for survival
- D genetic modification

13. March/2023/Paper\_0610/22/No.34

Which statements are correct during both natural selection and artificial selection?

- 1 Only certain individuals reproduce.
- 2 Alleles are passed on to the offspring.
- 3 Organisms do **not** compete with each other for survival.

- A 1 and 2
- B 1 and 3
- C 2 only
- D 2 and 3