

Variation and selection – 2020 IGCSE 0610

1. Nov/2020/Paper_11/No.34

Which statement is best used to describe differences in height in humans?

- A continuous variation resulting in a limited number of phenotypes
- B continuous variation resulting in a range of phenotypes
- C discontinuous variation resulting in a limited number of phenotypes
- D discontinuous variation resulting in a range of phenotypes

2. Nov/2020/Paper_11/No.35

A student wrote some statements describing the stages involved during selective breeding of plants.

- 1 Farmers select individual plants with desirable features.
- 2 Farmers cross these individuals to produce the next generation.
- 3 The farmers then select the offspring with the desirable features.

Which statements are correct?

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

3. Nov/2020/Paper_13/No.34

What is a definition of variation?

- A having two identical alleles of a particular gene
- B individuals of the same species in one area
- C differences between individuals of the same species
- D the way in which new alleles are formed

4. Nov/2020/Paper_21/No.34

The development of antibiotic resistance in bacteria is an example of which process?

- A evolution by artificial selection
- B evolution by natural selection
- C variation due to genetic engineering
- D variation due to asexual reproduction

5. Nov/2020/Paper_22/No.34

Desert plants have evolved to survive in places where very little water is available.

Which process is reduced to enable them to retain as much water as possible?

- A transpiration
- B translocation
- C respiration
- D digestion

6. Nov/2020/Paper_23/No.27

Scientists investigated the amount of genetic variation found within different crop plants. They grew large numbers of each crop and measured the genetic variation within the species of crop. The results are shown in the table.

| crop | percentage genetic variation |
|--------|------------------------------|
| banana | 0 |
| pea | 65 |
| carrot | 54 |

Which crop or crops have been produced by sexual reproduction?

- A banana only
- B banana, pea and carrot
- C pea only
- D pea and carrot only

7. Nov/2020/Paper_23/No.34

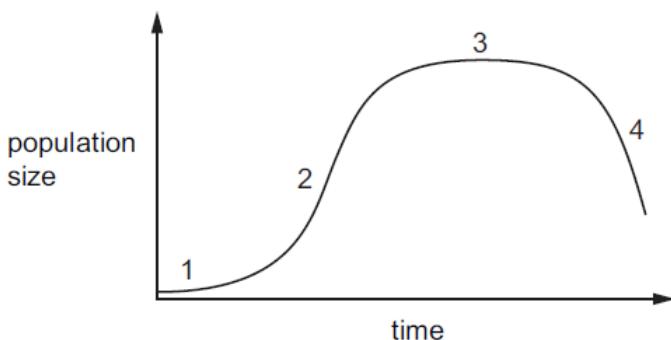
How does artificial selection differ from natural selection?

- A Artificial selection changes the characteristics of living things.
- B Artificial selection is based on genetic variation.
- C Artificial selection does not involve competition for resources.
- D Artificial selection occurs over many generations.

8. Nov/2020/Paper_23/No.36

A few yeast cells were placed in a container of nutrient solution.

The graph shows how their population size changed over time.



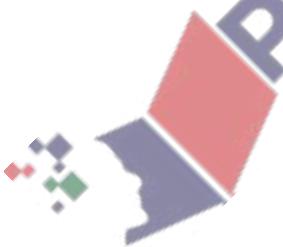
Which row shows when the reproduction rate was greater than the death rate for the numbered phases on the graph?

| | reproduction rate greater than death rate | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| A | ✓ | ✓ | ✓ | ✗ |
| B | ✓ | ✓ | ✗ | ✗ |
| C | ✓ | ✗ | ✗ | ✗ |
| D | ✗ | ✓ | ✓ | ✓ |

key

✓ = yes

✗ = no



9. Nov/2020/Paper_33/No.4

(a) Define the term homeostasis.

.....
.....
.....
.....

[2]

(b) The skin is an important organ involved in temperature regulation in mammals.

Fig. 4.1 is a diagram of a cross-section of mammalian skin.

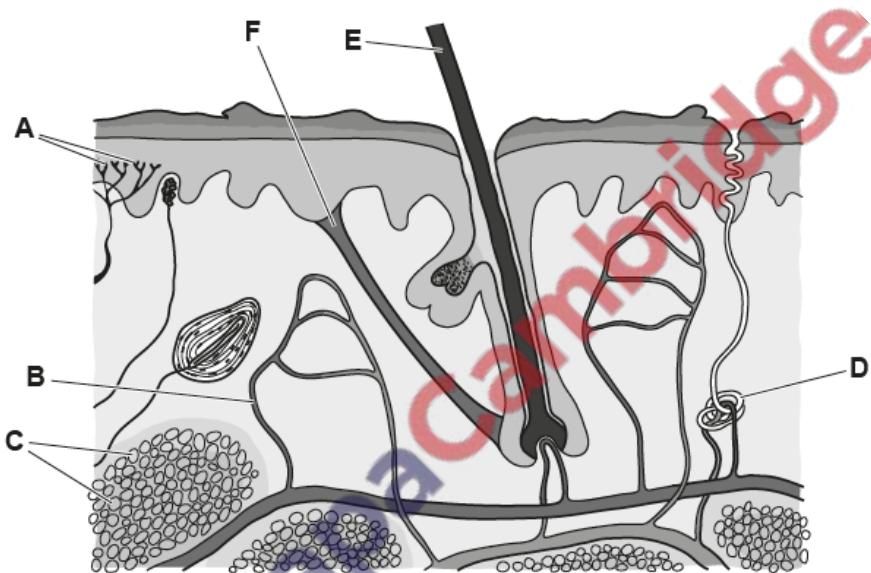


Fig. 4.1

(i) State the names of structures A, B, C and D on Fig. 4.1.

A
B
C
D

[4]

(ii) Describe how the structures labelled **C**, **E** and **F** in Fig. 4.1 reduce heat loss in **cold** conditions.

.....
.....
.....
.....
.....
.....
..... [3]

(iii) Complete the sentences about maintenance of body temperature using the words and phrases from the list.

Each word or phrase may be used once, more than once or not at all.

| | | | |
|----------|-------------|---------------|------------|
| blood | brain | condenses | evaporates |
| neurones | receptors | skin | |
| sweat | temperature | water content | |

Control of body temperature is coordinated by the

There are temperature that sense the temperature of the

.....

When the temperature gets too hot, glands release onto
the surface of the skin and the water in it reducing body
temperature.

[5]

[Total: 14]