18. Variation and selection

18.2 Adaptive features

Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for both core and extended candidates

1 Many mammals have coloured fur and many birds have coloured feathers.

Which uses of colour could help males survive long enough to pass on their features to their offspring?

	hiding from animals which might eat them	hiding from animals which they could eat	warning animals that they are poisonous
A	✓	✓	✓
B	✓	✓	✗
C	✗	✓	✗
D	✓	✗	✓

key
✓ = yes
✗ = no

2 What is a description of an adaptive feature?

A an inherited characteristic that helps an organism to survive and reproduce

B the differences between individuals of the same species

C the genetic make-up of an organism

D the transmission of information from generation to generation

3 The photograph shows a tiger.

Which visible adaptive feature makes the tiger a good predator?

A large teeth

B long whiskers

C small ears

D thick fur

4 Different organisms have different adaptive features. For example, the anthers of wind-pollinated flowering plants have long filaments.

What is true of this adaptive feature?

A Filament length is not affected by genes.

B It gives the plant an advantage in any environment.

C Longer filaments attract more insects.

D It makes the plant more likely to reproduce.

Paper 2

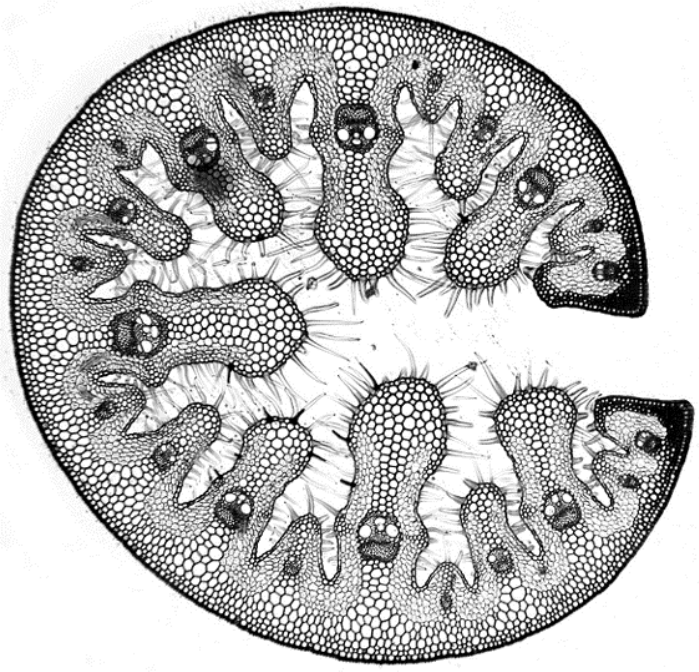
Questions are applicable for extended candidates only

5 Plants are adapted to survive in different environments.

What are features of xerophytes? **(extended only)**

	cuticle	number of stomata
A	thick	few
B	thick	many
C	thin	few
D	thin	many

6 The photomicrograph shows a cross-section through a marram grass leaf.



Which feature is an adaptation of a xerophyte? **(extended only)**

A the presence of chloroplasts

B the presence of fine hairs

C the presence of phloem tissue

D the presence of xylem vessels

7 Which row shows features of xerophytes that reduce water loss? **(extended only)**

	green colour from chlorophyll	leaves reduced to spines	presence of stomata	thick cuticle
A	✓	✗	✓	✗
B	✓	✓	✗	✗
C	✗	✓	✗	✓
D	✗	✗	✓	✓

key

✓ = reduces water loss

✗ = does **not** reduce water loss

8 Which adaptation may be present in a xerophyte? **(extended only)**

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

9 Which feature is a leaf adaptation for living in a hot, dry desert? **(extended only)**

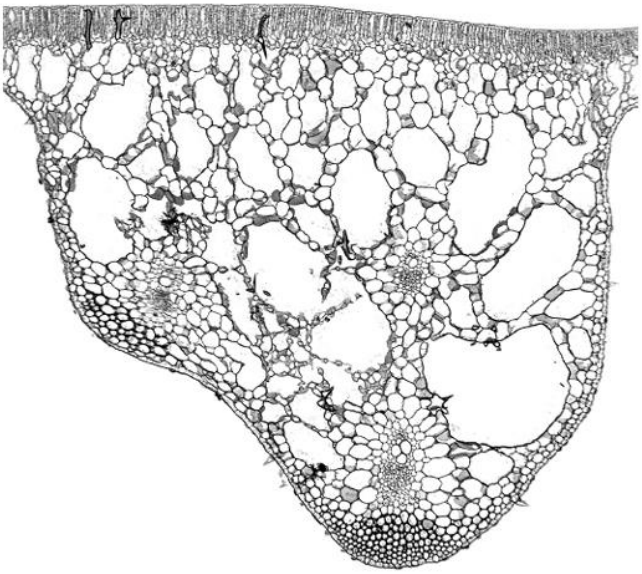
A hairy

B large surface area

C many stomata

D thin waxy cuticle

10 The diagram shows a section through the leaf of a water lily.



Water lilies are hydrophytes.

They have larger air spaces than most other plants.

How does this adaption help the lily to survive? **(extended only)**

A increases the number of chloroplasts for photosynthesis

B makes the leaf buoyant enough to float on water

C provides more space for the xylem and phloem

D speeds up gas exchange between the leaf and water

11 What is an adaptive feature of xerophytes? **(extended only)**

A They do not have root hair cells.

B Their leaves have a large surface area.

C They have many stomata.

D Their leaves have thick cuticles.

12 Which feature would help a plant to survive in a dry environment? **(extended only)**

A large leaves

B many stomata

C small roots

D thick waxy cuticle

13 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? **(extended only)**

A transpiration

B translocation

C respiration

D digestion

14 Which adaptation may be present in a xerophyte? **(extended only)**

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

15 What is a feature of some xerophytes? **(extended only)**

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