

Thermoregulation

G-E

- 1 Complete the passage using words from the box. Each word may be used once, more than once or not at all.

heat increases stand upright contract air relax reduces lay flat

When the body temperature falls below normal the hair erector muscles contract.
This causes the hairs on the skin's surface to stand upright. This traps a layer of air on or near the skin's surface, which acts as an insulator and reduces heat loss.

(4 marks)

F-C

EXAM ALERT

- 2 The skin contains sweat glands and blood vessels. Describe how these help to decrease body temperature.

a) blood vessels

When the body temperature rises blood vessels in the skin widen. This causes

More blood to pass close to the skin surface by and lose more heat because it's near the skin surface. More heat is lost from the skin into the surroundings.

(2 marks)

b) sweat glands

Sweat glands produce sweat out of your body onto the surface of your skin. The sweat evaporates which cools you down.

(2 marks)

Students have struggled with exam questions similar to this - be prepared!

ResultsPlus

You need to be able to explain how each structure in the skin helps to lose heat or to keep heat in.

E-C

- 3 Suggest why it is important that body temperature is maintained at around 37°C.

It is important the body temperature is kept at 37°C because the enzymes in cells work best at 37°C. If the body temperature is lower than the enzymes work slower.
You need to mention enzyme control reactions in cells.

(2 marks)

D-C

- 4 Name the part of the brain that is responsible for monitoring body temperature.

Hypothalamus

(1 mark)

9/11