

(a) Complete Table 5.1 to show the features of three cell-signalling molecules of the endocrine system: antidiuretic hormone (ADH), glucagon and insulin.

Put a tick (✓) or a cross (X) in every box.

Table 5.1

feature	ADH	glucagon	insulin
binds to receptors on cell surface membranes			
results in molecules moving from cells into the blood			
is secreted as a result of detection by osmoreceptors			

[3]

Describe **other** ways in which the endocrine system and the nervous system differ.

[4]

Fig. 5.1 shows a transmission electron micrograph of a longitudinal section of striated muscle tissue that is in a relaxed state.

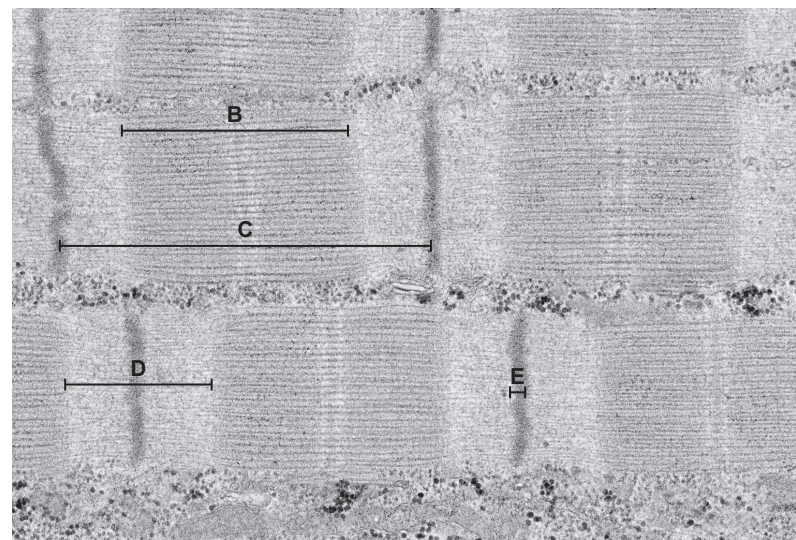


Fig. 5.1

(i) State the letter on Fig. 5.1 that indicates the length of a sarcomere.

..... [1]

(ii) State the letter on Fig. 5.1 that indicates a region where actin and myosin overlap.

..... [1]

(iii) Describe **and** explain how the region labelled **D** on Fig. 5.1 changes during muscle contraction.

[4]

9 (a) Fig. 9.1 shows a longitudinal section of a human kidney.

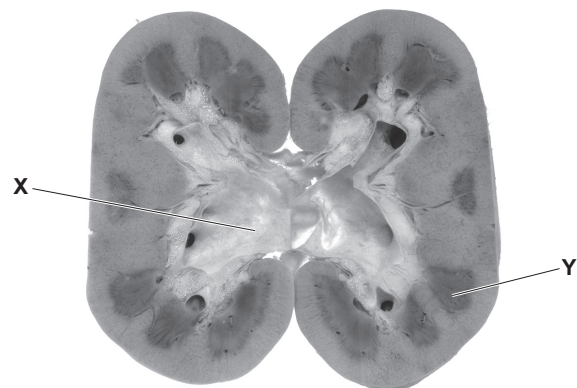


Fig. 9.1

Name the regions of the kidney labelled X and Y in Fig. 9.1.

X

Y

[2]

(b) A biosensor can be used to measure the concentration of glucose in urine.

Outline how a biosensor measures the concentration of glucose in urine.

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.....
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[4]

[Total: 6]