

2 (a) The human retina contains receptor cells called rods and cones.

Fig. 2.1 shows the distribution of receptor cells in a human retina.

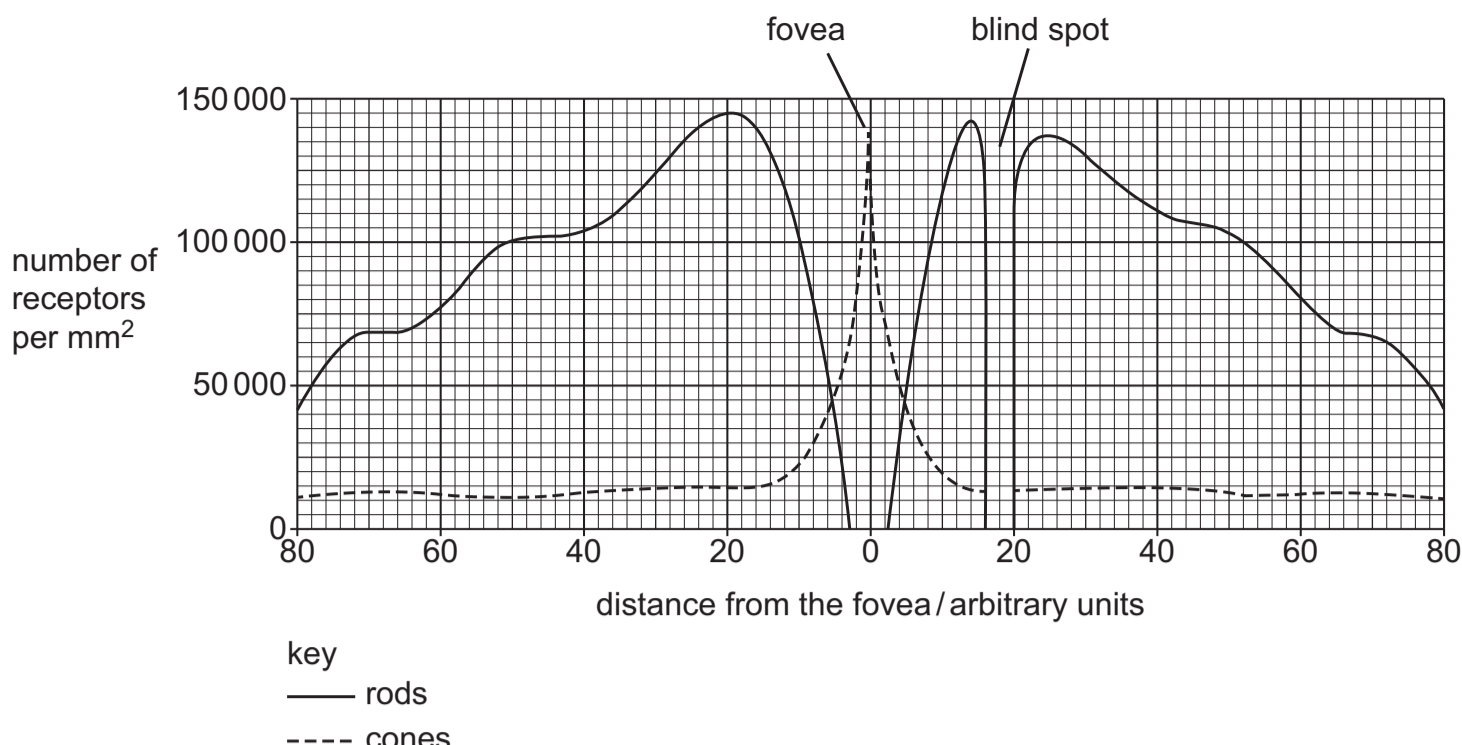


Fig. 2.1

Using the information in Fig. 2.1, describe the differences in the distribution of rods and cones.

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 [4]

(b) Nocturnal animals are active at night.

Suggest how the number of receptor cells in the retina of a nocturnal animal differs from those in the retina of an animal that is active in the day.

Explain your suggestion.

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 [2]

(c) In humans, the size of the iris increases in bright light conditions.

During this response one effector in the iris contracts and one effector relaxes.

(i) State the name of this response.

..... [1]

(ii) State the name of the effector that contracts in this response.

..... [1]

(iii) State the name of the type of action shown by the paired effectors during this response.

..... [1]

(d) The optic nerve contains many neurones.

Fig. 2.2 shows a synapse between two neurones.

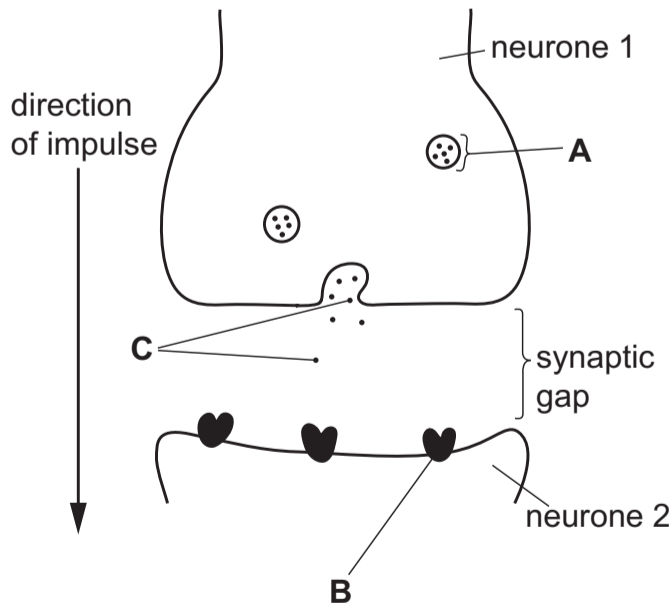


Fig. 2.2

(i) State the names of the parts labelled A, B and C in Fig. 2.2.

A

B

C

[3]

(ii) Explain how part C in Fig. 2.2 moves across the synaptic gap.

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 [2]