



QUESTION WORKBOOK

Receptors: turning a stimulus into something a neurone can carry

Nervous coordination, receptors, muscles and behaviour · Unit B14

AQA 3.6.1.3 · OCR A 5.1.3, 5.1.5 · Edexcel A Topic 8.11–8.14 · CAIE 15.1.1–15.1.2

6 questions · 22 marks

PRINT EDITION

SECTION A · Short, 1 to 2 marks

- A1** Name the type of neurone that carries impulses from a receptor into the spinal cord in a reflex arc, and name the type that carries impulses out of the spinal cord to the effector. [2]

SECTION B · Standard, 3 to 5 marks

- B1** Describe how a firm pressure applied to a Pacinian corpuscle leads to an action potential in the sensory neurone it surrounds. [5]

- B2** Explain why a withdrawal reflex is faster than a conscious response, and explain why the statement that the brain is not involved in a reflex would not be credited. [4]

- B3** Compare rod cells with cone cells in the human retina, referring to their pigment, the light each needs, their distribution and the image each produces. [4]

- B4** Explain how the wiring of the retina makes rods more sensitive than cones in dim light but gives them lower visual acuity. [4]

- B5** In a rare condition the stretch-mediated sodium channels in a person's Pacinian corpuscles are locked permanently open. Suggest what this does to the impulses sent along the sensory neurone when no pressure is applied, and suggest why the person would find it hard to judge how firmly they are being pressed. [3]
