



QUESTION WORKBOOK

Active transport, co-transport and moving things in bulk

Membranes and transport across cells · Unit B04

AQA 3.2.3, 3.3.3 · OCR A 2.1.5 (g)–(h) · Edexcel A Topic 4.7 · CAIE 4.2

5 questions · 18 marks

PRINT EDITION

SECTION A · Short, 1 to 2 marks

- A1** State how many sodium ions and how many potassium ions the sodium-potassium pump moves for each molecule of ATP it hydrolyses, and state the direction of each movement. [2]

SECTION B · Standard, 3 to 5 marks

- B1** Describe how a carrier protein moves a substance across a membrane by active transport, from the substance binding to the protein returning to its original shape. [4]

- B2** Explain why the absorption of glucose from the lumen of the ileum is described as active, even though the co-transporter protein that carries the glucose hydrolyses no ATP. [4]

- B3** Compare endocytosis with exocytosis, referring to the direction of movement, what the membrane does, and the energy required. [4]

- B4** A tissue takes up two substances, X and Y. When a respiratory inhibitor is added, uptake of X falls almost to zero within minutes while uptake of Y continues unchanged. Suggest what this shows about how each substance crosses the membrane, and suggest one further observation that would support your conclusion about X. [4]
