InkBiology

QUESTION WORKBOOK

The fluid mosaic model: what a membrane is made of

Membranes and transport across cells · Unit B04

AQA 3.2.3 · OCR A 2.1.5 (a)-(c) · Edexcel A Topic 4.5 · CAIE 4.1

5 questions · 18 marks

PRINT EDITION

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SECTION A · Short, 1 to 2 marks

A1 Name the two kinds of molecule found on the outer surface of a cell surface membrane that carry short branched carbohydrate chains. [2]

SECTION B · Standard, 3 to 5 marks

B1 Explain why phospholipids arrange themselves into a bilayer when they are placed in water, and why a torn fragment of membrane reseals itself into a closed vesicle. [4]

B2 Describe what cholesterol does to a cell surface membrane at high temperature and at low temperature, and describe the effect it has on permeability in each case. [4]

B3 Compare a channel protein with a carrier protein as routes across a cell surface membrane. [4]

B4 A student cuts discs of beetroot with a cork borer and places them directly into water baths at a range of temperatures without washing them first. Suggest how this affects her absorbance readings, and suggest one control variable she must still keep the same. [4]