



QUESTION WORKBOOK

Cofactors, coenzymes and where enzymes work

Enzymes and metabolic control · Unit B03

OCR A 2.1.4 · Edexcel A 2.10, 3.3 · Edexcel B 1.5 vii · CAIE 3.1, 3.2

6 questions · 18 marks

PRINT EDITION

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SECTION A · Short, 1 to 2 marks

A1 State what is meant by a coenzyme, and name the vitamin from which the
CCW-Q6 coenzyme NAD is made. [2]

SECTION B · Standard, 3 to 5 marks

B1 A prolonged dietary shortage of vitamin B3 damages tissues that respire heavily,
CCW-Q1 such as skin and the nervous system. Suggest why. [4]

B2 Compare a coenzyme with a prosthetic group, giving a named example of each.
CCW-Q2 [3]

B3 A purified sample of amylase hydrolyses starch only when chloride ions are present
CCW-Q3 in the solution. Explain this observation. [3]

B4 Explain why the enzymes that digest food in the gut must be extracellular, and
CCW-Q4 name two such enzymes. [3]

B5 Two enzymes, P and Q, act on the same substrate and have similar $V_{\max}$ values.
CCW-Q5 Enzyme P has a K_m of 0.2 mmol dm^{-3} and enzyme Q a K_m of 4.0 mmol dm^{-3} .
Explain which enzyme has the higher affinity for the substrate, and which converts
more substrate when the substrate concentration is low. [3]

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