



QUESTION WORKBOOK

The heart and the cardiac cycle: pressure decides everything

Animal transport and cardiovascular biology · Unit B09

AQA 3.3.4.2 · OCR A 3.1.2 (h)–(k) · Edexcel A Topic 1.1–1.6 · CAIE 8.3

6 questions · 20 marks

PRINT EDITION

SECTION A · Short, 1 to 2 marks

A1 State what causes a valve in the heart to open or to shut. [1]

SECTION B · Standard, 3 to 5 marks

B1 Describe the pressure changes responsible for every valve movement in one cardiac cycle, starting at the beginning of ventricular systole. [5]

B2 At rest an adult has a stroke volume of 70 cm^3 and a cardiac cycle lasting 0.80 s . Calculate her heart rate in beats per minute and her cardiac output in $\text{dm}^3 \text{ min}^{-1}$. [4]

- B3** A heart removed from the body goes on beating for a while. Explain why it does so, and explain what the delay at the atrioventricular node achieves. [4]

- B4** Compare the single circulation of a fish with the double circulation of a mammal. [3]

- B5** A baby is born with a hole in the septum between the two ventricles. Suggest why the baby becomes breathless and tires easily. [3]
