InkBiology

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

NAVY SCREEN EDITION

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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 $dm^3\ min^{-1}$. [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]