

**ADVANCED SUBSIDIARY GCE
BIOLOGY**

Transport

MONDAY 4 JUNE 2007

2803/01

Morning

Time: 45 minutes

Additional materials: Electronic calculator
Ruler (cm/mm)



Candidate
Name

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name, Centre Number and Candidate Number in the boxes above.
- Answer **all** the questions.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- **WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.**

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- You will be awarded marks for the quality of written communication where this is indicated in the question.
- You may use an electronic calculator.
- You are advised to show all the steps in any calculation.

FOR EXAMINER'S USE

Qu.	Max.	Mark
1	9	
2	15	
3	10	
4	6	
5	5	
TOTAL	45	

This document consists of **11** printed pages and **1** blank page.



(a) State the names of structures **F** and **G**.

F

G [2]

(b) The statements below were made to a group of students.

Explain why each statement is true.

(i) The difference in thickness of the walls of the chambers, as shown by the letters **X**, **Y** and **Z**, is related to the functions of the different chambers.

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..... [3]

(ii) Without the Purkyne tissue, blood would not be pumped out of the heart efficiently.

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..... [2]

(c) Recent research has shown that there may be a link between migraines (severe headaches) and the minor heart defect PFO. In PFO the small flap shown in Fig. 3.1 fails to close completely at birth.

Suggest how PFO might lead to a migraine.

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..... [3]

[Total: 10]

[Turn over



(b) (i) Explain why it is essential that the fetus has a different type of haemoglobin from the adult.

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(ii) Explain why the change from fetal to adult haemoglobin seen in Fig. 4.1 is essential after birth.

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[5]

[Total: 6]



