



**General Certificate of Secondary Education  
June 2011**

**Human Health and Physiology                      44151F**

**(Specification 4415)**

**Unit 1: Topics in Human Health and Physiology  
(Foundation)**

***Report on the Examination***

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## General Comments

There were fourteen questions in the paper. Of these, questions one to ten were set as 'low' demand. Questions eleven to fourteen were common with the higher paper and were set as 'standard' demand.

This was the first examination set on the new specification. The introduction to the subject content section 3.3 on page 8 of the specification makes it clear that many of the questions will be set in the context of the work of health professionals. Many candidates, who were otherwise well prepared, failed to appreciate the nature of the work done by these professionals.

Centres are also reminded of the booklet 'Notes on the Scope of the Subject Content' <http://web.aqa.org.uk/qual/newgcse/pdf/AQA-4415-W-TRB-OGNSSC.PDF>. This booklet indicates the depth of treatment required for many of the topics in the specification. There were several instances where candidates' answers generally fell short of the required depth.

Candidates should be advised to write in black ink or black ball-point pen only as the scanning process involved in on-line marking does not pick up pale colours well. Furthermore, candidates should be advised to ensure that if their answers extend beyond the printed lines or space then they should keep these extensions away from the edges of the page as they may be removed during scanning.

In general, there were relatively few questions where a significant number of candidates had not attempted to answer parts of the question. There were a small number of very high scoring candidates, who would have had access to higher grades if they had been entered for Higher Tier. There were some topics which all candidates found challenging and where there were few correct answers. Questions that required knowledge of investigations, and the terms associated with them, were in general not well answered by the majority of candidates.

Detailed comments on individual questions are given below and it is hoped that these, along with the Mark Scheme, will help centres to prepare candidates for future examinations.

### Question 1

Most candidates were able to answer both parts (a) and (b) correctly. Most had only drawn one line from each organ and there were few answers where amendments were not clear.

### Question 2

Most candidates answered this question correctly.

### Question 3

Most candidates answered the whole question correctly but there were some incorrect answers to the questions that required knowledge from the specification, as well as the 'eatwell plate'

### Question 4

In part (a), the majority of candidates were able to label enamel, but other parts of the tooth, particularly cement, were not as well identified. Most candidates correctly identified the molar tooth.

In part (b), most candidates were able to order the stages of tooth decay.

Part (c) was poorly answered by some candidates with a significant number of candidates unable to extract the two figures from the graph to carry out the calculation. There were many poor answers to part (c)(iii) requiring the reasons for the difference in the number of teeth needing dental treatment and social class. There was a common misunderstanding that treatment of childrens' teeth by the NHS was inferior to private dentists and that it was expensive.

### **Question 5**

In part (a), the trachea was usually correctly identified and most candidates were able to identify the place where oxygen enters the blood.

In part (b), many candidates wrote about gas exchange rather than the simple need to get 'air to the lungs'.

In part (c), the nucleus and cytoplasm were generally identified correctly. The roles of mucus and cilia were not well explained by some candidates. The role of mucus needed to explain that dust or bacteria was **trapped**, and, for cilia, candidates needed to explain **movement** of the mucus. In general, the role of cilia was now well answered.

### **Question 6**

The whole of this question was generally very well answered except for the calculation, which some candidates found difficult. Candidates explained the advantages of their chosen dialysis technique well.

### **Question 7**

In part (a), most candidates correctly identified the fallopian tube.

Part (b) was answered well by some candidates and not so well by a significant number of candidates. Few candidates commented that fertilisation took place in a 'dish' or 'test tube' and some did not explain that sperm was taken from the male and eggs from the female.

In part (c), most candidates scored a mark for saying that 'Success rate decreased as age increased' but few went on to say more about the data to score an additional mark.

In part (d), a significant number of candidates thought that multiple births were desirable and that it was a disadvantage of Clinic A that there were fewer multiple births.

### **Question 8**

This question produced a wide range of scores for different candidates.

In part (a), many candidates repeated the information from the stem of the question. Some answered that you tested for pathogens 'to see if there were any pathogens'. In order to score a mark a link between pathogens and disease, or infection, needed to be made.

Most candidates found a reason for blood loss in part (b) although, again, some wrote 'you need to be given blood because you have lost blood'.

In part (c), there were some excellent answers to why the blood group needed to be checked and most candidates answered correctly.

In part (f), only just over half of candidates knew that haemoglobin is found in red blood cells.

### **Question 9**

In part (a), just over 45% of candidates scored full marks and knew the role of the parts of the knee joint.

In part (b), most candidates answered correctly, although a significant number thought brittle bones were caused by arthritis.

### **Question 10**

This question produced answers that varied considerably. Candidates that were able to describe a range of methods of disease transmission and to put their ideas into good English, and write clearly using scientific terms, scored good marks. Weaker candidates scored one or two marks, usually for a description of droplet infection, without using the term, and mentioning a method of spreading disease by contact.

### **Question 11**

This question produced a wide range of scores.

In part (a) many candidates managed the calculation and rounded the mark correctly. Those that did not show their working and rounded incorrectly lost marks. Almost all candidates were able to use their figure from (a) to put the teenager into the correct category.

In part (b), even though the question asked for ‘advice about diet’ many candidates suggested that the dietician should give advice about exercise.

Most candidates answered part (c) correctly.

The answers to part (d)(i) were very varied. There were some excellent answers clearly linking diet with heart disease and incorporating all, or most, of the bullet points on the Mark Scheme. These used scientific terms well and answers were well structured. Some weaker answers scored only one mark for linking fatty foods to heart attacks. The majority of candidates were between these two extremes.

In part (d)(ii), most candidates scored a mark for exercise.

### **Question 12**

In this question, many candidates were able to give treatments and diagnostic methods associated with cancer but some struggled with data.

In part (a), most candidates were able to establish that ‘more men than women suffered from lung cancer’ but fewer scored a mark for identifying the peak age for cases.

Incorrect answers to part (b) often focused on the need for statistics.

In part (c), those answering biopsy to the first part often simply wrote ‘doctor’ for the second part of the question.

In part (d), many candidates identified ‘chemotherapy’ and ‘radiotherapy’ (very poor spelling here) but a significant number suggested ‘lung transplant’.

### Question 13

Most candidates knew how acupuncture was carried out, but a significant number thought that in the investigation acupuncture was being compared with conventional treatment rather than a 'control treatment'.

Part (a) was well answered.

There was a wide variety of answers to part (b). Some candidates correctly identified control variables but others wrote about the numbers in the groups. Most candidates were unable to identify the dependent variable, or simply wrote 'time'.

Only a very small number of candidates scored the mark for 'The Placebo Effect' or a description of this. Answers such as 'the control treatment worked' were common.

In part (e), the majority of candidates thought 'acupuncture should be tried' but a significant number thought that the 'conventional treatment would be better'.

### Question 14

Few candidates scored high marks overall for this question.

In part (a), very few candidates wrote about 'acid in the vagina' but some described 'mucus in the cervix.' Many candidates incorrectly wrote about antibodies and white blood cells.

In part (b), many candidates did know that cancer cells reproduced 'uncontrollably' although some used the word 'grow', which is incorrect. Incorrect answers also included the 'shape' or 'disease producing nature' of the cells. Many knew that malignant tumours spread to other parts of the body, but few scored a mark for stating that this was via blood or lymph.

Most Foundation Tier candidates struggled with part (c). The graph patterns were not well described and most candidates had difficulty with the calculation. A significant number did score the mark available for multiplying the number they extracted from the graph by 5. Those who scored any marks for part (c)(iii) usually did so for stating that 'at 13 most girls were not sexually active'.

Answers to part (d) varied but some candidates did score 2 marks for points on the Mark Scheme. Answers that included 'ethical' or 'religious' considerations were not creditworthy.

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