

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
TOTAL	



General Certificate of Secondary Education
June 2011

Human Health and Physiology 44152

Unit 2 Investigations in Human Health and Physiology ISA 2 – Eye to hand co-ordination

Valid for submission in May 2011

For this paper you must have:

- results tables and charts or graphs from your own investigation.

You may use a calculator.

Time allowed

- 45 minutes

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in **Section 1** and **Section 2**.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 34.
- You are expected to use a calculator where appropriate.
- In some questions you will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist terms where appropriate.

Signature of teacher marking this ISA: Date:



J U N 1 1 4 4 1 5 2 0 1

Section 1

These questions are about the investigation that you did on eye to hand co-ordination

Answer **all** questions in the spaces provided.

1 This question is about the **independent** variable in your investigation.

1 (a) What was the **independent** variable (the variable that you deliberately changed)?

.....
(1 mark)

1 (b) Suggest **one** other variable that you could deliberately change if you were to do your investigation again.

.....
(1 mark)

2 This question is about the **dependent** variable in your investigation.

2 (a) What was the **dependent** variable?

.....
(1 mark)

2 (b) What equipment did you use to measure the **dependent** variable?

.....
(1 mark)

2 (c) Which term describes your **dependent** variable?
Draw a ring around the correct answer.

Categoric

Continuous

Discrete

(1 mark)

3 Experimental measurements may contain **anomalous results**.

3 (a) Were there any **anomalous results** in your investigation?

Draw a ring around your answer. **Yes / No**

Explain your answer.

.....
.....
(1 mark)



3 (b) Give **one** example of something that might have caused an **anomalous result** in your investigation.

.....
(1 mark)

3 (c) What should you do if you get an **anomalous result** in your investigation?

.....
.....
(1 mark)

4 **Control** variables are variables that should remain the same to make the investigation a fair test.

State **two** variables that you controlled in your investigation.

1

2

(2 marks)

5 Look at your results table and graph or chart.

Describe any patterns you can see in your results.

.....
.....
.....
.....
(2 marks)

6 Make sure that your results table and graphs or charts are handed in with this paper. You will be awarded up to 6 marks for these.

(6 marks)

18

Turn over for the next section

Turn over ►



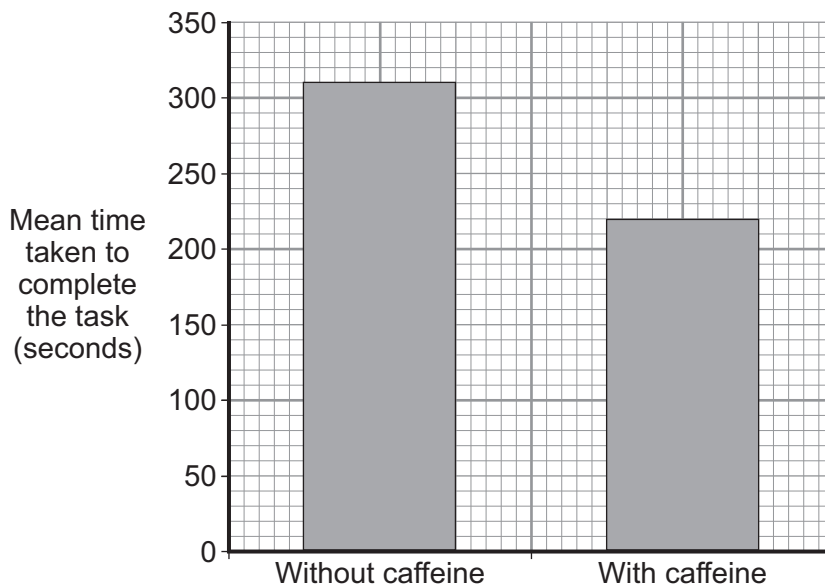
Section 2

These questions are based on a vocational application of your own investigation. In some questions you will be required to relate your own method / results to this new context.

Answer **all** questions in the spaces provided.

A scientist investigated the effect of caffeine on eye to hand co-ordination. He did an investigation, similar to your own, using 30 people.

- Each person did an eye to hand co-ordination test.
- Then each person drank 200 cm³ of the same caffeine solution.
- 30 minutes later each person repeated the eye to hand co-ordination test.
- The results are shown in the graph.



7 Describe how drinking caffeine affected the time taken to complete the task.

.....

.....

.....

.....

(2 marks)

A test called MAB (Movement Assessment Battery) is used by physiotherapists to identify children who have difficulty co-ordinating movement. The MAB test includes tasks such as catching a ball. The test is scored out of 40. The lower the MAB score, the better the child can co-ordinate movement.

Scientists carried out the following investigation:

- nine children who had difficulty in co-ordinating movement were videotaped doing the MAB test
- 131 physiotherapists watched the video and gave each child a score
- a MAB expert also watched the video and gave each child a score.



The results are shown in **Table 1**.

Table 1

Age (in years)	Gender	Mean score given by physiotherapists	Score given by MAB expert
4	Boy	15	15
5	Boy	17	19
6	Girl	12	11
7	Boy	8	9
8	Girl	12	11.5
9	Boy	25.5	27.5
10	Boy	18.5	20.5
11	Girl	17	19
12	Boy	24	25

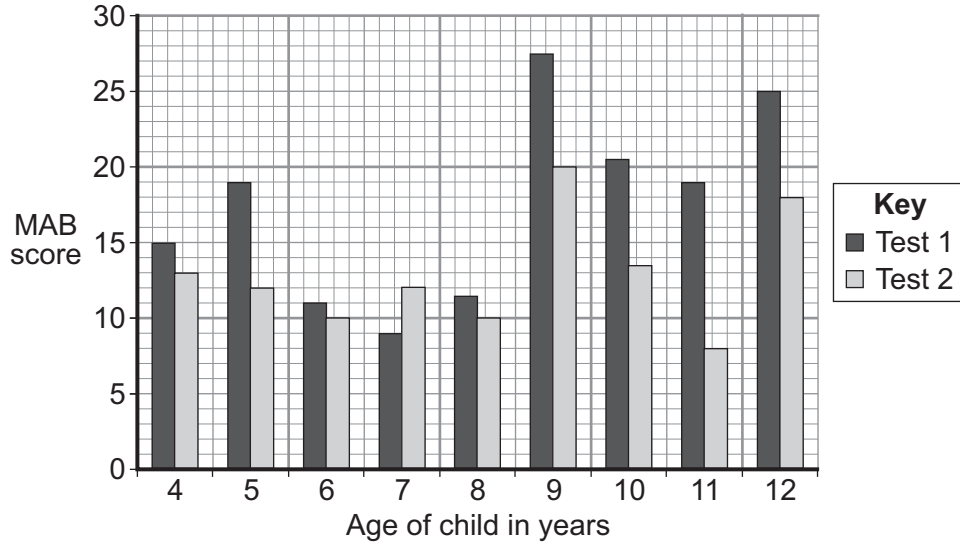
- 8 (a)** Give **one** way in which the scientists tried to make the investigation reliable.
Use ideas from your own investigation to help you.
-
(1 mark)
- 8 (b)** Give **two** ways in which the reliability of the investigation could have been improved.
Use ideas from your own investigation to help you.
- 1
- 2
(2 marks)
- 8 (c)** What was the range of scores given by the **MAB expert** for the nine children?
The range was from to
- (1 mark)
- 8 (d)** Use data from the table to complete the following sentences.
- The closest agreement between the physiotherapists and the MAB expert was for
the year old child.
- The child who had the greatest difficulty in co-ordinating movement was
years old.
- (2 marks)

Turn over ►



A physiotherapist gave the same children an exercise programme to do every day for 6 weeks. At the end of the six weeks the children completed the Movement Assessment Battery test again, to see if their scores had changed. They were scored by the MAB expert.

Below are the results for **both** MAB tests 1 and 2.



9 (a) Look at the chart above.

9 (a) (i) Which result from the second test should be checked?

Result: Child's age

(1 mark)

9 (a) (ii) Explain why.

.....

.....

(1 mark)

9 (b) Which child's MAB score changed by the greatest amount between test 1 and test 2?

Tick (✓) the box beside the correct answer.

Age five

Age eleven

Age nine

Age twelve

(1 mark)



9 (c) Look at the chart. In **test 2**, is there a relationship between the age of the child and the score given by the MAB expert?

Draw a ring around your answer **Yes / No**

Explain your answer.

.....
.....

(1 mark)

10 Describe, in as much detail as you can, the conclusions that can be made from the data given in the chart.

Use ideas from your own investigation to help you.

In this question you will be assessed on using good English, organising information clearly and using specialist terms where appropriate.

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(4 marks)

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END OF QUESTIONS



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

