



ADVANCED SUBSIDIARY (AS)
General Certificate of Education
January 2010

Centre Number

71

Candidate Number

Health and Social Care

Assessment Unit AS 14

assessing

Unit 14: Understanding Human Physiology

[A3H81]



MONDAY 1 FEBRUARY, AFTERNOON

TIME

2 hours.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Write your answers in the spaces provided in this question paper.

Answer **all four** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.

Quality of written communication will be assessed in questions **2(b)(iii)**, **3(b)** and **4(b)(iv)**.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.




For Examiner's
use only

| Question Number | Marks |
|-----------------|-------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |

Total
Marks

1 The human body is made up of cells which are specialised to help them perform their functions.

(a) Identify cells A, B and C in the table below and write down **one** function and the specialisation of each.

| Cell | Name | Function | Specialisation |
|--|------|----------|----------------|
| A  | [1] | [1] | [1] |
| B  | [1] | [1] | [1] |
| C  | [1] | [1] | [1] |

© *Physiology & Anatomy* by J Clancy and AJ McVicar, published by Arnold, 2002, ISBN 034076239X, reproduced by permission of Hodder Education

[9]

(b) Discuss how each of the following substances produced by the digestive system aids digestion.

Saliva

[3]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

Bile

[3]

Gastric juice

[3]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

[Turn over

(c) Jasper has undergone liver function tests. Results indicate he may have cirrhosis of the liver.

(i) Identify **one** cause of cirrhosis of the liver.

_____ [1]

(ii) Write down **two** symptoms of cirrhosis that Jasper may have experienced.

1 _____
_____ [1]

2 _____
_____ [1]

(iii) The liver is an important organ, carrying out a number of functions. Discuss **two** functions of the liver which aid digestion.

1 _____

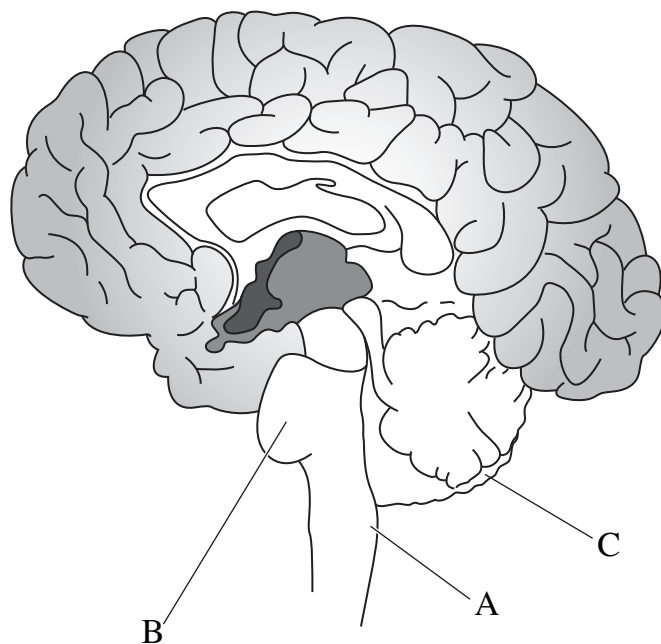
_____ [3]

2 _____

_____ [3]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

2 This is a diagram of the human brain.



© Health and Social Care for Vocational A Level by Hilary Thompson et al., published by Hodder & Stoughton, 2000, ISBN 03407755475, Reproduced by permission of Hodder Education

(a) Write down the name and **one** function of parts A, B and C.

A _____ [1]

Function _____
_____ [1]

B _____ [1]

Function _____
_____ [1]

C _____ [1]

Function _____
_____ [1]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

(b) Jamal, aged 53, and his wife Deepak live in a three storey house on the outskirts of Belfast and drive into the city each day to work in their shop. They travel to England regularly to visit their son and daughter and to buy stock for the shop. Jamal has recently suffered a stroke.

(i) Explain the physiological cause of a stroke.

[2]

(ii) Jamal's co-ordination has been affected by the stroke. He finds it difficult to perform voluntary actions, for example, picking up a pen.

Discuss how the nervous system normally performs voluntary actions.

[3]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

3 (a) This is a diagram of the ear.

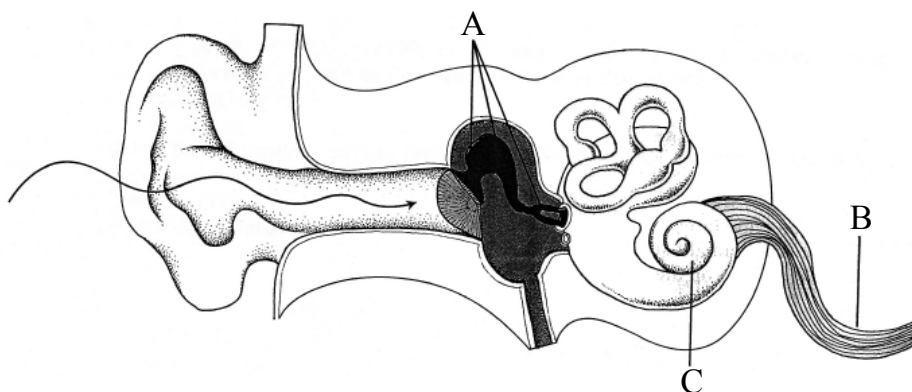


Figure from *New Coordinated Science: Biology* by B Beckett and R-M Gallagher (OUP, 1996), copyright © Oxford University Press, reprinted by permission of Oxford University Press

Explain how each of the following parts contributes to the process of hearing.

A The ear ossicles

[2]

B The auditory nerve

[2]

C The cochlea

[2]

Examiner Only

Marks Remark

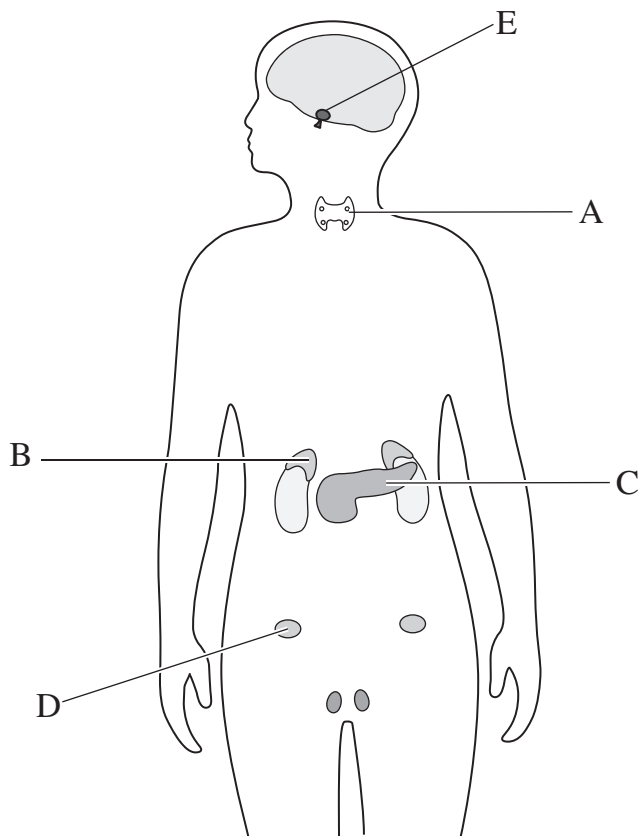
(b) About one in every 1,000 children is deaf at three years old. This rises to two in every 1,000 children aged nine to 16. Approximately 2% of young adults are deaf or hard of hearing. From the age of 40 onwards, a higher proportion of men than women become hard of hearing. Around the age of 50 the proportion of deaf people begins to increase sharply and 55% of people over 60 are deaf or hard of hearing.

Adapted from: Facts and figures on deafness and tinnitus (fact sheet) www.RNID.org.uk

Analyse the causes of hearing loss amongst the British population over the lifespan.

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

4 (a) This is a diagram of the endocrine system.



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(i) Write down the names of the glands A, B, C and D and one hormone produced by each.

Gland A _____ [1]

Hormone _____ [1]

Gland B _____ [1]

Hormone _____ [1]

Gland C _____ [1]

Hormone _____ [1]

Gland D _____ [1]

Hormone _____ [1]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

(ii) Explain two ways endocrine control differs from nervous control.

1 _____

_____ [2]

2 _____

_____ [2]

(iii) Explain why the pituitary gland (E) is often referred to as the master gland.

_____ [2]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

(b) Maura is quadriplegic and attends a day centre with her friends Cyril and Sharon. Cyril is paraplegic and Sharon lost the use of one arm as a result of an accident at work.

(i) Explain the following terms:

Quadriplegic

[2]

Paraplegic

[2]

(ii) Sharon has been told that in time she may regain some use of her arm. Maura and Cyril will not regain any limb movement. Discuss the reasons for this.

[3]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

(iii) Cyril is urinary incontinent. Explain the cause of urinary incontinence.

[2]

| Examiner Only | |
|---------------|--------|
| Marks | Remark |
| | |

THIS IS THE END OF THE QUESTION PAPER

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