



*Rewarding Learning*  
**ADVANCED SUBSIDIARY (AS)**  
**General Certificate of Education**  
**2012**

Centre Number

71

Candidate Number

## Health and Social Care

### Assessment Unit AS 14

*assessing*

#### Unit 14: Understanding Human Physiology

[A3H81]

**TUESDAY 22 MAY, AFTERNOON**



A3H81

#### 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, 3 and 4.

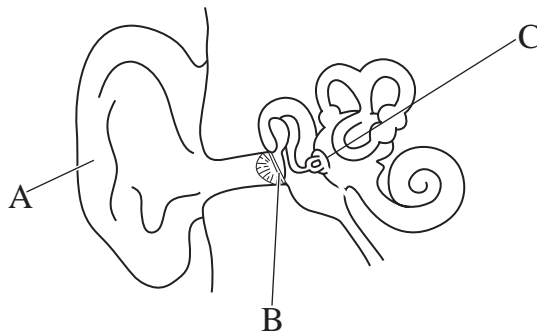
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only

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

Total Marks

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



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(i) Write down the name and function of parts A, B and C.

A \_\_\_\_\_ [1]

Function: \_\_\_\_\_

\_\_\_\_\_ [1]

B \_\_\_\_\_ [1]

Function: \_\_\_\_\_

\_\_\_\_\_ [1]

C \_\_\_\_\_ [1]

Function: \_\_\_\_\_

\_\_\_\_\_ [1]

| Examiner Only |        |
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(ii) Explain the following.

Conductive hearing loss

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[2]

Sensorineural hearing loss

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[2]

(b) Fahima has the eye condition hypermetropia.

(i) Explain how hypermetropia will affect Fahima's ability to see.

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[2]

Fahima has an increased risk of developing glaucoma in later life.

(ii) Explain one cause of glaucoma.

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[2]

| Examiner Only |        |
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| Examiner Only |        |
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| Marks         | Remark |
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2 (a) Jayne burnt her hand by accidentally putting it on the hot plate which was switched on. Her response was to pull her hand away. This type of response is called a reflex action.

(i) Explain what is meant by a reflex action.

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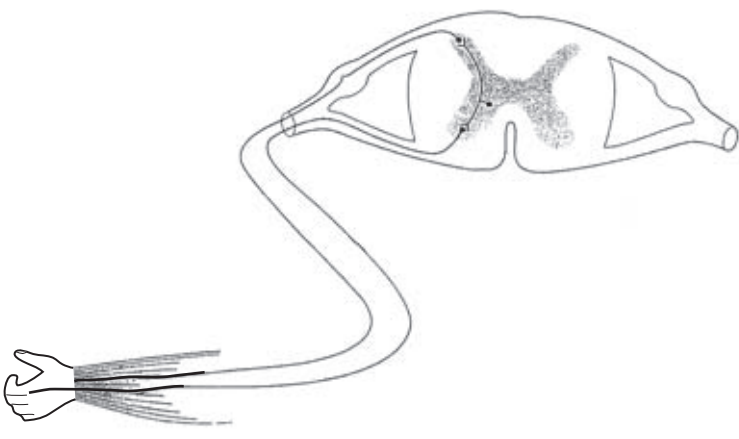
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[2]

(ii) This is a diagram of the reflex arc in Jayne's arm.



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Use the diagram above to discuss the passage of nerve impulses around the body which allowed Jayne to take this reflex action.

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**(b)** George, aged 18 months, often develops fevers. During these, his body temperature rises rapidly and it is difficult to get it to return to the normal range.

**(i)** Write down the medical term for a fever.

\_\_\_\_\_ [1]

**(ii)** Write down the normal range for body temperature.

\_\_\_\_\_ °C to \_\_\_\_\_ °C [2]

**(iii)** Discuss how each of the following contributes to George’s body temperature returning to the normal range.

Sweat glands \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

Blood supply \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

| Examiner Only |        |
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| Marks         | Remark |
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Hair follicles \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

**(iv)** Discuss how the nervous and endocrine systems work together to control body temperature.

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3 (a) (i) Discuss the role of each of the following in the process of digestion.

The mouth \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

The duodenum \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

The ileum \_\_\_\_\_

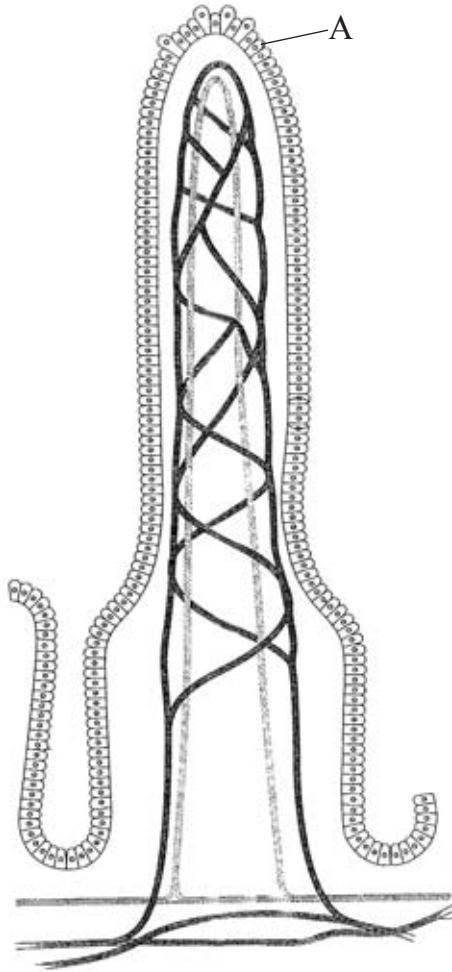
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

The colon \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

| Examiner Only |        |
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(ii) This is a cross-sectional diagram of villi in the gut.



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Write down the name and one function of the cell labelled A.

A \_\_\_\_\_ [1]

Function: \_\_\_\_\_

\_\_\_\_\_ [1]

| Examiner Only |        |
|---------------|--------|
| Marks         | Remark |
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(iii) Discuss two ways that the structure of the villi aids their function.

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

| Examiner Only |        |
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| Marks         | Remark |
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**(b)** Geena, aged 24, has just left university and is about to start her first job. She enjoyed her time at university where she had a busy social life which involved regular binge drinking.

She lives in a flat in the city with three friends who are still studying at university. She was taken ill at home last week and had to visit the Accident and Emergency Department at her local hospital, where she was diagnosed as having acute pancreatitis.

**(i)** Write down one common cause of acute pancreatitis.

\_\_\_\_\_ [1]

**(ii)** Write down two symptoms of acute pancreatitis.

1. \_\_\_\_\_ [1]

2. \_\_\_\_\_ [1]

**(iii)** Discuss how acute pancreatitis may affect Geena's lifestyle.

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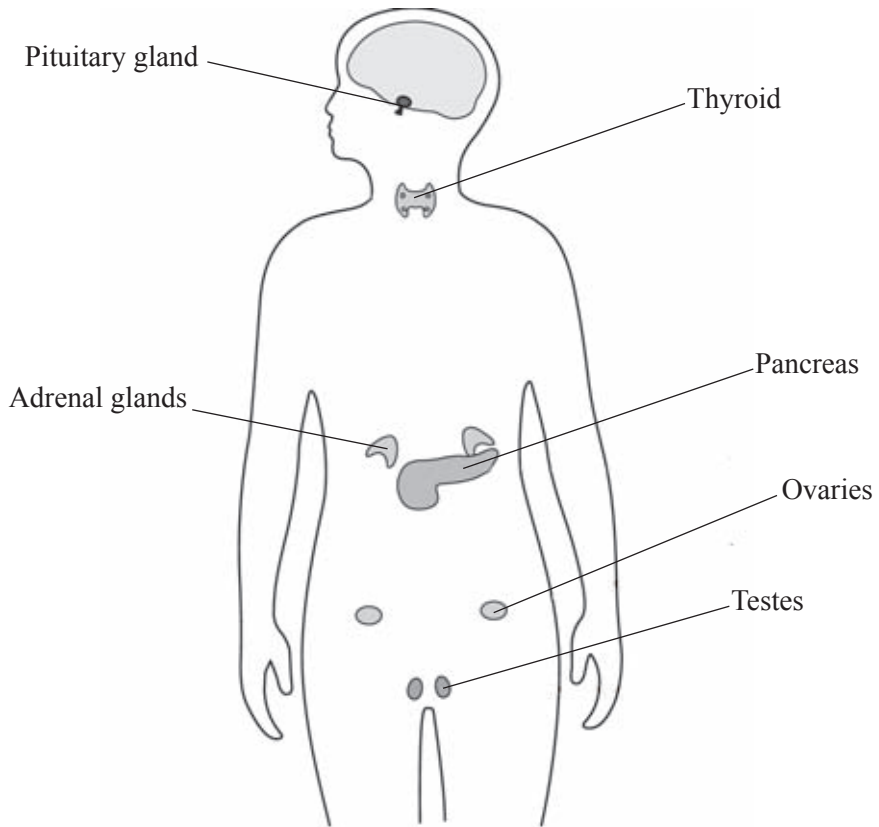
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\_\_\_\_\_

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



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|---------------|--------|
| Marks         | Remark |
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Complete the table below to identify one hormone and its function for each endocrine gland listed.

| Endocrine gland | Hormone | Function |
|-----------------|---------|----------|
| Ovaries         | [1]     | [1]      |
| Testes          | [1]     | [1]      |
| Thyroid         | [1]     | [1]      |
| Pancreas        | [1]     | [1]      |

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| Marks         | Remark |
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