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]

A3H81

TUESDAY 22 MAY, 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.

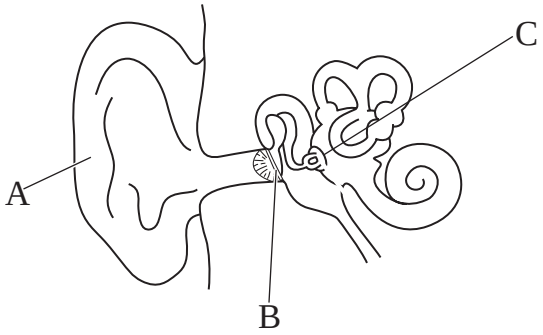
INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Quality of written communication will be assessed in questions **2**, **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	

Examiner Only	
Marks	Remark

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



(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]

(ii) Explain the following.

Examiner Only

Marks	Remark

Conductive hearing loss

_____

_____

_____

_____ [2]

Sensorineural hearing loss

_____

_____

_____

_____ [2]

(b) Fahima has the eye condition hypermetropia.

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

_____

_____

_____

_____ [2]

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

(ii) Explain one cause of glaucoma.

_____

_____

_____

_____ [2]

(iii) Discuss how the eye accommodates to view both near and distant objects.

Examiner Only	
Marks	Remark

[6]

Examiner Only	
Marks	Remark

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.

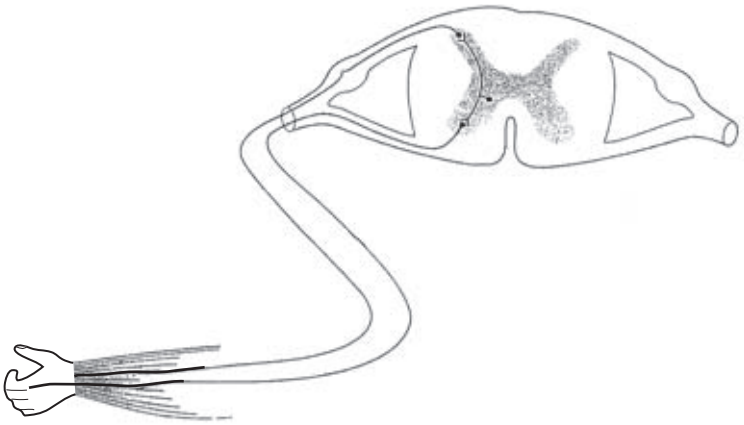
_____

_____

_____

_____ [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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Examiner Only	
Marks	Remark

[8]

(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.

Examiner Only

Marks	Remark

(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	
Marks	Remark

Hair follicles _____

_____

_____

_____

_____

_____ [3]

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

_____

_____

_____

_____

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Examiner Only	
Marks	Remark

[9]

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

Examiner Only	
Marks	Remark

The mouth _____

_____

_____

_____

_____

_____ [3]

The duodenum _____

_____

_____

_____

_____

_____ [3]

The ileum _____

_____

_____

_____

_____

_____ [3]

The colon _____

_____

_____

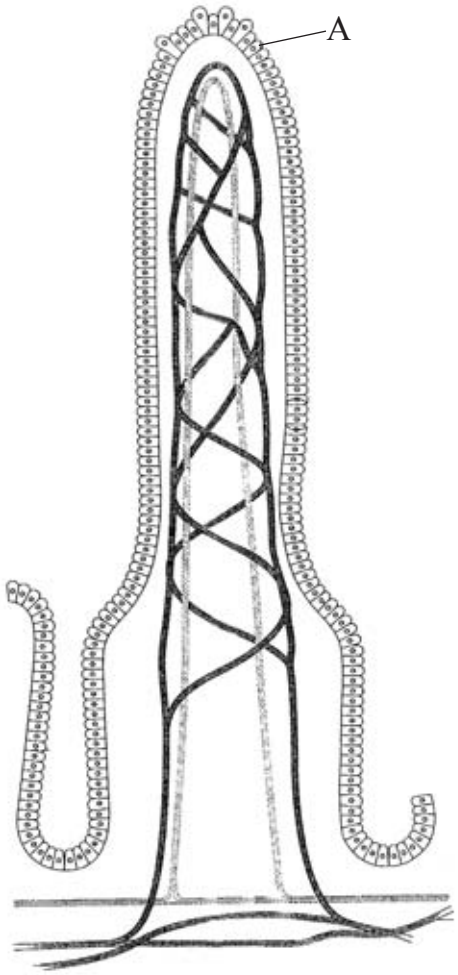
_____

_____

_____ [3]

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

Examiner Only	
Marks	Remark



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

A _____ [1]

Function: _____

_____ [1]

(iii) Discuss two ways that the structure of the villi aids their function.

Examiner Only	
Marks	Remark

1. _____

_____

_____

_____

_____

_____ [3]

2. _____

_____

_____

_____

_____

_____ [3]

Examiner Only	
Marks	Remark

(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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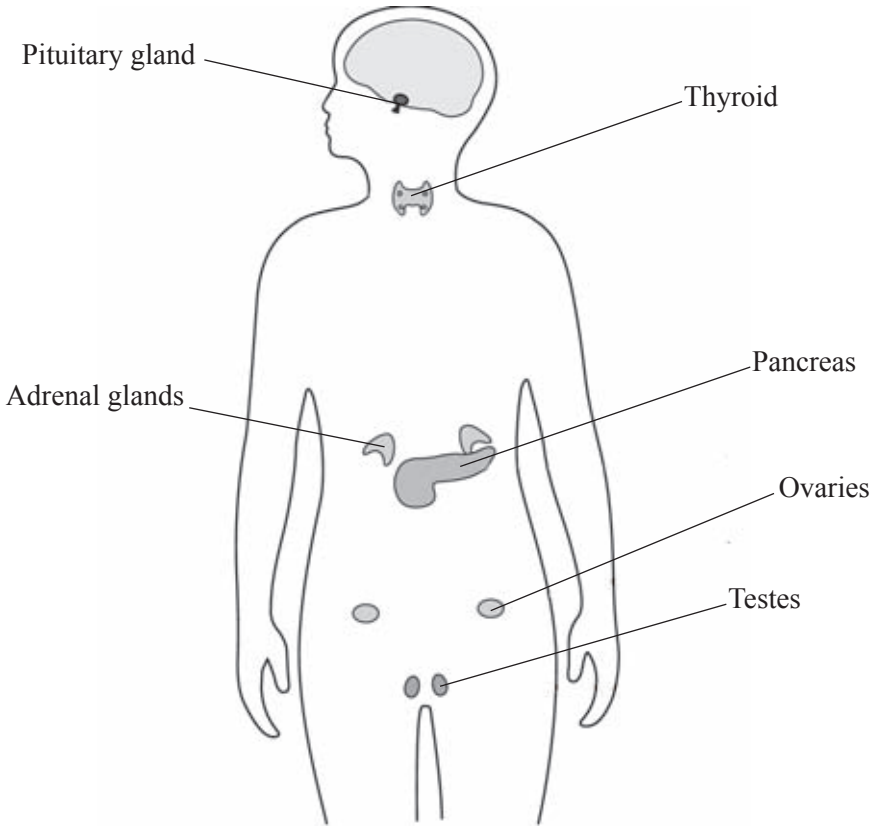
Examiner Only	
Marks	Remark

[9]

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



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Examiner Only	
Marks	Remark

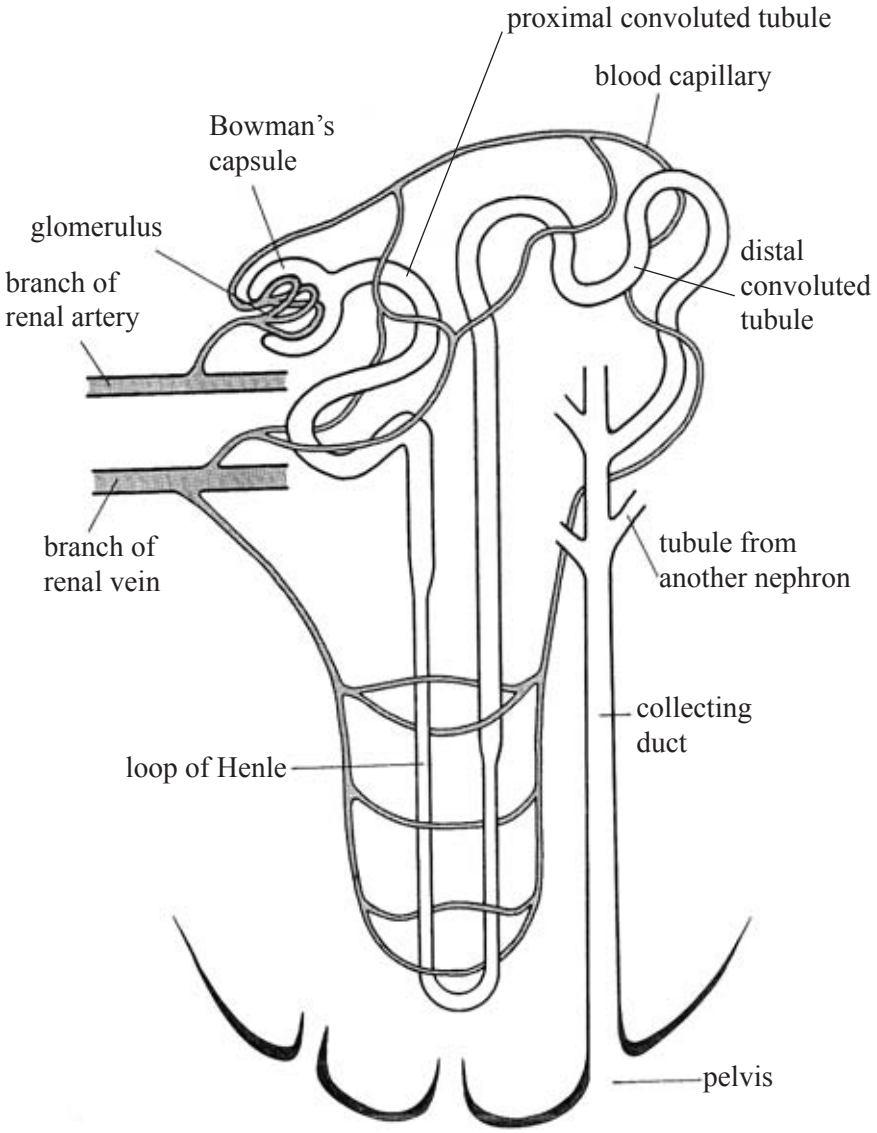
Complete the table below to identify one hormone and its function for each endocrine gland listed.

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

Examiner Only

Marks	Remark

(b) This is a diagram of a nephron.



Using the diagram above, analyse how the nephron filters the blood.

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

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