Rewarding Learning

ADVANCED SUBSIDIARY (AS)

General Certificate of Education

2019

Centre Number

Candidate Number

Health and Social Care

Assessment Unit AS 7

assessing

Understanding the Physiology of Health and Illness

SHC71

[SHC71]

THURSDAY 30 MAY, MORNING

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 three** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Quality of written communication will be assessed in questions **1(d)(ii)**, **3(b)(i)** and **3(d)**.
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	
Total Marks	

1 The diagram below shows the structure of a generalised animal cell.

Examiner Only	
Marks	Remark

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

A: Name _____ [1]

Function _____ [1]

B: Name _____ [1]

Function _____ [1]

C: Name _____ [1]

Function _____ [1]

(b) The four main tissue types in the body are nervous, muscle, connective and epithelial. Identify them below.

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Marks	Remark

(i)

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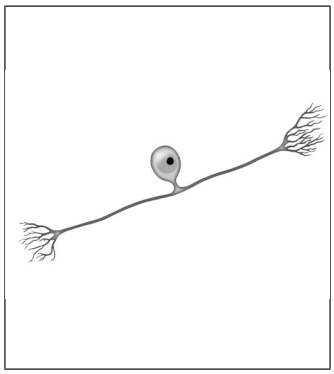
_____ [1]

(ii)



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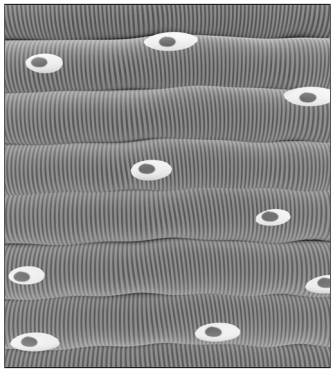
_____ [1]

(iii)



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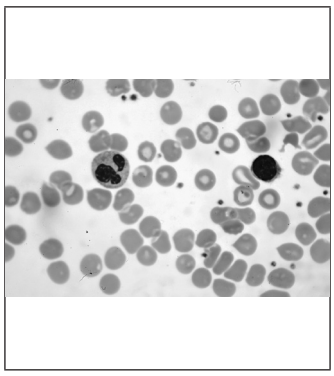
_____ [1]

(iv)



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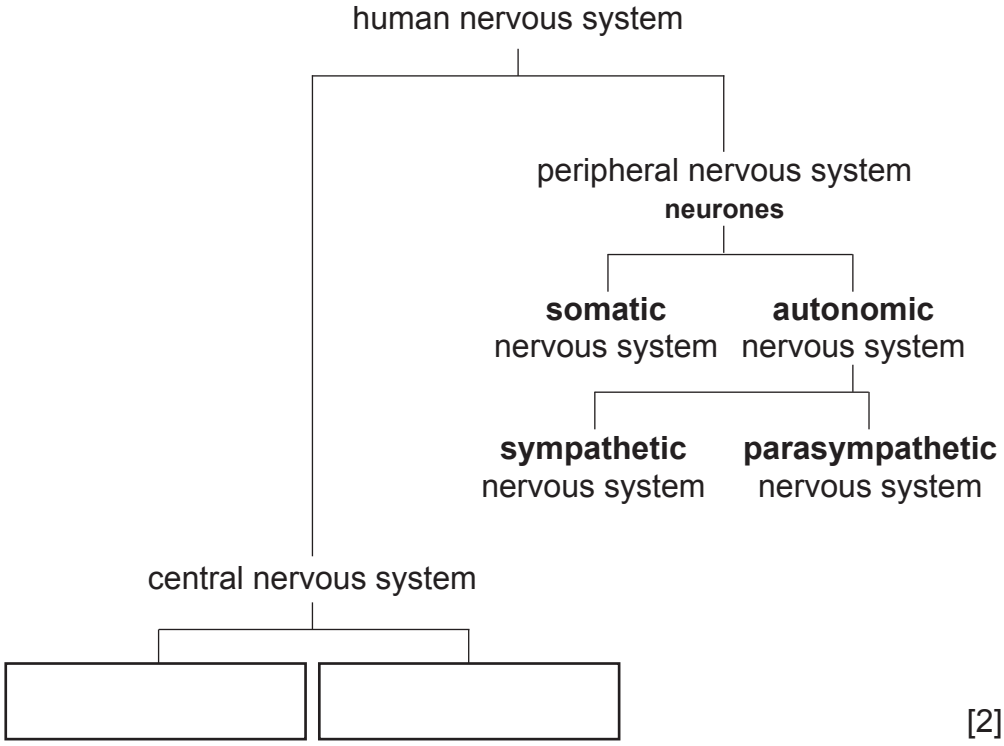
_____ [1]

(c) (i) The diagram below shows the organisation of the nervous system.

Complete the diagram to show the two divisions of the central nervous system.



[2]

Examiner Only	
Marks	Remark

(ii) Explain the function of each of the following parts of the central nervous system.

Hypothalamus

_____

_____

_____

_____ [2]

Cerebellum

_____

_____

_____

_____ [2]

Medulla oblongata

_____

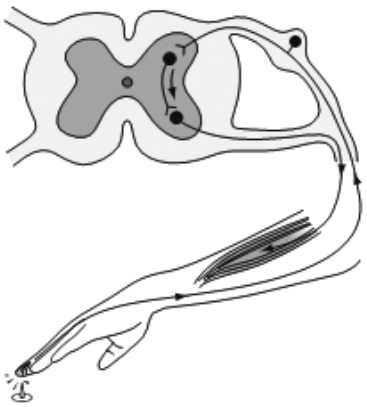
_____

_____

_____ [2]

Examiner Only	
Marks	Remark

(d) The diagram below shows a reflex arc.



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(i) Reflex actions such as the one shown in the diagram are involuntary actions. Explain what is meant by the term involuntary.

_____

_____

_____

_____ [2]

(ii) Use the diagram above to discuss the mechanism that causes the arm to move away from the pin quickly.

_____

_____

_____

_____

_____

_____

_____

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Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

[9]

Examiner Only	
Marks	Remark

(e) (i) The nervous system works with the endocrine system to coordinate and control the body.

Complete the table below to identify the gland, hormone or target organ involved in the endocrine system.

Gland	Hormone released	Target organ(s)
	adrenaline	heart, lungs and digestive system
pancreas		liver
	anti-diuretic hormone (ADH)	
pituitary		ovaries

[5]

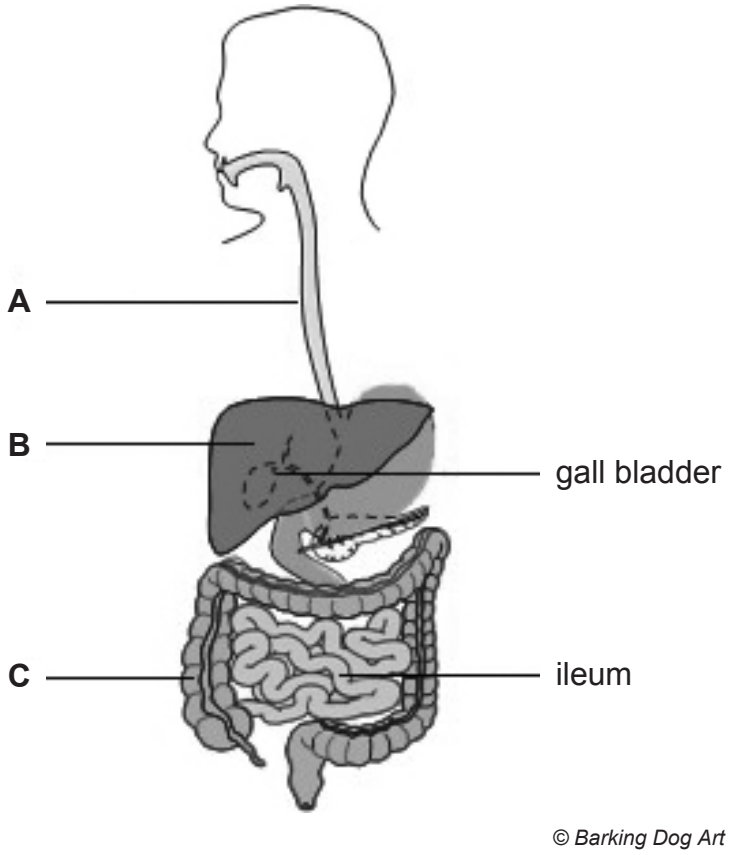
(ii) Choose words from the box below to complete the sentences about the endocrine and nervous systems. Words may be used once or not at all.

endocrine chemical electrical faster nervous

slower tissue fluid blood circulatory neurones

The endocrine system secretes _____ messengers called hormones, which are released from glands and travel to target organs via the _____ . The nervous system transmits _____ messages via _____ to effectors (muscle or glands). The transmission in the nervous system is much _____ than the transmission in the endocrine system. The effects of the _____ system are short lived whilst the effects of the _____ system are prolonged. [7]

2 The diagram below shows the structure of the digestive system.



(a) Write down the names of the parts labelled **A**, **B** and **C**.

A _____ [1]

B _____ [1]

C _____ [1]

(b) Outline the role of the gall bladder.

_____

_____

_____

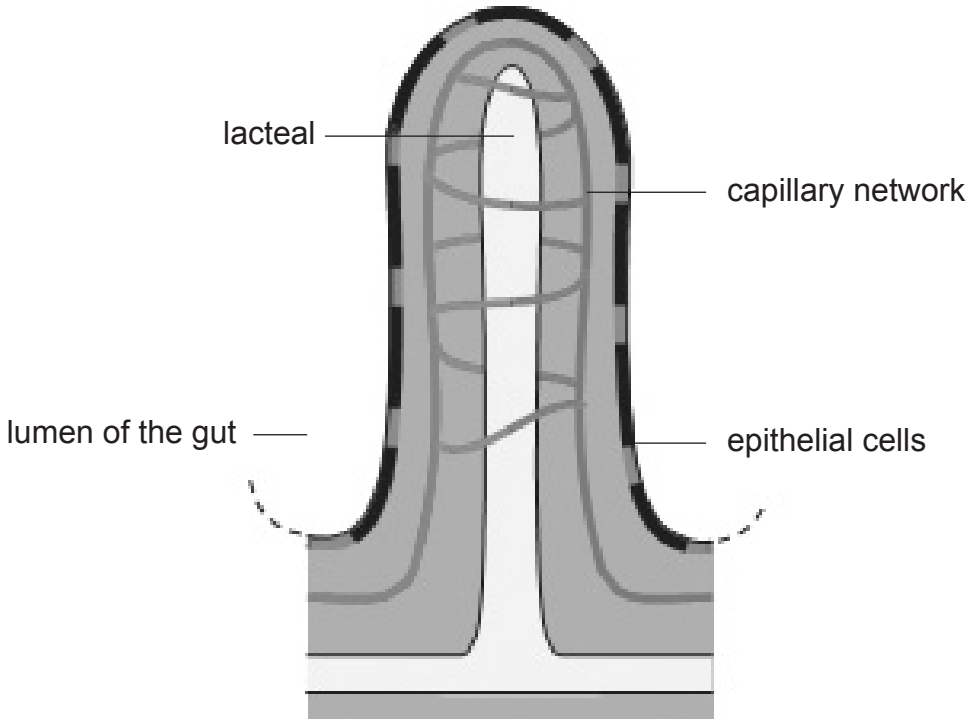
_____

_____

_____ [3]

Examiner Only	
Marks	Remark

(c) The absorption of digested food takes place in the ileum. Use the diagram of a cross section of part of the ileum to help you discuss how it is adapted for the absorption of food.



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Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

[6]

(d) Describe the physiological causes of the following conditions of the digestive system.

Examiner Only	
Marks	Remark

Stomach ulcer

_____

_____

_____

_____

_____

_____ [3]

Acute pancreatitis

_____

_____

_____

_____

_____

_____ [3]

(e) David, an 18-year-old student at university, has recently developed acute pancreatitis following a week of over indulgence of alcohol at freshers' week. Describe how this diagnosis may affect his leisure and education.

Leisure

_____

_____

_____

_____

_____

_____ [3]

Education

_____

_____

_____

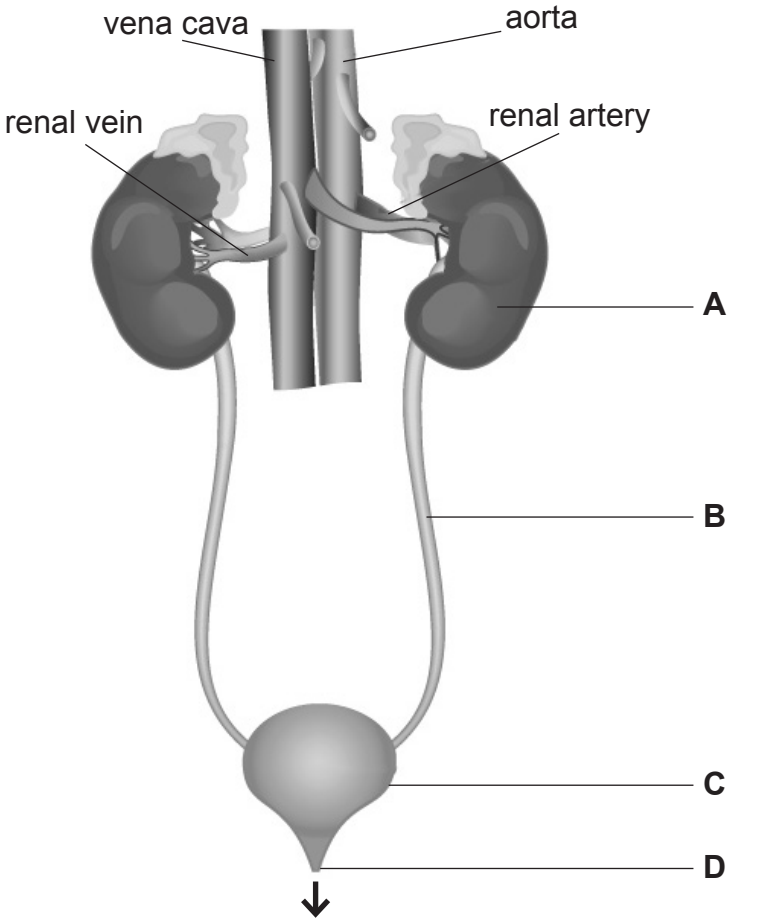
_____

_____

_____ [3]

Examiner Only	
Marks	Remark

3 The diagram below shows the structure of the urinary system.



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(a) **(i)** Write down the names of the structures labelled **A**, **B**, **C** and **D**.

A _____ [1]

B _____ [1]

C _____ [1]

D _____ [1]

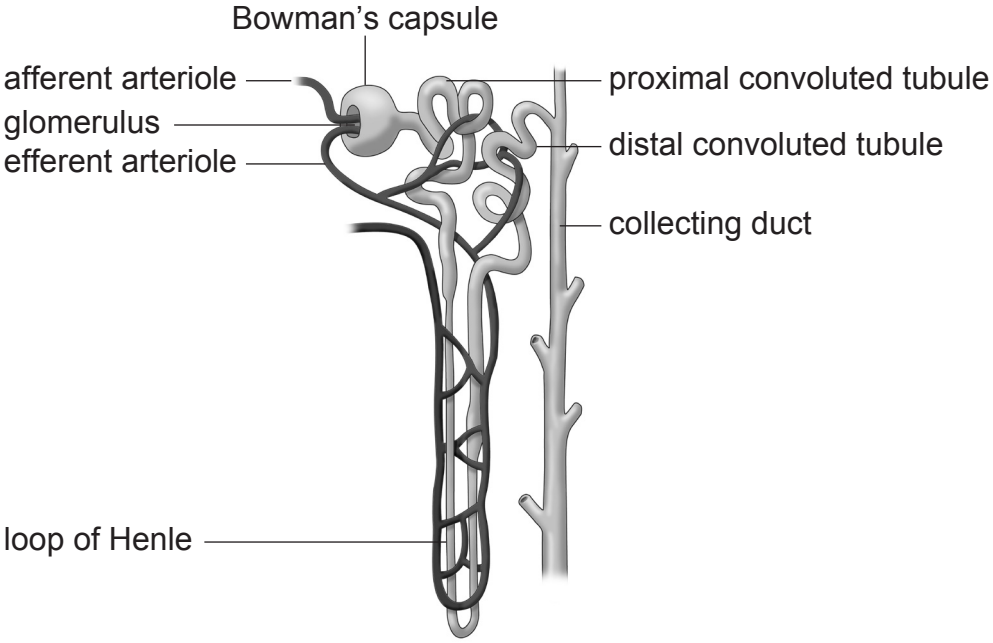
(ii) State the two functions of the urinary system.

1. _____ [1]

2. _____ [1]

Examiner Only	
Marks	Remark

(b) (i) The diagram below shows the structure of the kidney nephron.



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Discuss what happens at each of the following parts of the nephron:

- glomerulus and Bowman's capsule
- proximal convoluted tubule
- collecting duct

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

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_____ [12]

(ii) One of the main substances removed by the kidneys is urea.
Identify the organ that produces urea.

_____ [1]

(iii) Describe how urea is made.

_____

_____

_____

_____

_____

_____ [3]

(c) Explain the physiological causes of type 1 and type 2 diabetes.

Examiner Only	
Marks	Remark

Type 1 diabetes

_____

_____

_____

_____ [2]

Type 2 diabetes

_____

_____

_____

_____ [2]

(d) Martha, aged 42, lives with her husband and three young children. She is a cook in a local school canteen. Martha was recently diagnosed with renal failure and she requires regular dialysis.

Discuss how renal failure may impact on her income, diet and relationships.

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Marks	Remark

Examiner Only	
Marks	Remark

[9]

THIS IS THE END OF THE QUESTION PAPER

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