



Rewarding Learning

ADVANCED SUBSIDIARY (AS)  
General Certificate of Education  
2024

Centre Number

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Candidate Number

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# Health and Social Care

Assessment Unit AS 7

*assessing*

Understanding the Physiology of  
Health and Illness



[SHC71]

\*SHC71\*

**TUESDAY 4 JUNE, MORNING**

### TIME

2 hours

### INSTRUCTIONS TO CANDIDATES

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

**You must answer the questions in the spaces provided.**

**Do not write outside the boxed area on each page or on blank pages.**

Complete in black ink only. Do not write with a gel pen.

Answer **all three** questions.

### INFORMATION FOR CANDIDATES

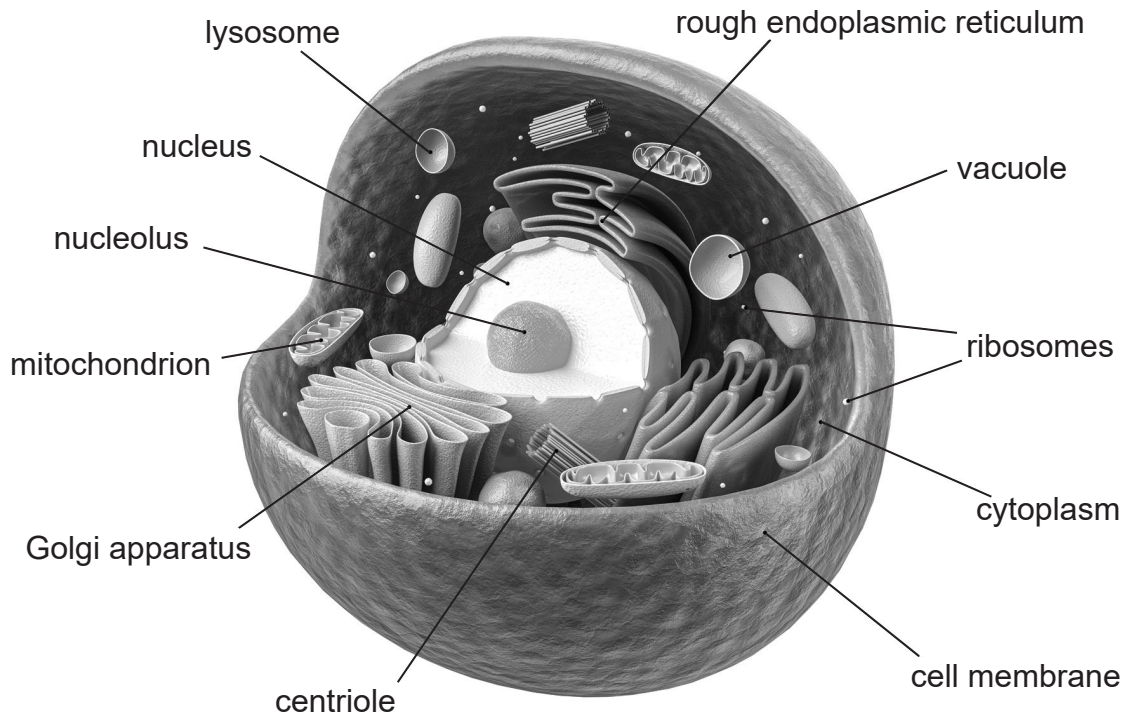
The total mark for this paper is 100.

Quality of written communication will be assessed in questions **1(c)(iv)**, **2(b)** and **3(c)(ii)**.

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



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



Source: © Getty Images



(a) (i) Write down **one** function of each of the following organelles:

Golgi apparatus

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[1]

Mitochondrion

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[1]

Ribosome

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[1]

Lysosome

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[1]

[Turn over



(ii) Cells can be specialised into **four** main types of tissue.

Complete the table below by identifying the examples of tissues and their function as indicated.

Tissue	Example of tissue	Function
connective	[1]	carrying oxygen to every cell in the body
epithelial	lining of digestive tract	[1]
muscle	skeletal	[1]
nervous	[1]	carrying impulse to effector

(iii) Explain the term organ.

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[2]



(b) (i) Complete the paragraph below to outline the organisation of the nervous system.

The human nervous system consists of a number of subsystems with different functions.

The central nervous system consists of the spinal cord and

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

The autonomic nervous system consists of the

\_\_\_\_\_ nervous system [1], which controls the rest and digest response, and the sympathetic nervous system, which controls the \_\_\_\_\_ response. [1]

There is also voluntary control of the output to skeletal muscle

and \_\_\_\_\_ control [1] of smooth muscle and glands.

(ii) Describe the role of the pituitary gland, which is found at the base of the brain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

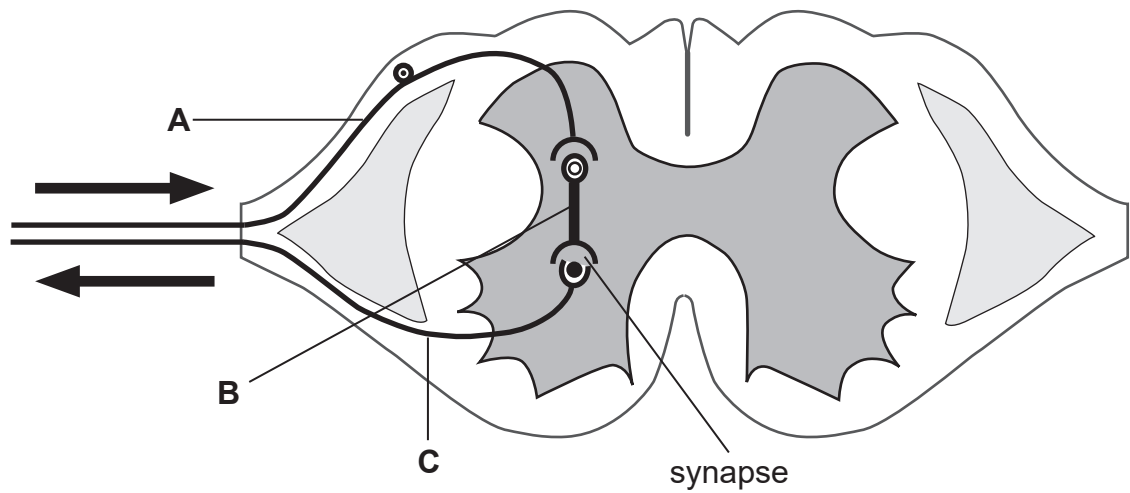
\_\_\_\_\_

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

[Turn over



(c) The diagram below shows a reflex arc.



Source: Chief Examiner

(i) Write down the names of the three types of neurone, **A**, **B** and **C**.

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

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

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

(ii) Explain why the reflex arc is needed by the nervous system.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]



(iii) The diagram of the reflex arc shows a cross section of the spinal cord.

Explain how damage to the spinal cord can cause paraplegia.

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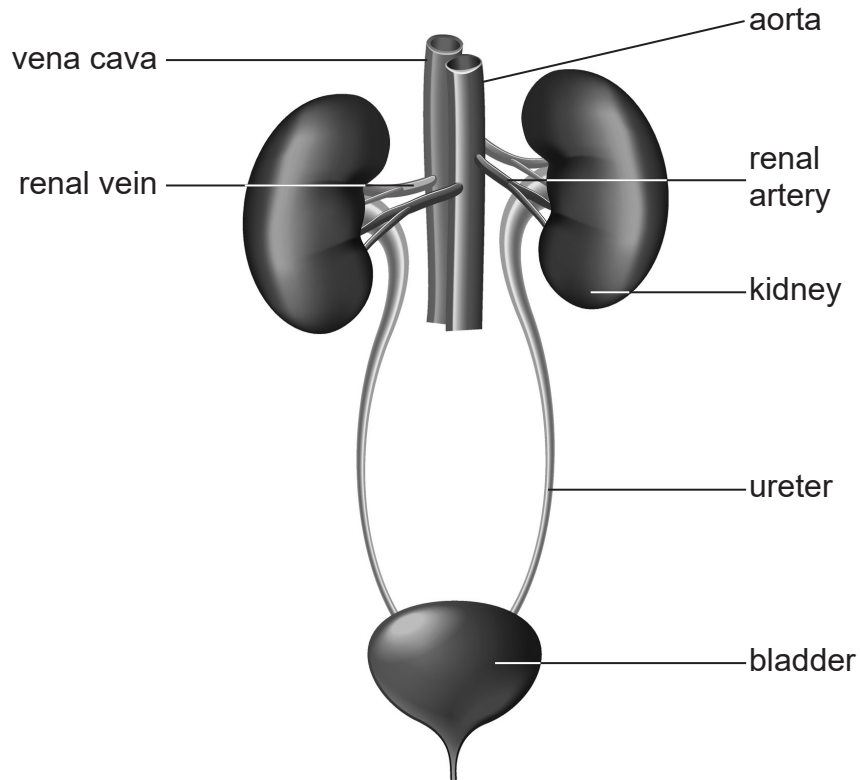
[2]







2 (a) This is a diagram of the urinary system.



Source: © Getty Images

(i) Explain the function of each of the following parts.

Bladder

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[2]

Ureter

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[2]



Renal vein

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[2]

(ii) One role of this system is osmoregulation.

Write down the other main role of the urinary system.

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[1]

(iii) Osmoregulation is important as it helps maintain the body's water balance.

Describe the impact of dehydration on the body.

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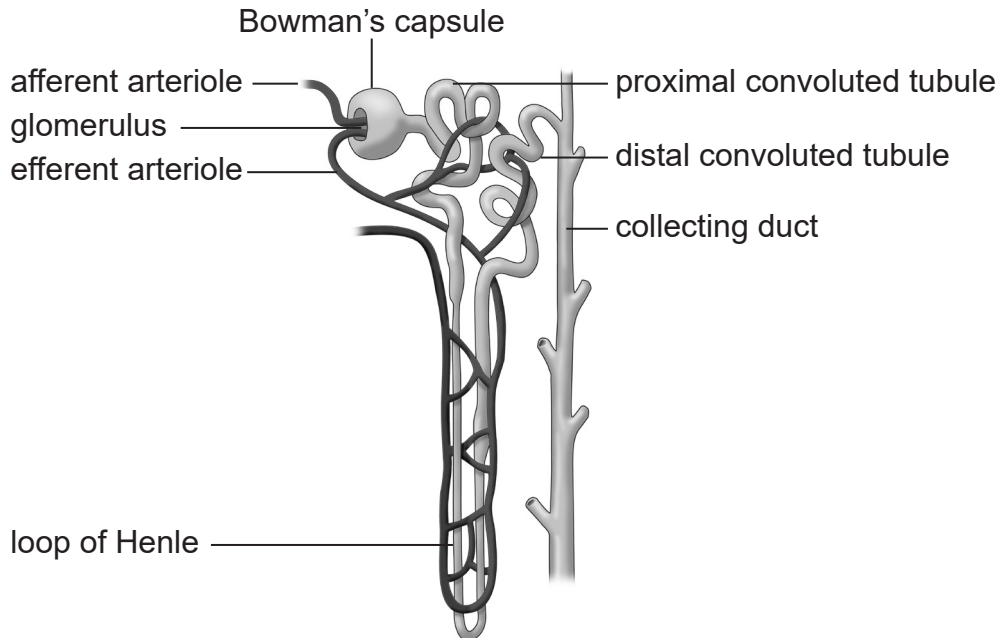
[3]

[Turn over



(b) The diagram below shows the structure of the nephron, which is the filtration unit of the kidney.

Using the diagram and your knowledge of the nephron, discuss how filtration, reabsorption and osmoregulation occur in the kidney, including the role of anti-diuretic hormone (ADH).



Source: © Monica Schroeder / Science Photo Library









(c) Anti-diuretic hormone (ADH) is one of the hormones produced by the endocrine system.

(i) Complete the table below to identify the endocrine organ which produces each of the hormones indicated.

Endocrine organ	Hormone
[1]	thyroxine
[1]	adrenaline
[1]	oestrogen

(ii) The pancreas maintains the correct level of glucose in the blood.

Outline how blood glucose levels are regulated by the hormones insulin and glucagon in the pancreas.

Insulin

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[3]





# Glucagon

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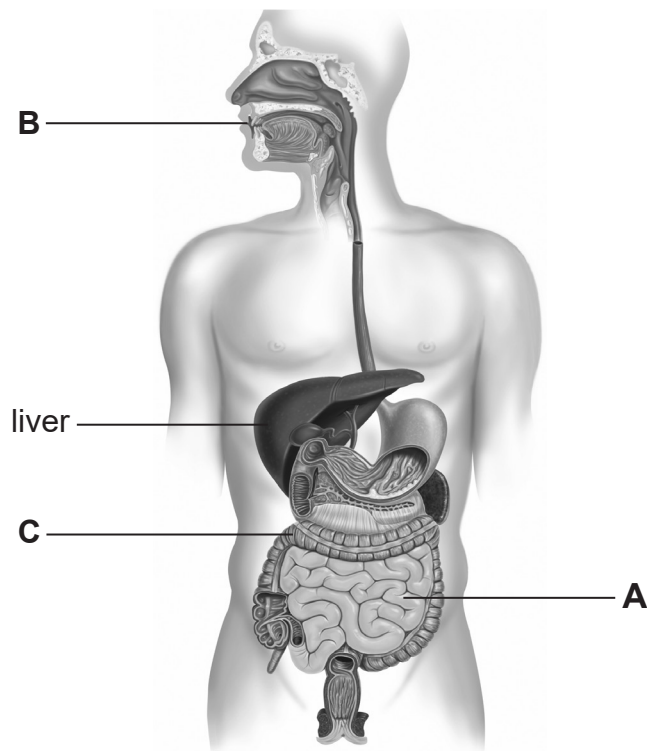
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[3]

[Turn over



3 (a) This is a diagram of the digestive system.



Source: © Getty Images

(i) Identify and explain the functions of the parts labelled A, B and C.

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

Functions

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ [2]





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

Functions

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\_\_\_\_\_ [2]

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

Functions

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\_\_\_\_\_ [2]

- (ii) Bile is produced in the pancreas and released into the system via the bile duct.

Explain the function of bile in digestion.

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\_\_\_\_\_ [2]





(b) Jenny, aged 36, works full time as a nurse in the local hospital. She has been diagnosed as having a stomach ulcer. As a result, Jenny's GP has advised her to modify her diet.

(i) Identify the bacteria that cause a stomach ulcer.

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

(ii) Explain **two** ways that Jenny could change her diet now that she has been diagnosed with an ulcer.

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

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

[Turn over







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**THIS IS THE END OF THE QUESTION PAPER**

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**DO NOT WRITE ON THIS PAGE**

For Examiner's use only	
Question Number	Marks
1	
2	
3	

<b>Total Marks</b>	
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Examiner Number

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