



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--	--

Health and Social Care

Assessment Unit AS 7

assessing

Understanding the Physiology of
Health and Illness

MV18

[SHC71]

Assessment

Assessment Level of Control Tick the relevant box (✓)

Controlled Conditions	<input type="checkbox"/>
Other	<input type="checkbox"/>

Time

2 hours, plus your additional time allowance.

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.

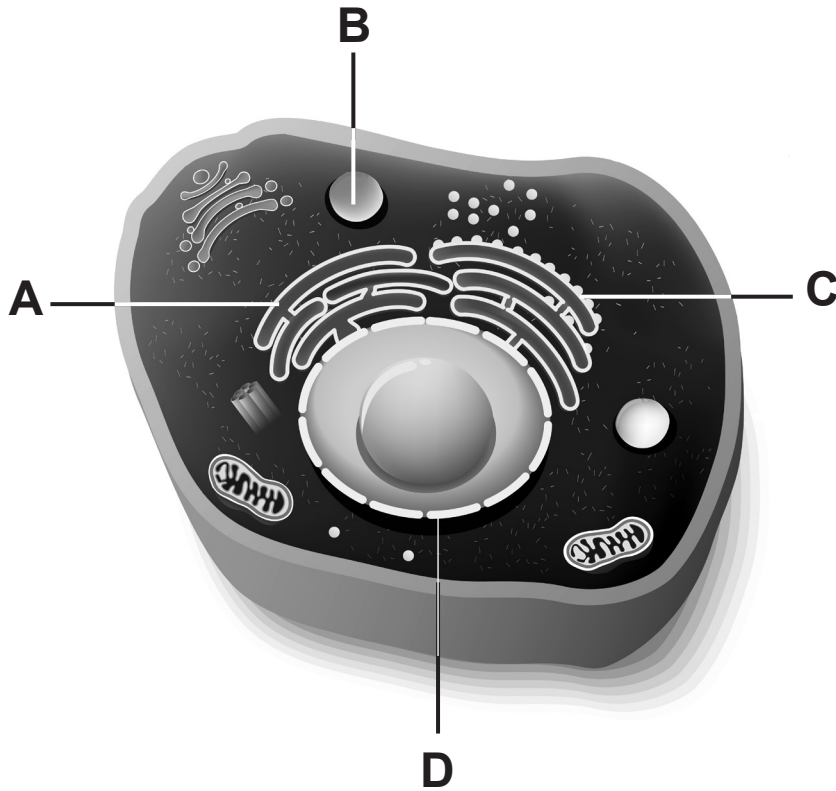
Information for Candidates

The total mark for this paper is 100.

Quality of written communication will be assessed in questions **1(d)(iii)**, **2(c)** and **2(e)**.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

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



(a) Write down the name and state **one** function of the organelles labelled **A**, **B**, **C** and **D**.
[1 mark for each name, 1 mark for each function]

A: Name _____

Function _____

B: Name _____

Function _____

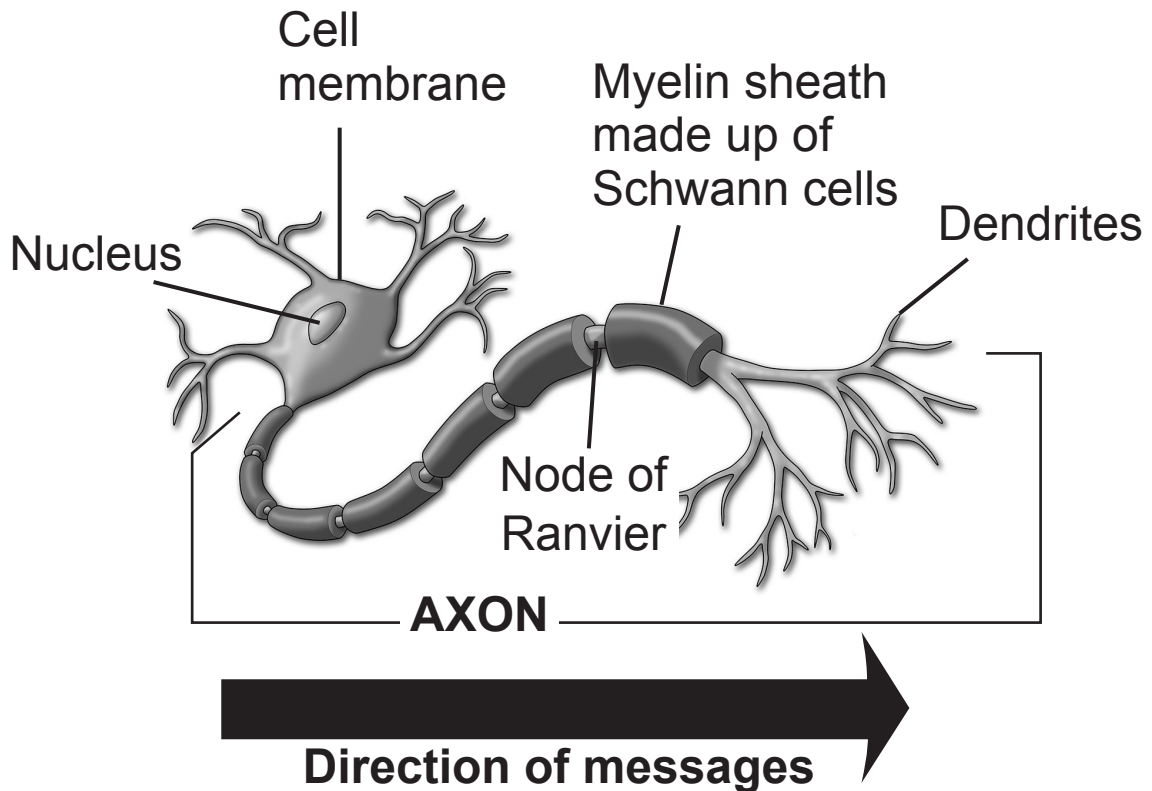
C: Name _____

Function _____

D: Name _____

Function _____

(b) The diagram below shows a specialised animal cell called a motor neurone.



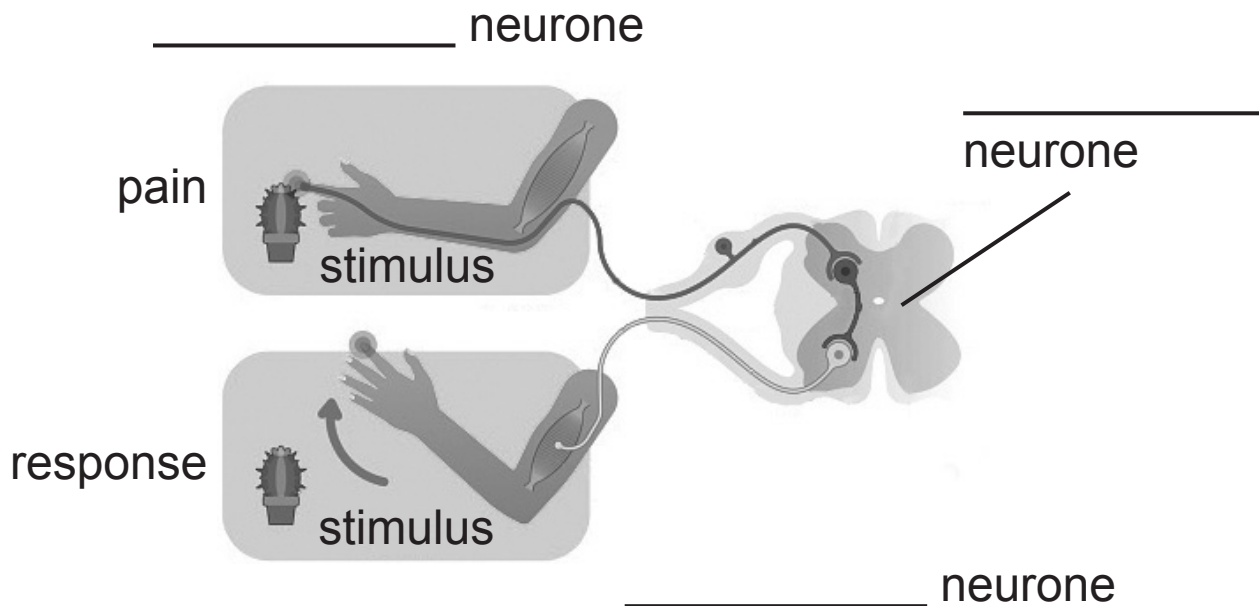
The myelin sheath labelled in the diagram is found on some motor neurones. Describe how this structure speeds up the electrical transmission along the neurone. [3 marks]

(c) When specialised cells group together to perform a function, they are called tissues. Complete the table below to give the name, function or area of the body where the tissue is commonly found. [3 marks]

Name of tissue	Function	Area of the body where the tissue commonly found
Cardiac muscle	A special type of muscle that contracts without nervous stimulation	
	Gives strength and flexibility to skeleton	At the end of bone in joints, e.g. the knee
Adipose		Around organs and beneath the skin

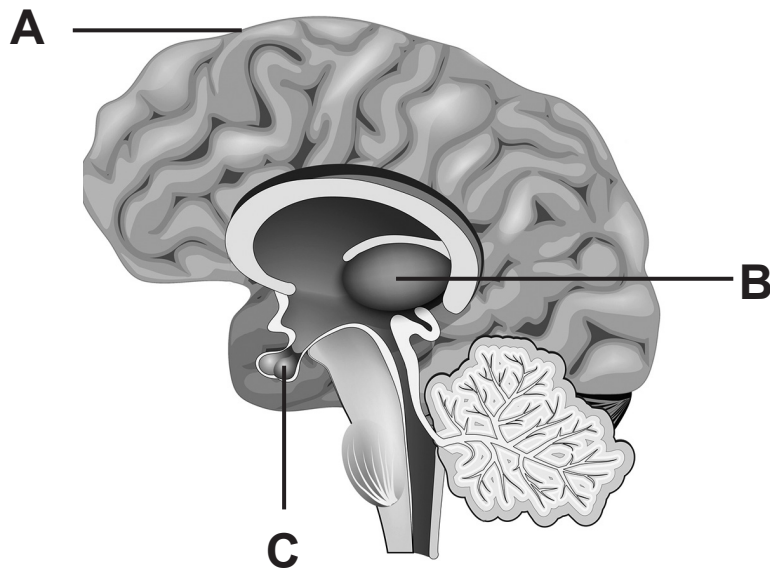
(d) The motor neurone is one of three neurones involved in the reflex arc. The diagram below shows a reflex arc.

(i) On the diagram, label the motor neurone, the association neurone and the sensory neurone.
[3 marks]



(ii) Explain why reflex responses like the one shown in the diagram are an advantage to the body.
[2 marks]

2 The diagram below shows a cross section of the brain.



(a) (i) Write down the names of parts **A**, **B** and **C**.
[1 mark for each]

A _____

B _____

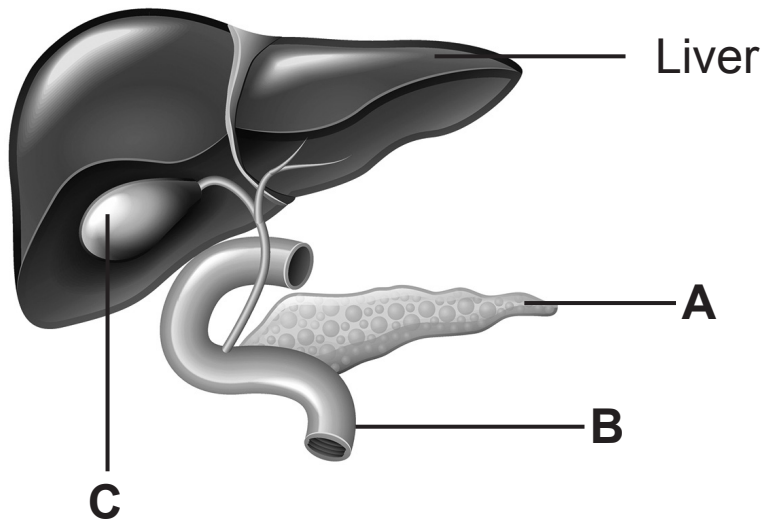
C _____

(ii) The brain and which other structure make up the central nervous system? [1 mark]

(d) (i) There are **two** main types of stroke, an ischaemic stroke and a haemorrhagic stroke. Describe the difference between these two main types of stroke. [3 marks]

(ii) Write down **two** signs or symptoms that someone may be having a stroke. [1 mark for each]

- 3 The diagram below shows some of the organs associated with the digestive system.



- (a) Write down the name and **one** function in digestion of the parts labelled **A**, **B** and **C**.
[1 mark each name, 1 mark each function]

A: Name _____

Function in digestion _____

B: Name _____

Function in digestion _____

C: Name _____

Function in digestion _____

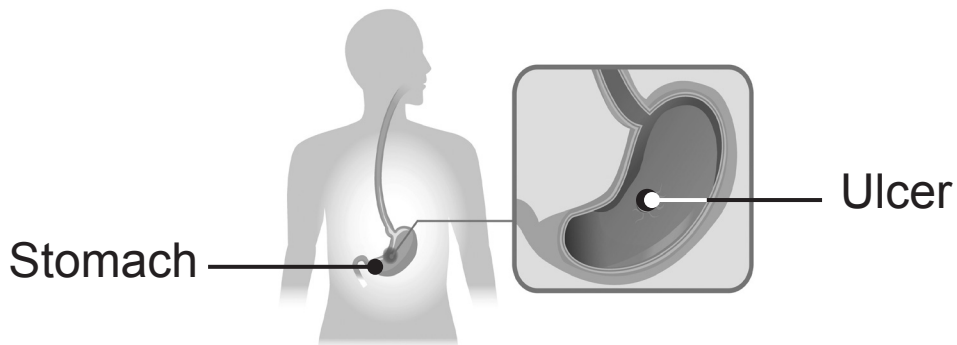
- (b) (i)** Complete the paragraph below to show how blood glucose levels are controlled. [5 marks]

After a meal, blood glucose levels rise. This rise is detected by organ **A**. The organ then releases the hormone _____, which travels to the _____ and reduces the amount of blood glucose by converting the glucose to _____ . The hormone also increases the uptake of glucose by cells and increases the rate of respiration. After some time, the blood glucose levels will begin to fall below normal as all the available glucose has been used up in respiration. Organ **A** will then release a second hormone called _____. This causes the stored glycogen to be broken down into glucose. The glucose is then released from the liver into the _____ and carried to the cells in the body where it is needed.

- (ii)** Complete the sentence below. [2 marks]

The normal level of blood glucose is between _____ mmol/dm³ and _____ mmol/dm³.

(c) John has recently developed a stomach ulcer. The diagram below shows a stomach ulcer.

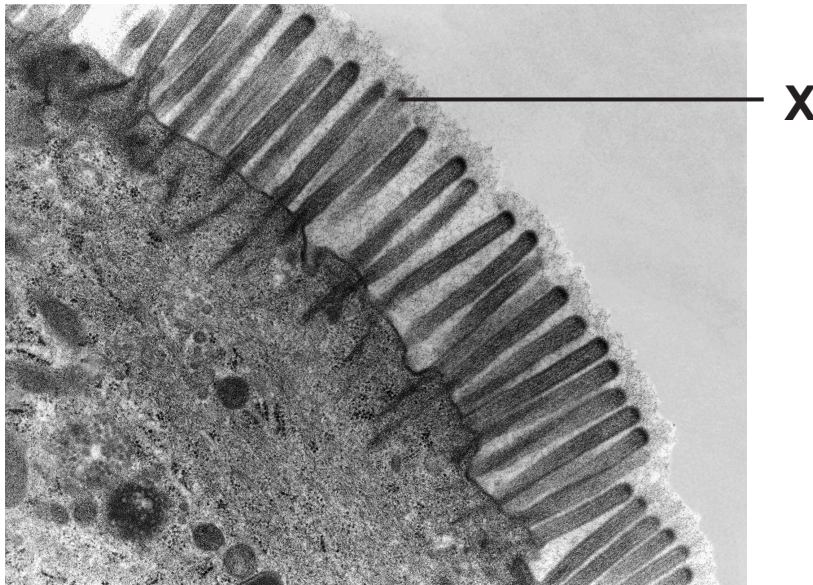


(i) Describe how a stomach ulcer develops.
[3 marks]

(ii) Suggest how John may have to adapt his diet.
[3 marks]

(iii) Explain how having a stomach ulcer may impact on John's work. [2 marks]

(d) The diagram below shows an electron micrograph photo of part of the ileum (small intestine).



Write down the name of the structure labelled **X** in the photograph and give its function.
[1 mark for name, 1 mark for function]

Name _____

Function _____

(e) Once food is absorbed across the ileum into the blood it is transported to the liver. One of the roles of the liver is deamination of amino acids.

(i) Explain why is it important that excess amino acids are deaminated in the liver. [2 marks]

(ii) Describe how amino acids are deaminated in the liver. [3 marks]

- (f) The photographs below show the liver of a healthy person and the liver of a person who has cirrhosis of the liver.

healthy liver

liver with cirrhosis



- (i) Outline the physiological process that causes cirrhosis of the liver. [3 marks]

- (ii) Explain why someone who has cirrhosis of the liver should avoid alcohol. [2 marks]

This is the end of the question paper

Sources:

Q1(a).....© Getty Images

Q1(b).....© Monica Schroeder / Science Photo Library

Q1(d).....© Getty Images

Q2.....© Getty Images

Q3(a).....© Getty Images

Q3(c).....© Getty Images

Q3(d)© Dennis Kunkel Microscopy / Science Photo Library

Q3(f)© Getty Images

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

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA will be happy to rectify any omissions of acknowledgement in future if notified.