



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2014

Centre Number

71

Candidate Number

Health and Social Care

Assessment Unit AS 14

assessing

Unit 14: Understanding Human Physiology

[A3H81]

TUESDAY 20 MAY, MORNING



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(a)**, **4(a)** and **4(d)**.

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

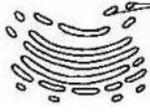
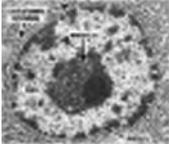
For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	

Total Marks	
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1 (a) The table below shows some of the organelles found in a human cell.

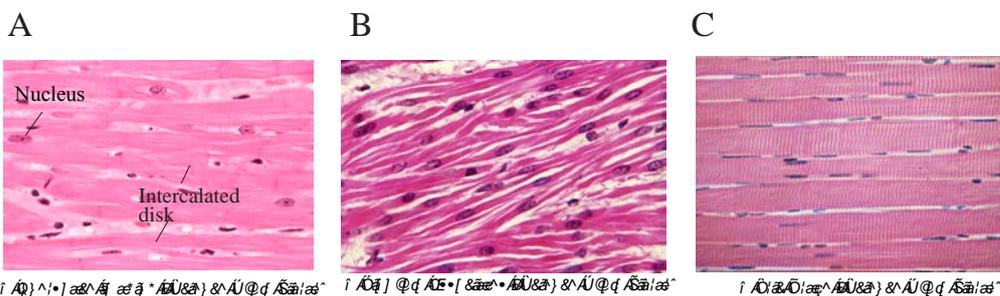
Complete the table by writing down the name and one function of each organelle.

Organelle	Name	Function
		
		
		
		

8 marks [8]

(b) The images below show the structure of different muscle types.

Write down the name of muscle types A, B and C.



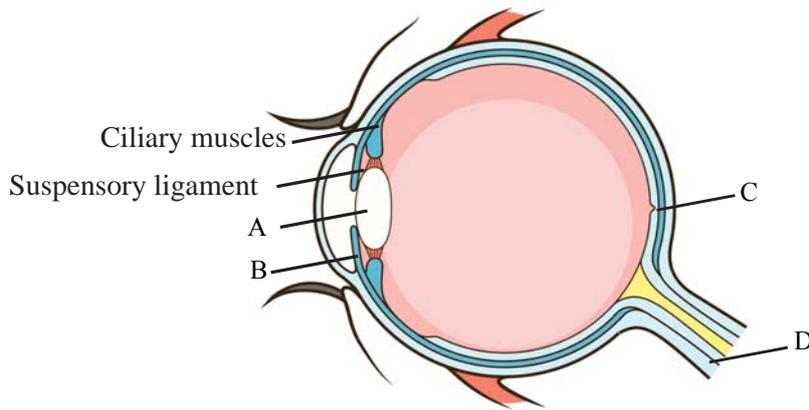
A _____ [1]

B _____ [1]

C _____ [1]

Examiner Only	
Marks	Remark

(c) The diagram below shows the structure of the eye.



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

A Name _____ [1]

Function _____ [1]

B Name _____ [1]

Function _____ [1]

C Name _____ [1]

Function _____ [1]

D Name _____ [1]

Function _____ [1]

Examiner Only	
Marks	Remark

- (ii) The ciliary muscles and suspensory ligament, labelled in the diagram, are involved in the accommodation of light on the retina.

Circle the correct options in the boxes below to demonstrate your knowledge of accommodation.

When focusing on a near object the suspensory ligaments are

slack / taut and the ciliary muscles are **contracted / relaxed**

making the lens appear **thicker / thinner** .

[3]

- (iii) Explain what is meant by the following terms.

Myopia _____

_____ [2]

Presbyopia _____

_____ [2]

Examiner Only	
Marks	Remark

(b) Gita is eight months old and she often develops a high temperature which can be difficult to control. Her mother monitors her temperature regularly.

(i) Write down the normal range for body temperature.

_____ °C to _____ °C [2]

(ii) Explain why it can be more difficult for infants to control their body temperature.

 _____ [2]

(iii) Explain what is meant by the following terms.

Pyrexia _____

 _____ [2]

Hypothermia _____

 _____ [2]

Examiner Only	
Marks	Remark

3 (a) (i) The diagram below shows the structure of the brain.

On the diagram mark the position of the pituitary gland with an X.



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[1]

(ii) Write down the name of the hormone released by the pituitary gland and the organ it reaches that is responsible for the homeostatic control of water content in the urine.

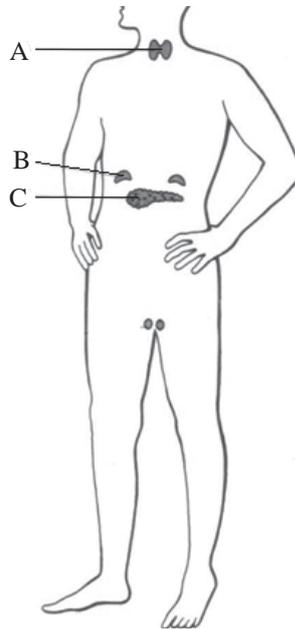
Hormone _____ [1]

Organ _____ [1]

Examiner Only	
Marks	Remark

(iii) The diagram below shows other glands found in the endocrine system.

Complete the table by identifying glands A, B and C and writing down the name of one hormone released by each.



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Gland	Name	Hormone released
A		
B		
C		

[6]

(iv) Explain two ways the endocrine and nervous systems differ.

1. _____

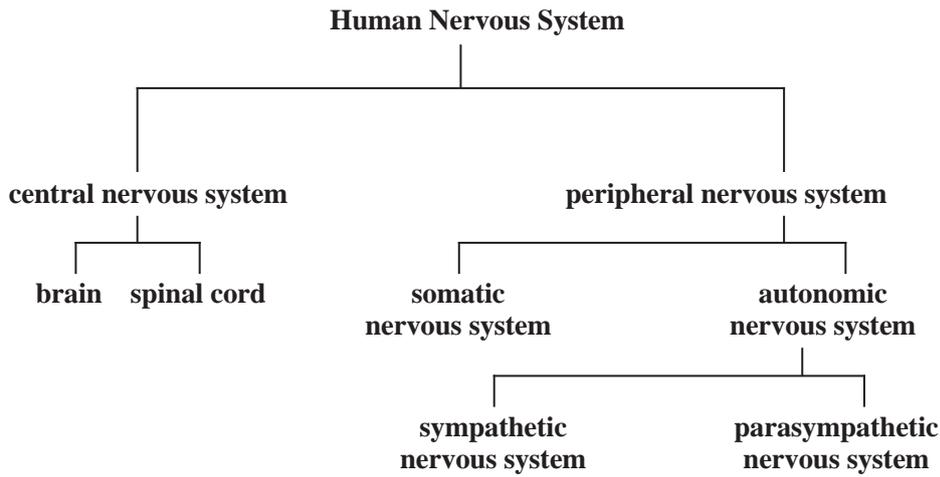
 _____ [2]

2. _____

 _____ [2]

Examiner Only	
Marks	Remark

(b) The diagram shows the organisation of the human nervous system.



(i) Discuss the role of the following parts of the nervous system.

The sympathetic nervous system

[3]

The parasympathetic nervous system

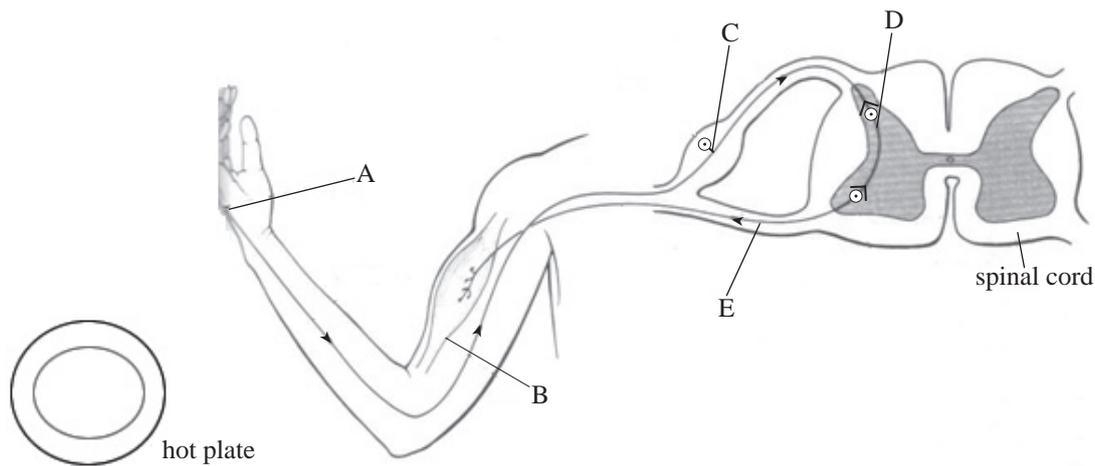
[3]

(ii) From the diagram above identify the part of the nervous system where reflex reactions occur.

[1]

Examiner Only	
Marks	Remark

The diagram below shows a reflex arc.



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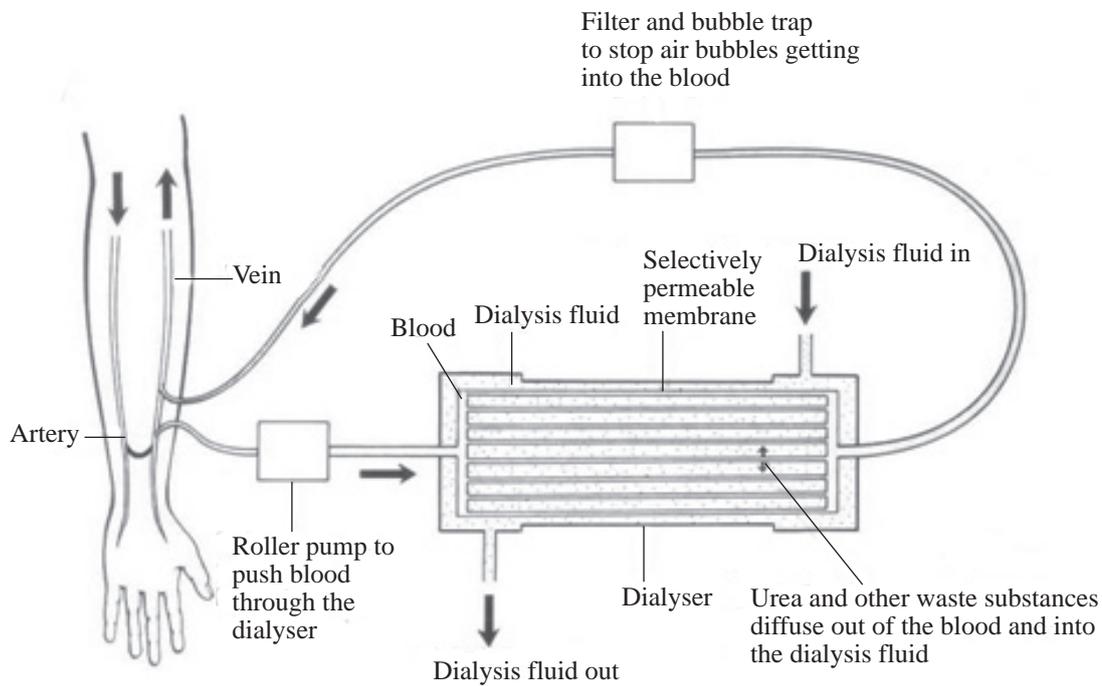
(c) Use the letters in the diagram above to identify the following structures.

1. This neurone is found only in the central nervous system _____ [1]
2. This detects the stimulus of the hot plate _____ [1]
3. This neurone carries information to the central nervous system _____ [1]
4. This is called the effector _____ [1]
5. This is the motor neurone _____ [1]

Examiner Only	
Marks	Remark

- (c) As a result of renal failure, Anya has dialysis three times a week and each session lasts several hours.

The diagram below shows a dialysis machine which carries out the function of the kidney for Anya.



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- (i) Explain why there is a selectively permeable membrane in the dialysis machine.

[2]

- (ii) Protein in the blood is not filtered out during dialysis. Write down why protein remains in the blood.

[1]

Examiner Only	
Marks	Remark

THIS IS THE END OF THE QUESTION PAPER

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