

Tuesday 15 January 2019 – Afternoon

LEVEL 3 CAMBRIDGE TECHNICAL IN HEALTH AND SOCIAL CARE

05831/05832/05833/05871 Unit 4: Anatomy and physiology for health and social care

Duration:	2	hours
C442/1901	ı	

· no materials required

First Name						ast Nar	ne			
Centre Number						Cano Num	lidate ber			
Date of Birth	D	D	M	M	Υ	Υ	Υ	Y		

INSTRUCTIONS

- · Use black ink.
- Complete the boxes above with your name, centre number, candidate number and date of birth.
- · Answer all the questions.
- · Write your answer to each question in the space provided.
- If additional answer space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.

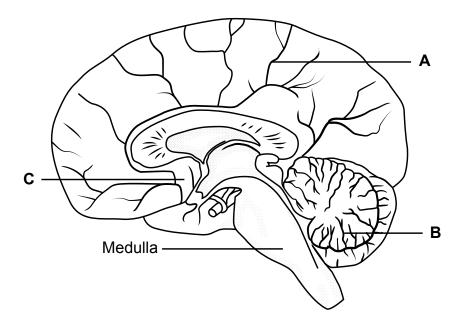
INFORMATION

- The total mark for this paper is **100**.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- · This document consists of 20 pages.

FOR EXAMINER USE ONLY				
Question No	Mark			
1	/17			
2	/25			
3	/12			
4	/29			
5	/17			
Total	/100			

Answer all the questions.

1 A diagram of the brain is shown below.



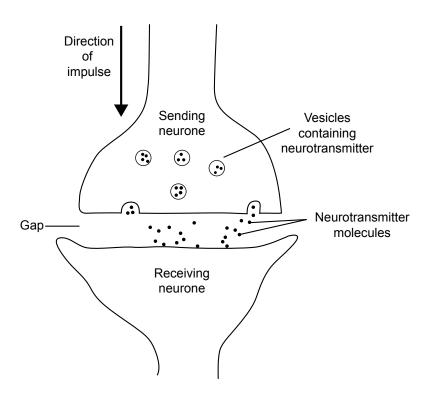
(a) (i) Identify the parts of the brain labelled A, B and C in the diagram.

Choose from the following:

	Cerebellum Cerebral co	rtex Corpus callosu	m Hypothalamus	
	A			
	В			
	c			
				[3]
(ii)	Which of the following stateme Tick (\checkmark) one box.	nts about the function of	the medulla is correct?	•
	It controls autonomic functions	such as heart rate.		
	It controls balance and posture			
	It coordinates movement of mu	iscles.		
	It coordinates speech and lang	uage.		

(b)	(b) Simone, aged 45, has been diagnosed with multiple sclerosis (MS). MS is auto-immune disease which damages neurones in the Central Nervous S						
	(i)	Which part of the neurone is affected by MS?					
		[1]					
	(ii)*	Identify possible treatments Simone could receive from health care professionals and explain how they help to manage the symptoms of MS.					
		101					

(c) The diagram below shows the gap between two neurones.



Describe **four** stages of how a nerve impulse is transmitted across the gap between two neurones.

Use the information in the diagram in your answer.

 	 	 [4]

erythrocytes

fragments

extensions

2 (a) Complete this description about the composition and functions of blood. Use words from the list below:

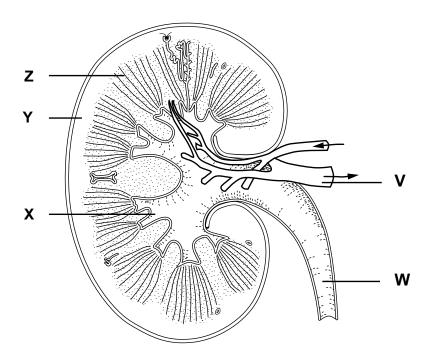
cytoplasm

blood clotting

	lymphocytes	neutrophils	plasma	temperature regulation	
	The main component of	blood is called _		It consists mostly	/
				of the body. Red blood cells a	
				responsible for transporting oxyge	
	and carbon dioxide.				
	White blood cells help to	prevent infection	n, for example	e,	
	which engulf microorgar	nisms.			
	Platelets can be describ	ed as cell		and are responsible for	r
		·		ı	[6]
				•	
(b)	Kevin has been suffering	g from hypertensi	on.		
	(i) What does the term	ı 'hypertension' m	nean?		
				[1]
	(ii)* Evaluate the possib	ole lifestyle chang	es Kevin cou	ıld make to treat his hypertension.	
	(.,			••	[6]
					•••
					•••

(c)	Hypertension can lead to malfunctioning of the kidneys by damaging nephrons.
	Name one process that occurs in a kidney nephron and the part of the nephron involved in this process.
	Process
	Part of nephron involved
	[2]

(d) The diagram shows a kidney.



Select the correct letter to identify the labelled parts shown on the diagram. The third one has been done for you.

Structure within the kidney	Letter
Cortex	
Medulla	
Renal vein	V
Ureter	

[3]

(e)	The	e liver produces urea which must then be removed by the kidneys.		
	(i)	Which one of the following processes in the liver produces urea? Tick (\checkmark) one box.		
		Assimilation		
		Deamination		
		Detoxification		
		Respiration		
				[1]
	(ii)*	Candice has just found out that she has cirrhosis of the liver. Discuss the possible causes for cirrhosis and the effects cirrhosis will have liver function.	ave on he	·r
		iivei fulletion.		[6]

Turn over for the next question

^	/_\	TI I.	:-			- C -		: - : 1
· K	121	INDE	ndd ic	วท	avamnia	വാ	evinovijai	ınını
J	la,	IIICN	110013	an	CVALLINIC	u a	synovial	IUII IL.

(i) Complete the table by matching the components of a synovial joint to their function. Choose from the list of components below:

Cartilage Ligament Tendon Synovial fluid Synovial membrane

Function	Component
Attaches bone to bone	
Lubricates and nourishes the joint	
Reduces friction during movement	

(ii)	Explain how the action of muscles around synovial joints result in movement.

[3]

(b)*	After years of playing rugby, Harry has developed severe arthritis in his knees.					
	Explain the treatment options that are available to Harry for his arthritis.					
	P ()					

4	The	dige	stive system con	sists of specialised or	gans that work	together to break do	wn food.
	(a)	Des	cribe what happe	ns to food in the bucc	cal cavity up to	the time it enters the	stomach.
	(b)			of organs below to an		•	
		You	can use an orgai	n once, more than on	ce or not at all		
			Gall bladder	Large intestine	Liver	Small intestine	
				Pancreas	Stomach		
		(i)	Name one organ	n that secretes hydrod	chloric acid.		
							[1]
		(ii)	Name two orgar	ns that produce enzyr	nes.		
							[2]
		(iii)	Name one organ	n that stores bile.			
							[1]
		(iv)	Name one organ	n where the products	of digestion er	ter the blood.	
							[1]

(c)*		m has Coeliac disease. Explain why he has been advised not to eat foods containing en as part of his dietary support plan.
		[6]
(d)		rt from its role in digestion, the pancreas also functions as an endocrine organ and luces hormones.
	(i)	Explain what is meant by the term 'hormone'.

(ii) The table below has statements about the pancreas and its role as an endocrine organ.

Complete the table by deciding whether each statement is **True** or **False**.

Statement	True or False
Diabetes is caused when the pancreas produces too much insulin.	
The hormone glucagon is produced by the pancreas.	
The pancreas produces the hormone insulin.	
Type II diabetes is caused when cells in the pancreas are destroyed during childhood.	

	4	4
ı	ı	ͺ

		destroyed during childhood.	[4]
(e)*		controlled diabetes can damage organs in the body, such as the eye, leading to a lfunction.	•
	(i)	Identify a malfunction of the eye or ear.	
			[1]
	(ii)	Explain how the malfunction in 4(e)(i) may impact on an individual's lifestyle.	

5 Aerobic and anaerobic respiration are types of cellular respiration that take place inside cells to provide energy.

This is the reaction that takes place during **aerobic** respiration.

	ATP	
glucose + oxygen _		carbon dioxide + water

	glucose + oxygen	. carbon dioxide +	water
(a)	Compare this reaction with the one that takes	place during anaerd	obic respiration.
			[3]
(b)	Write the name of one respiratory malfunction table.	being described by	each statement in the
	Choose from: Asthma Cystic	fibrosis	Emphysema
	You can use each malfunction once, more than	n once or not at all.	
	Can be triggered by cigarette smoke or dust		
	Caused by chemicals in cigarette smoke		
	Caused by a defective gene		
	Mucus is produced thicker than normal		

[4]

(c)* Micky is a 13 year old boy with cystic fibrosis.	
Analyse the treatment and care Micky needs to support him in managing his condition	n.
	[C

(d) Complete the description about the structure of the middle ear.

Choose from the following:

air	cochlea	ear d	rum	Eustachian tube	
	fluid	incus	round wi	ndow	
The middle ear is a chamber filled with between the					
	and the	e inner ear.	. The		
connects the middle ear to the throat and ensures that the pressure of the middle ear is					
equal to the pressure outside the ear. The is one of the				is one of three	
small bones that	t transmit vibrations a	cross the n	niddle ear t	o the oval window.	
				[4]	

END OF QUESTION PAPER

ADDITIONAL ANSWER SPACE

If additional answer space is required, you should use the following lined page(s). The question number(s) must be clearly shown – for example 1(a) (i) or 4(a).



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