

Monday 18 January 2021 - Morning

Level 3 Cambridge Technical in Health and Social Care

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

Time allowed: 2 hours

C442/2101

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4	No extra materials are needed.
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Please write clea	arly in black ink.
Centre number	Candidate number
First name(s)	
Last name	
Date of birth	D D M M Y Y Y

INSTRUCTIONS

- Use black ink.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- · Answer all the questions.

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 has 20 pages.

ADVICE

· Read each question carefully before you start your answer.

	AMINER ONLY
Question No	Mark
1	/27
2	/20
3	/21
4	/15
5	/17
Total	/100

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Answer **all** the questions.

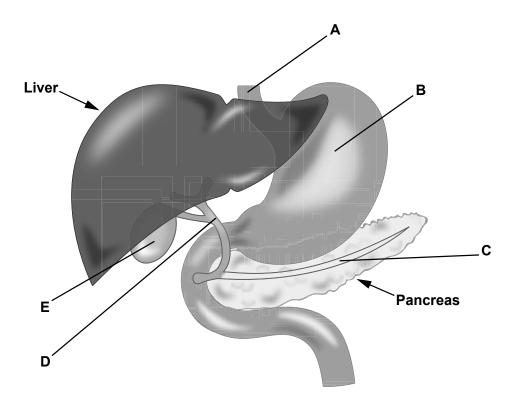
1		riporients of the endocrine system have a fole in control and communication in the body.				
	(a)	Answer the following questions about the endocrine system.				l.
		glu	cagon	insulin	adrenal	thyroid
		pitu	iitary	adrenalin	ovaries	testes
		Use	words from the	list.		
		You	can use each w	ord once, more tha	n once, or not at all.	
		(i)	Which gland is	located just above	the kidney?	
						[1]
		(ii)			ntration of glucose ir	
						[1]
		(iii)	Which gland ha	s a role in regulatir	ng other endocrine g	lands?
						[1]
		(iv)	Which gland is	located at the base	of the brain?	
						[1]
	(b)	The	pancreas has a	function within both	n the endocrine and	digestive systems of the body.
		(i)	Identify two end	ocrine functions of	the pancreas.	
			1			
			2			

[2]

(ii)	Identify	two did	restive	functions	of the	pancreas.
	IGCITUIT	LVV GIV	40001170	IUIIOUOIIO	01 1110	Daniologo

1		
2		
	[2	<u>'</u>]

(c) The diagram shows part of the digestive system including the pancreas and the liver.



Complete the table using letters from the diagram.

Structure	Letter
Pancreatic duct	
Stomach	
Bile duct	
Gall bladder	
Oesophagus	

[5]

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(d) Complete the sentences about digestion in the stomach.

Use words from the list.

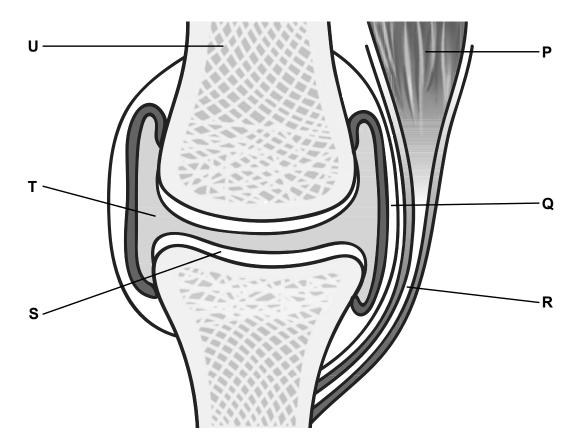
You can use each word once, more than once, or not at all.

hormone	churn	digest	acid	alkali				
cell	enzyme	protein	mechanical	chemical				
When food enters	When food enters the stomach, it is mixed with digestive juices. The muscular walls of							
the stomach		the foo	d with the juices, which	n is called				
	digo	estion.						
The stomach pro	duces		which helps to destro	oy bacteria.				
It also produces t	the		that breaks down					
large		molecules into	smaller ones.					
This is called		digest	ion.	[6]				

(e)*	Nina is 45 years old and has developed cirrhosis of her liver, caused by a build-up of fat in her liver cells.
	Discuss the possible impacts of cirrhosis on Nina's lifestyle.
	You should include at least two different types of impact in your answer.
	[8]

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2 The diagram shows a synovial joint.



(a) Complete the table using letters from the diagram.

The last one has been done for you.

Structure	Letter
Synovial capsule	
Cartilage	
Synovial fluid	
Tendon	
Bone	U

(b) The joint in the diagram above is a hinge joint.

Name two other types of joint.

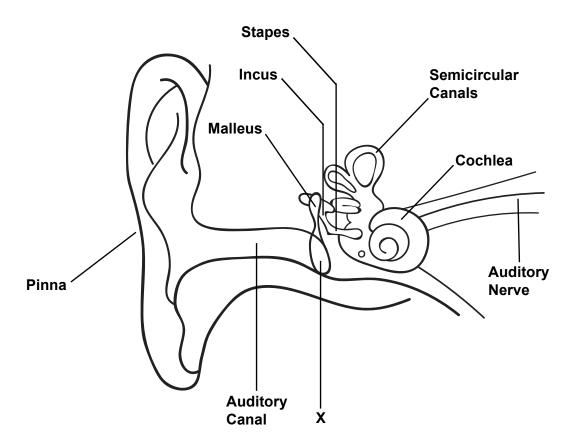
1	
2)

[2]

(c)	(i)	Identify one malfunction of the musculoskeletal system and one symptom associated with the malfunction you have identified.
		Malfunction: [1]
		Symptom:[1]
	(ii)*	Explain the impact of the malfunction identified in (c)(i) on the daily life of an individual with this condition.

(d)*	Bone marrow helps to produce cells, such as erythrocytes. Erythrocytes are components of blood.
	Describe, in detail, the functions of at least two other components of blood.
	[3]

3 (a) The diagram shows the structure of the ear.



Use the diagram to answer the following questions.

(i)	Identify two structures that are found in the inner ear.	
	1	
	2r	2]
(ii)	Which structure contains ampullae?	~ J
]	1]
(iii)	Which structure is lined with tiny hairs and helps us to maintain balance?	
		1]
(iv)	Name the structure labelled X .	
	[1]

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(b) The Eustachian tube is also found in the ear.

Which statement about the Eustachian tube is correct?

Tick (✓) one box.

Statements	Tick (✓) one only
It converts sound waves into nerve impulses.	
It amplifies sound waves.	
It enables vibrations to be passed through the inner ear.	
It ensures equal pressure between the outside of the ear and the middle ear.	

[1]

(c)* Deafness is a malfunction of the ear.

The possible causes for deafness include:

- ageing
- blockages in the auditory canal
- damage caused by loud noises or infections.

them.

.....[6]

(d) Nerve impulses from the ear pass into the brain to be processed into sound.

Which part of the brain processes sensory information from the ear?

Tick (✓) one box.

Parts of the brain	Tick (✓) one only
Hypothalamus	
Cerebral cortex	
Medulla (oblongata)	
Corpus callosum	

[1]

	ι.
(e)*	Kai has had a stroke which has damaged part of his brain.
	Explain the possible biological causes and lifestyle factors that could have resulted in Kai suffering a stroke.

4	Adenosine tri	phosphate	(ATP) i	s produced b	y cellular res	piration.
---	---------------	-----------	---------	--------------	----------------	-----------

(a)	Complete the table below by deciding whether each statement about cellular respiration
	is True (T) or False (F).

Statements	True (T) or False (F)
Aerobic respiration produces more ATP than anaerobic respiration.	
Aerobic respiration takes place in mitochondria.	
Anaerobic respiration needs glucose and oxygen.	
Lactic acid is produced during aerobic respiration.	

[4]

(b) Oxygen must pass through the alveoli walls to get into the blood.

Which process allows oxygen to pass through the alveoli walls?

Tick (✓) one box.

Processes	Tick (✓) one only
Assimilation	
Absorption	
Diffusion	
Inspiration	

Г	4	1
ı	•	1

(c)	Asthma	and	emphysema	are both	respiratory	malfunctions
-----	--------	-----	-----------	----------	-------------	--------------

/i\	Identify one	nossible c	ause for	each of these	e malfunctions
(I)	Tuerilly one	DOSSIDIE C	ause ioi	each of these	= 111411111111111115

Asthma:	
Emphysema:	

[2]

(ii)*	Evaluate the lifestyle changes and care needed to help an individual manage emphysema.
	ro

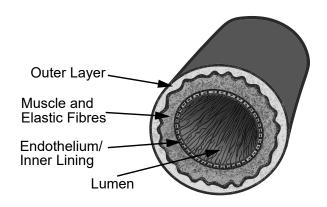
5	The kidney	is a i	comi	oonent	of the	regulatory	/ SI	/stem
J	THE KIGHE	/ 15 a t	إنتناك	JOHEHR	OI IIIC	regulatory	/ D	yolciii.

1	(a)	Com	nlete t	the	table	usina	structures	from	the	list
۱	a		picic i	uic	labic	using	Siluciules	110111	uic	IISt.

calyx	ureter	cortex	medulla	urethra
Statement	ts		Structure	
The outer	layer of the kidney			
A tube that	t carries urine from r.	the kidney to		
A chamber	that collects urine).		
A tube that	t passes urine out	of the body.		
A tube that	t passes urine out	of the body.		

		[4]
(b)	The kidney contains thousands of nephrons.	
	Identify and describe two functions of these nephrons.	
	1	
	2	
		 [4]
		ניין
(c)	Name the blood vessel that carries blood from the body into the kidneys.	

(d) The diagram shows the structure of an artery.



i)*	Compare the structure of the artery with the structure of a vein and a capillary, considering their functions in your answer.
	[6]
(ii)	The build-up of fatty deposits in the walls of arteries can lead to coronary heart
,	disease (CHD).
	Identify two symptoms of CHD.
	1
	2 [2]

ADDITIONAL ANSWER SPACE

If additional answer space is required, you should use the following lined pages. The question numbers must be clearly shown – for example, $1(e)^*$ or $2(c)(ii)^*$.



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