

Wednesday 22 May 2019 - 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 C442/1906

· no materials required

You may use:

Please write clearly	in black	ink.								
Centre number							Can	ndidate number		
First name(s)										
Last name										
Date of Birth	D	M	M	Υ	Υ	Υ	Υ			

INSTRUCTIONS

- Use black ink.
- 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	/24		
2	/16		
3	/24		
4	/13		
5	/23		
Total	/100		

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Answer all the questions.

1 Fig. 1.1 shows part of the digestive system.

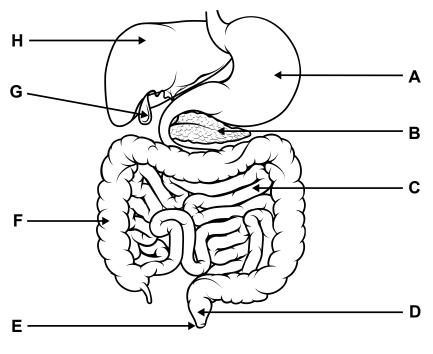


Fig. 1.1

(a) Complete the table by matching the correct letter to each structure.

Use **Fig. 1.1** to help you answer the question.

Structure	Letter
anus	
pancreas	
stomach	
large intestine	
gall bladder	G

[4]

(b)	The	gall bladder has a duct that releases fluid into the small intestine.					
	(i)	Name this duct. [1]					
	(ii)	What is the role of the fluid that is released from the gall bladder?					
(c)	Nad	lia has been suffering from abdominal pain.					
(-)		can has shown that she has developed gallstones in her gall bladder.					
	(i)	State one other symptom of gallstones.					
		[1]					
	(ii)*	Describe the possible causes of gallstones, and how they can lead to abdominal pain.					
		Your answer should include physiological causes and risk factors.					
		[6]					

(d) The liver is also part of the digestive system.

Complete the sentences about the functions of the liver.

Use words from the list.

Each word can be used once, more than once, or not at all.

assimilation	platelets	detoxification	absorption	deamination
erythrocytes	glycogen	starch	protein	
After food has be	en digested, the	liver plays an impo	rtant role in remo	oving glucose
from the blood, ar	nd converting it	into	,	which can be stored
inside cells. This i	is an example o	f		
The liver has many other functions, including the breakdown and recycling of worn out, and the removal of the amino group from amino acids,				
which is known as	s			
		lcohol are also brok	en down in the li	ver by the
process of				[5]

(e)* Type 2 diabetes may occur when liver cells no longer respond to insulin, and stop removing glucose from the blood.

Explain the advised treatments and lifestyle changes for people diagnosed with Type 2 diabetes.

- **2** Structures within the respiratory system allow the body to take oxygen in, and remove carbon dioxide.
 - (a) Complete the table by matching the correct structure to each description.

bronchus intercostal diaphragm pleural trachea bronchiole

Description	Structure
The airway that extends from the mouth to the lungs, also known as the windpipe.	
A membrane that covers each lung and provides a lining for the rib cage.	
A muscle that separates the chest cavity (thorax) from the digestive system.	

(b) Fig. 2.1 shows an alveolus and a capillary.

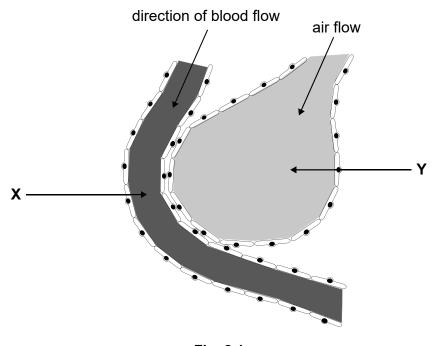


Fig. 2.1

(i)	State one way in which the structure of the alveolus is adapted for its role in gaseous exchange.
(ii)	Describe how gases are exchanged between X and Y , as blood flows in the capillary
	Use Fig. 2.1 to help you answer the question.
	[3]

(c) Ben has emphysema.

(i)	Which statement about emphysema is correct? Tick (✓) one box.	
	High blood pressure is a risk factor for emphysema.	
	Animal fur can trigger emphysema.	
	Emphysema damages alveoli.	
	Smoking cigarettes is not linked to emphysema.	
		[1]

- (ii)* Ben has been advised of possible treatments to help manage the symptoms of emphysema, including:
 - using an inhaler
 - going to a rehabilitation programme
 - having surgery

Evaluate two possible treatments for emphysema.			
You may choose from the treatments listed above or any other treatments studied.			
[8]			

3 T	he tahle hel	low has statem	ents about the	structure and	function of the brain

(a) Complete the table by writing next to each statement, **True** or **False**.

Statement	True or False
The brain is protected by tough membranes called the meninges.	
The cerebellum is divided into two halves called the cerebral hemispheres.	
The function of the hypothalamus is to control vital processes such as breathing.	
One of the functions of the frontal lobes is coordinating speech and language.	
The corpus callosum connects the two sides of the brain.	

[5]

(b)	Stefan has had a stroke . After several weeks of rehabilitation in hospital, he is ready to
	return home.

Health care professionals provide Stefan and his family with information about the impact of having a stroke on his care needs and his lifestyle.

(i)*	Discuss possible impacts of the stroke on Stefan's likely care needs and his lifestyle.
	[8]

(c)	Stef	an is told that a likely risk factor for his stroke was his high blood pressure.	
	Nan	ne one other risk factor for strokes.	
		[1]
(d)	Stef	an's mother, Stella, has developed cataracts .	
	(i)	Name the part of the eye affected by cataracts.	
		[1]
	(ii)	Describe the physiological cause of cataracts.	
		r ^a	าา

(e)	The	pituitary is an endocrine	gland.
	(i)	What is the correct local	tion of the pituitary?
		Tick (✓) one box.	
		In the brain	
		In the kidneys	
		In the neck	
		In the pancreas	[1
	(ii)*	Describe the function of	the thyroid gland or the adrenal glands.
			[6

The	The heart is part of the cardiovascular system.				
(a)	(a) Answer the following questions about the heart.				
	Use	terms from the li	ist.		
	Eac	h term can be us	ed once, more than	once, or not at all.	
	tric	uspid	aorta	vena cava	bicuspid
	cor	onary	pulmonary	semi-lunar	
	(i)	Name the valve ventricles.	that prevents blood	I from leaving the hear	and flowing back into the
					[1]
	(ii)	Name the artery	y that supplies the h	eart muscle with nutrie	nts.
					[1]
	(iii)		_	lood back into the right	
	(iv)	Name the artery	y that carries deoxy	genated blood.	[1]
(b)*	Des	cribe the sequen	ce of events that tal	ke place in the heart du	uring the cardiac cycle .

(c) Trevor has coronary heart disease (CHD) and is recovering from a heart attack.

(i)	Identify two possible causes of CHD.	
	1	
	2	
		[2]
(ii)	Identify one method for monitoring Trevor's heart, following his heart attack.	
	Explain your answer.	
	Method	
	Explanation	
		[2]

5 Fig. 5.1 shows the elbow joint.

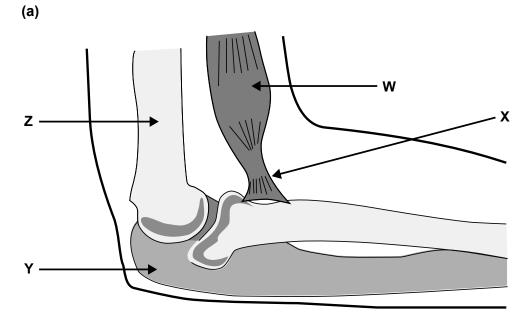


Fig. 5.1

(i) Which term correctly describes the joint shown in Fig. 5.1?
 Tick (✓) one box.
 Ball and socket
 Pivot
 Hinge
 Sliding

[1]

(ii) Identify the parts labelled W, X, Y and Z in Fig. 5.1.

Use words from the list.

Each word can be used once, more than once, or not at all.

ligament	bone	cartilage	tendon	muscle
W =				
X =				
Y =				
Z =				
				[4]

Complete the sentences about neurones.

(b) Dorothy is 84 years old and has been taken to hospital after fracturing her elbow during a fall. She senses pain in her fractured elbow due to the action of **neurones**.

	Use terms from the list.				
	Each term can be used once, more than once, or not at all.				
	dendron	dendrite	motor	sensory	synapse
	neurotransmitter	hormone	nucleus	Schwann cell	axon
	When pain is detected	by receptors, a ne	rve impulse is trigç	gered in a	
	neurone and transmitte	ed towards the cen	tral nervous syster	m.	
	Neurones have a long.		, which is usually	surrounded by a	myelin
	sheath, and a cell body	y which contains th	e	of the neu	rone.
	The gap between neur	ones is called a		, and imp	ulses can
	only move across the g	gap using a chemic	cal known as a		
					[5]
(c)*	A test finds that Doroth	ny has osteoporosis	S.		
	Describe the possible of musculoskeletal system	-	's osteoporosis, ar	nd its effects on he	er
					[6]

(d)	Dorothy also suffers from hearing loss.
	Suggest two reasons why osteoporosis may also cause hearing loss.
	1
	2
	[2]
(e)	Identify two possible treatments for hearing loss.
	1
	2
	[2]
(f)	The semi-circular canals in the ear are not involved in hearing.
	State the function of the semi-circular canals and explain how they carry out this function.
	Function:
	Explanation:
	[3]

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) or 2(a).



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