

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

HEALTH AND SOCIAL CARE



05830–05833, 05871



Unit 4 Summer 2019 series

Version 1

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Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates. The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report. A full copy of the question paper can be downloaded from OCR.

Note to Centres

There were a number of centres who had selected an invalid combination of units or had claimed the wrong units for a candidate that prevented overall qualifications results being issued. Please note that it is the responsibility of the centre to check that correct units have been entered for certification claims. OCR cannot guarantee that the issuing of results in these circumstances will meet deadlines for UCAS confirmation.

Sector Update

Two key changes have occurred in relation to the Level 3 Technicals qualifications, both in relation to the examined units; firstly, an additional re-sit has been allowed, so candidates can have two further attempts at an examined unit if they wish to improve their result from the first attempt made. And secondly, a 'near pass' R grade has been introduced, which enables candidates who do not pass but achieve sufficient marks to gain some points for their examined unit outcome, which may mean that it is not necessary to re-sit the exam.

Paper Unit 4 series overview

The overall performance of candidates was good. The majority of candidates are able to access all of the paper and completed it within the allocated time. Some candidates used the additional page to good effect and made clear links to this page within the body of the examination. However not all candidates did make clear links they had continued their response on extra paper, which ideally they should.

Some candidates did not have secure knowledge on all aspects of the unit, and either left questions or provided responses that did not credit any marks.

Some candidates demonstrated advanced knowledge and understanding throughout the entire paper. However, a number of candidates are challenged by the levelled response questions, and were frequently limited to Level 1 responses. Candidates should take care to address both parts to certain questions. For example, causes and treatments.

Candidates showed some improvement on previous exam series with evaluate questions. More candidates are considering advantages and disadvantages, however the majority are often doing this inaccurately.

Question 1 (a)

1 Fig. 1.1 shows part of the digestive system.

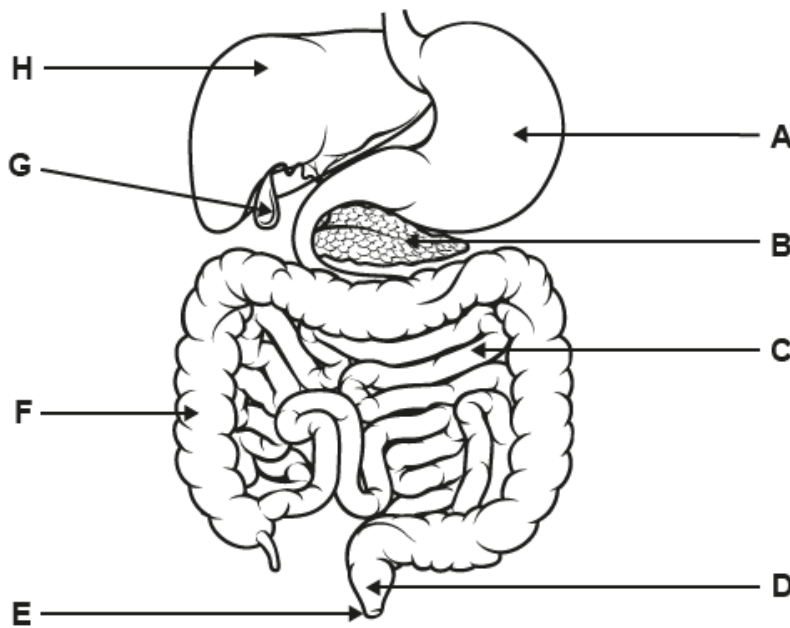


Fig. 1.1

(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]

Most students were able to identify all parts of the digestive system correctly. Some students did confuse the large intestine with the small intestine or the rectum with the anus.

Question 1 (b) (i)

(b) The gall bladder has a duct that releases fluid into the small intestine.

(i) Name this duct.

.....[1]

The majority of candidates correctly answered this question. However a minority were unable to correctly answer this question, either leaving blank or giving pancreatic/gall bladder duct as an answer.

Question 1 (b) (i)

(ii) What is the role of the **fluid** that is released from the gall bladder?

.....
.....[1]

Less candidates were able to explain the role of bile. Many gave vague answers such as “breaks/digests food”, however an acceptable will be ‘helps to digest fat’ and not food. They needed to be more specific about bile helping to break down fats by emulsifying it.

Question 1 (c) (i)

(c) Nadia has been suffering from abdominal pain.

A scan has shown that she has developed gallstones in her gall bladder.

(i) State one **other** symptom of gallstones.

.....
.....[1]

This was generally a well answered question. Although some students did repeat ‘pain’ or use a synonym like cramps.

Question 1 (c) (ii)

(ii)* Describe the possible causes of gallstones, and how they can lead to abdominal pain.

Your answer should include physiological causes and risk factors.

.....

.....

.....

.....

.....

.....

.....

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.....

.....

[6]

<p>This question was not answered well by the majority of candidates. A common issue was confusing kidney stones for gall stones. For those who did relate their response to gall stones many did not achieve a higher mark because they didn't address all aspect of the question (physiological causes, risks factors and how it can lead to pain). Very few candidates achieved a Level 3 response.</p>
--

Question 1 (d)

(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 been digested, the liver plays an important role in removing glucose from the blood, and converting it into, which can be stored inside cells. This is an example of

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.....

Poisonous substances such as alcohol are also broken down in the liver by the process of

[5]

The majority of candidates provided the correct responses, with 4 or 5 being by far the most common marks given.

Question 1 (e)

(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.

.....

.....

.....

.....


.....

.....

.....

[6]

Candidates struggled with this question. Many candidates mistook type 1 diabetes for type 2 when discussing the treatment and explained about insulin injections. Candidates who mentioned the insulin injections had misunderstood the stem of the question, as the question says *may* ... no longer respond to insulin. Insulin injections in this case would likely not be the advised treatment. The candidates were more successful when explaining lifestyle changes, but only a minority were able to say why the changes helped. This combined with not addressing the treatment resulted in a high frequency of Level 1 responses.

	<p>Misconception</p>	<p>Candidates need to be able to differentiate between type 1 diabetes and type 2 diabetes. Type 1 is an autoimmune disease where the body's own immune system destroys insulin producing cells in the pancreas. Type 2 is either where insulin is still produced but cells within the body don't respond properly to it or the body cells respond properly to insulin. Teachers should address the different types.</p>
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Question 2 (a)

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.

[3]

Trachea was correctly identified by the majority of candidates, the pleural membrane and the diaphragm were often incorrectly identified. Intercostal was a common incorrect response for diaphragm.

Question 2 (b) (i)

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

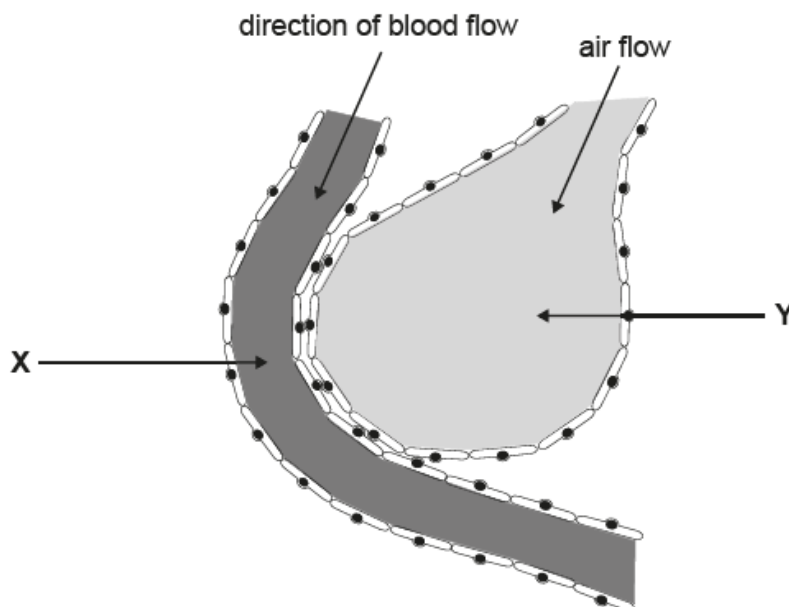


Fig. 2.1

(i) State **one** way in which the structure of the alveolus is adapted for its role in gaseous exchange.

.....
..... [1]

Nearly all candidates provided a correct response, with 'large surface area' or 'thin walls' as the most common answers.

Question 2 (b) (ii)

(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]

The majority of candidates achieved at least one mark for this question, often for using the term 'diffusion'. However very few went on to discuss concentration differences or diffusions gradients.

Question 2 (c) (i)

(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]

This question was answered well

Question 2 (c) (ii)

(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]

Some candidates were successful in providing an evaluative response. However, many candidates continue to provide one sided response, focussing on the advantages or benefits. In addition many candidates explained treatments without saying how they help the condition. Both these factors combined to limit the number of high scoring responses.

Question 3 (a)

3 The table below has statements 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]

Very few candidates achieved 4 or 5 marks for this question, 2 or 3 marks was the most common mark achieved.

Question 3 (b) (i)

(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]

The majority of candidates provided good responses to this question achieving Level 2 or 3 responses. Some students did misunderstand the question and responded by discussing the physiology of a stroke and the lifestyle changes that are needed e.g. discussing a suitable diet to avoid stroke which wasn't required. When discussing care needs many focused on family members and would have benefitted from giving specific examples of what needs Stefan could have e.g. advice on preventing further strokes or speech therapy.

Question 3 (c)

(c) Stefan is told that a likely risk factor for his stroke was his high blood pressure.

Name **one** other risk factor for strokes.

.....
..... [1]

The vast majority of candidates answered this question correctly

Question 3 (d) (i)

(d) Stefan's mother, Stella, has developed **cataracts**.

(i) Name the part of the eye affected by cataracts.

..... [1]

This question was not answered well, with responses like pupil, retina and iris common incorrect answers. Of the candidates who did provide a correct response many misspelt lens as lense.

Question 3 (d) (ii)

(ii) Describe the physiological cause of cataracts.

.....
.....
.....
..... [2]

Only a minority of candidates managed to achieve 2 marks for this question. There was a lack of understanding as to the physiological cause. Many candidates discussed risk factors, which is different from physiological causes. Of the individuals who gained 1 mark for this question it was for mentioning the term 'cloudy'.

Question 3 (e) (i)

(e) The pituitary is an endocrine gland.

(i) What is the correct location of the pituitary?

Tick (✓) **one** box.

In the brain

In the kidneys

In the neck

In the pancreas

[1]

A wide variety of responses to this question, suggesting many candidates did not have a full understanding of the endocrine system.

Question 3 (e) (ii)

(ii)* Describe the function of the thyroid gland **or** the adrenal glands.

.....
.....
.....
.....
.....
.....
.....
.....

[6]

Very few candidates achieved a high mark for this question. Of those who did their answer centred on the adrenal gland instead of the thyroid. The majority candidates achieved 2 marks for mentioning hormones and naming one. When discussing the 'fight or flight' response many responses were vague and did not detail how it affects body.

Question 4 (a) (i)

4 The heart is part of the cardiovascular system.

(a) Answer the following questions about the heart.

Use terms from the list.

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

tricuspid	aorta	vena cava	bicuspid
coronary	pulmonary	semi-lunar	

(i) Name the **valve** that prevents blood from leaving the heart and flowing back into the ventricles.

.....[1]

Very few candidates correctly identified all four structures. Most candidates scored 2 or less for this response. Some candidates put the same response for all four responses

Question 4 (a) (ii)

(ii) Name the **artery** that supplies the heart muscle with nutrients.

.....[1]

See 4 (ai) comment

Question 4 (a) (iii)

(iii) Name the type of **vein** that brings blood back into the right atrium of the heart.

.....[1]

See 4 (ai) comment

Question 4 (a) (iv)

(iv) Name the **artery** that carries deoxygenated blood.

.....[1]

See 4 (ai) comment

Question 4 (c) (ii)

(ii) Identify **one** method for monitoring Trevor's heart, following his heart attack.

Explain your answer.

Method

.....


Explanation

.....

.....

[2]

The most common method identified was ECG, with some gaining the second mark explanation. However many explanations were very vague and needed greater clarity.

	<p>Misconception</p>	<p>A common misconception was that heart monitors are a monitoring method for heart attacks. Heart rate monitors only measure the number of contractions in a minute, they do not give any indication and whether it is contracting properly.</p>
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Question 5 (a) (i)

5 Fig. 5.1 shows the elbow joint.

(a)

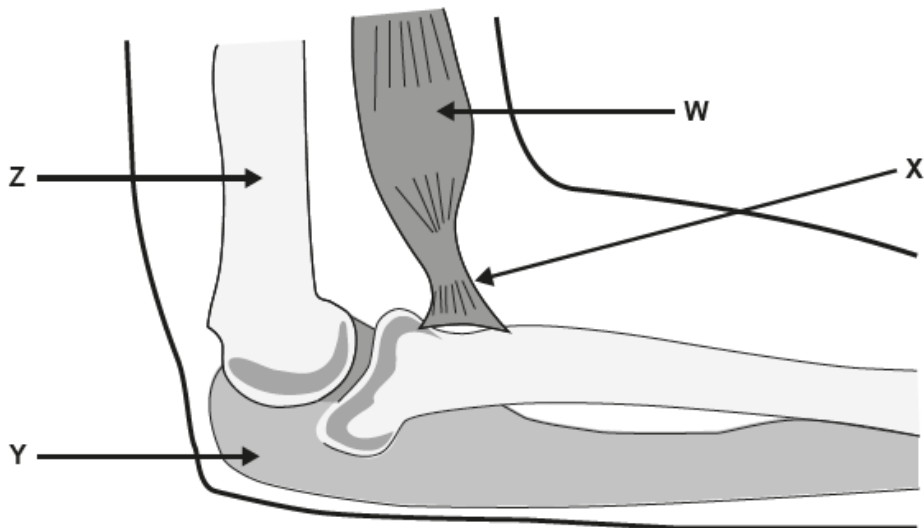


Fig. 5.1

(i) Which term correctly describes the joint shown in Fig. 5.1?

Tick (✓) **one** box.

Ball and socket

Pivot

Hinge

Sliding

[1]

This question was not answered well, with the majority of candidates offering 'Ball and socket' as the answer. The correct response was hinge.

Question 5 (a) (ii)

(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]

The most common mark given was 2, for correctly identifying W (muscle) and Z (bone).

	Misconception	A common misconception related to tendon and ligaments, where many candidates confused these structures.
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Question 5 (b)

(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**.

Complete the sentences about 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 nerve impulse is triggered in a neurone and transmitted towards the central nervous system.

Neurones have a long....., which is usually surrounded by a myelin sheath, and a cell body which contains the of the neurone.

The gap between neurones is called a, and impulses can only move across the gap using a chemical known as a

[5]

Candidates answered this question well, with 4 or 5 the most common marks

Question 5 (e)

(e) Identify **two** possible treatments for hearing loss.

1.....
.....
2.....
.....

[2]

Nearly all candidates achieved a mark for saying 'hearing aid', but very few managed to identify a second treatment. Surgery was a common response, but this gains no credit as the term is too vague. Cochlear implant was an acceptable example of a surgical procedure.

Question 5 (f)

(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]

Only a minority of candidates gained 2 or 3 marks for this question. Some students correctly identified balance, but could offer no clear explanation. Candidates struggled with this question with many getting no marks.

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