

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

HEALTH AND SOCIAL CARE

05830–05833, 05871

Unit 4 January 2024 series

Contents

Introduction3

Unit 4 series overview4

 Question 1 (a).....5

 Question 1 (b)*.....5

 Question 1 (c).....6

 Question 2 (a).....7

 Question 2 (b) (i).....7

 Question 2 (b) (ii)*.....8

 Question 2 (c) (i).....9

 Question 2 (c) (ii)10

 Question 2 (c) (iii).....10

 Question 2 (d).....11

 Question 3 (a) (i).....11

 Question 3 (a) (ii)11

 Question 3 (a) (iii)12

 Question 3 (a) (iv).....12

 Question 3 (b) (i).....12

 Question 3 (b) (ii)*13

 Question 3 (b) (iii)13

 Question 3 (c)14

 Question 3 (d) (i).....15

 Question 3 (d) (ii)*.....16

 Question 3 (e) (i).....16

 Question 3 (e) (ii)17

 Question 3 (e) (iii)17

 Question 4 (a).....18

 Question 4 (b) (i).....19

 Question 4 (b) (ii)20

 Question 4 (c)*20

 Question 5 (a) (i)*21

 Question 5 (a) (ii)21

 Question 5 (b).....22

Copyright.....23

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 and the mark scheme can be downloaded from [Teach Cambridge](#).

Would you prefer a Word version?

Did you know that you can save this PDF as a Word file using Acrobat Professional?

Simply click on **File > Export to** and select **Microsoft Word**

(If you have opened this PDF in your browser you will need to save it first. Simply right click anywhere on the page and select **Save as . . .** to save the PDF. Then open the PDF in Acrobat Professional.)

If you do not have access to Acrobat Professional there are a number of **free** applications available that will also convert PDF to Word (search for PDF to Word converter).

Unit 4 series overview

Performance of candidates on this exam series was similar to recent exam series. Candidates performed well on the point-based questions, with nearly all candidates providing responses to all questions. Most candidates were able to provide a high percentage of correct responses. With regards to the Level of Response (LoR) questions, fewer candidates did not provide responses when compared to previous exam series. Most candidates were able to achieve marks for all LoR questions, but as with previous exam series only a small proportion were able to achieve Level 3. This was particularly the case for Questions 2 (b) (ii) and 3 (d) (ii). Question 2 (b) (ii) was on the impact of multiple sclerosis (MS) on lifestyle. Many responses covered a range of impacts of MS on lifestyle but did not explain why MS resulted in these impacts. In previous exam series questions on the impact on lifestyle/daily life were well answered, so this was a key difference in this exam series. Question 3 (d) (ii) was on the activity within the heart and proved to be a challenging question for most candidates, with only a minority achieving Level 2 or Level 3. The main issue was that candidates struggled to accurately describe diastole and systole in terms of action of the heart pumping.

Many candidates who used additional pages clearly indicated which question their additional responses related to. However, some candidates either didn't indicate this or stated a different question. Some candidates who used computers to produce word processed responses used a small font or left very little space between responses. As responses have to be annotated whilst being assessed sufficient space should be provided to assist this.

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
<ul style="list-style-type: none"> • answered all questions • achieved Level 2+ for all LoR questions • demonstrated an understanding of command verbs in their responses • achieved 70%+ of the marks available on the short response point-based questions. 	<ul style="list-style-type: none"> • misunderstood what was required in their response to some questions • provided Level 1 responses to most of the LoR questions • confused medical conditions, e.g. osteoporosis and osteoarthritis • achieved less than 45% of the marks available for the short response point-based questions.

Question 1 (a)

1 The eye is an organ of the sensory system that detects light.

(a) Choose from the list below to complete the table about the structures of the eye.

- cornea humours iris lens
- macula retina suspensory ligament tear gland

Statement	Structure
A light-sensitive surface covering the back of the eye where rays of light focus.
A small area at the back of the eye that contains a high concentration of photoreceptors.
Can be adjusted by muscles to control the amount of light that enters the eye.
Can change shape to focus light rays entering the eye.
Watery fluids that keep the eye in shape.

[5]

Only a minority of candidates achieved full marks on this question. Retina and macula were the most frequent incorrect responses. Many candidates provided tear gland instead of humours for the last statement.

Question 1 (b)*

(b)* Tom has diabetes which has caused cataracts to develop in both eyes.

Discuss the effects of cataracts and the possible impacts on Tom's lifestyle.

[8]

Most students provided good discussion on the impact of cataracts on Tom's lifestyle. However, the effects of cataracts was less well answered, with cloudy lens and blurry vision the most common responses. Some candidates confused cataracts with other eye disorders.

Misconception



The severity of cataracts was misunderstood by many candidates. Cataracts is a condition that is easy to treat through a lens replacement procedure. Frequently the severity of this condition on lifestyle was overstated by many candidates, for example, needing a full time carer, becoming housebound and depression. This shows a misconception of the disorder and its impacts. While this condition can result in total loss of sight, this is very unlikely to happen within the UK due to the treatment available.

Question 1 (c)

(c) Diabetes is a malfunction of the control and regulatory system.

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

Statement	True (T) or False (F)
Diabetes is diagnosed when tests show high concentrations of glucose in the blood.
Insulin injections can be used to treat diabetes.
Obesity is a risk factor for diabetes.
Type 2 diabetes can be caused by damage to cells in the kidney.

[4]

Candidates answered this question well, with most achieving three or four marks. The first statement was the most frequent incorrect response.

Question 2 (a)

2 The nervous system controls the body by transmitting information to and from the environment.

(a) Complete the passage about the nervous system by choosing the most appropriate word(s) from the list below.

autonomic

central

motor

peripheral

sensory

spinal cord

synapse

The brain is part of the nervous system. It is connected to every area of the body by the which transmits information through a network of nerves. The type of nerve that carries impulses from sense organs to the brain is called a neuron. To travel from one neuron to another within the nervous system the nerve impulses cross a gap known as a

[4]

A very well answered question, with the majority of candidates obtaining four marks.

Question 2 (b) (i)

(b) Charlie is 45 years old and has recently been diagnosed with multiple sclerosis, a malfunction of the control system that affects neurons. The symptoms include numbness and muscle spasms in the legs.

(i) Outline the biological cause of multiple sclerosis.

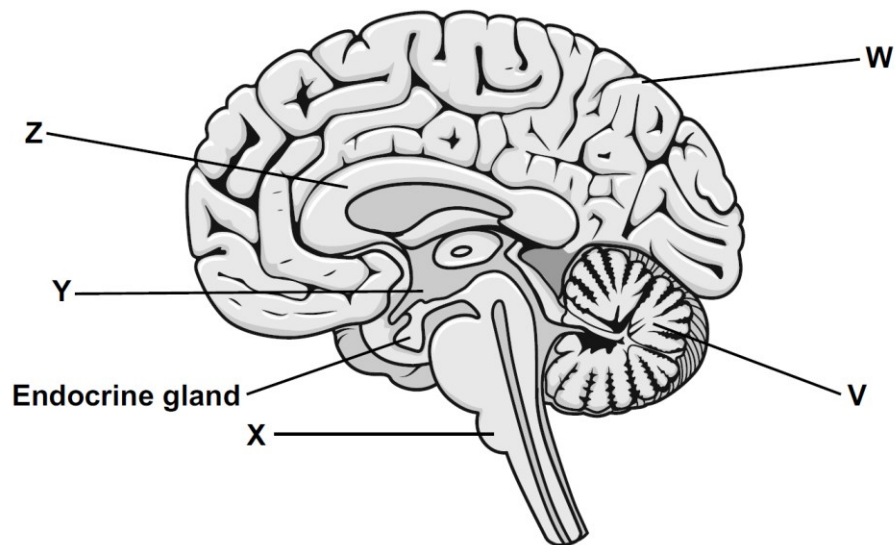
.....
.....
.....
.....
.....
.....

[3]

Generally, a well answered question, with most candidates identifying it is an autoimmune disease where the myelin sheath is attacked and damaged by the immune system.

Question 2 (c) (i)

(c) The diagram shows the internal structure of the brain.



(i) Complete the table below by selecting the correct letter that identifies the structures labelled on the diagram.

One row has been done for you.

Structure	Letter
Cerebellum
Cerebral cortex
Corpus callosum
Hypothalamus	Y
Medulla (oblongata)

[4]

There was mixed performance on this question with no clear common correct or incorrect responses.

Question 2 (c) (ii)

(ii) Which **one** of the following organs is the endocrine gland (labelled on the diagram)?

Put a tick (✓) in the box next to the correct organ.

Organ	Tick (✓) one only
Adrenal	
Pancreas	
Pituitary	
Thyroid	

[1]

A well answered question with most candidates providing the correct response. Pancreas was the most frequent incorrect response.

Question 2 (c) (iii)

(iii)* Describe the role of the following structures in control and coordination of the body:

- cerebellum
- cerebral cortex.

.....

.....

.....

.....

.....

.....

..... [6]

This question was the most common unanswered question in this series. In general, responses were limited, with only a minority of candidates achieving Level 3. Most candidates were limited to just limiting functions of the cerebellum and cerebral cortex.

Question 2 (d)

(d) The brain is protected by the part of the skull called the cranium.

The cranium is formed by bones which are joined by non-movable joints.

Name the type of joint found in the cranium.

..... [1]

Most candidates were able to provide the correct response 'fixed'. Pivot was the common incorrect response.

Question 3 (a) (i)

3 Components of the respiratory system enable the body to take in oxygen and remove carbon dioxide.

(a) Choose from the list below to answer the following questions about components of the respiratory system.

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

- bronchiole bronchus intercostal muscle
- larynx pleural membrane trachea

(i) Which component forms part of a narrow space filled with fluid to prevent friction as the lungs move?

..... [1]

Most candidates provided the correct response. Intercostal muscle was the most frequent incorrect response.

Question 3 (a) (ii)

(ii) Which is an airway that leads **from** the mouth into the thorax where it splits into two branches?

..... [1]

A well answered question, where common incorrect responses were bronchus and larynx.

Question 3 (a) (iii)

(iii) Which is a small airway that ends in an alveolus (air sac) within the lung?

..... [1]

Nearly all candidates identified bronchioles was the correct structure.

Question 3 (a) (iv)

(iv) Which is an organ where the vocal cords are found?

..... [1]

This question was well answered. It was evident candidates understood the structure and function of the respiratory system.

Question 3 (b) (i)

(b) Alveoli (air sacs) in the lungs are the site of gaseous exchange.

(i) Explain **two** ways in which the adaptations of alveoli improve the efficiency of gaseous exchange.

[4]

Candidates were generally successful in identifying the adaptation, but many were not able to explain how it improved gaseous exchange. A common issue was to simply repeat the question in responses. For example, 'alveoli have a large surface area, which improves the efficiency of gaseous exchange'. This is only creditable for one mark. Candidates need to say how it improves the efficiency of gaseous exchange.

Another issue was that some candidates provided slightly vague responses, for example 'they are thin'. Candidates need to be clearer and identify the wall of alveoli are thin.

Question 3 (c)

(c) Blood transports oxygen and carbon dioxide to and from body cells.

Which **one** of the following blood components transports carbon dioxide from body cells to the lungs?

Put a tick (✓) in the box next to the correct blood component.

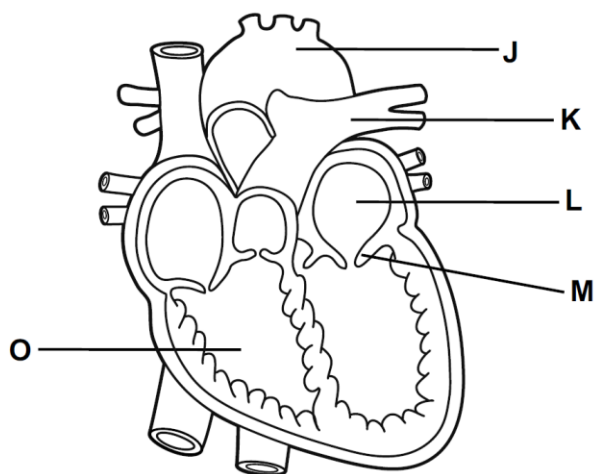
Blood component	Tick (✓) one only
Lymphocytes	
Monocytes	
Plasma	
Platelets	

[1]

A well answered question, with most candidates selecting plasma.

Question 3 (d) (i)

(d) The diagram below shows the internal structure of the heart which is part of the cardiovascular system.



(i) Complete the table below by selecting the correct letter that identifies the structures labelled on the diagram.

One row has been done for you.

Structure	Letter
Aorta
Bicuspid valve
Left atrium
Pulmonary artery	K
Right ventricle

[4]

Aorta and bicuspid valve were the most common correct responses. Some candidates mixed up the left atrium and right ventricle.

Question 3 (e) (ii)

(ii) Describe **one** way of monitoring Beth's condition.

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

Blood tests and electrocardiograms were common monitoring methods provided by candidates. However, some candidates did not describe the methods. This limited some candidates to just one mark.

Question 3 (e) (iii)

(iii) State **one** possible risk factor for CHD.

..... [1]

Most candidates correctly identified risk factors like smoking, obesity and hypertension. However, some candidates misunderstood the question providing heart attack and angina as their responses. Heart attacks and angina are forms of CHD, not risk factors.

Question 4 (a)

4 The liver and the pancreas are organs which have functions as part of the digestive system and also as part of the control and regulatory system.

(a) The table below shows some of the functions carried out by the liver or the pancreas.

Complete the table to indicate which functions are carried out by the liver and which are carried out by the pancreas.

The last row has been done for you.

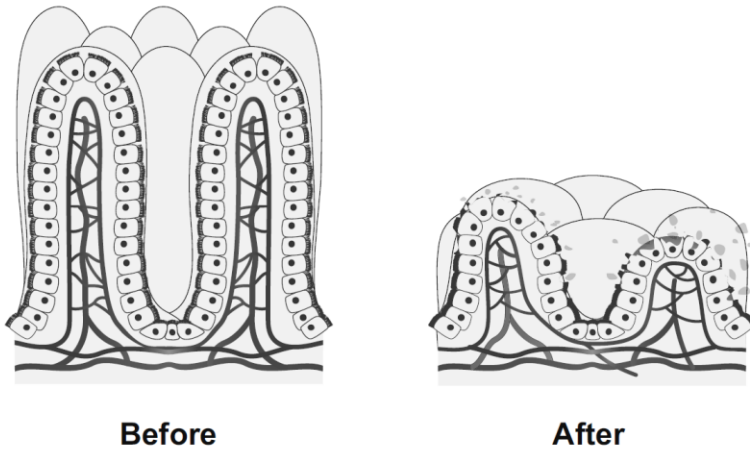
Function	Liver OR Pancreas
Assimilating glucose into cells
Deaminating amino acids
Producing bile to emulsify fats
Producing digestive enzymes
Producing hormones to regulate blood glucose	Pancreas

[4]

Candidates generally achieved between two and four marks for this question. Deamination and the production of bile were the most frequent correct responses.

Question 4 (b) (i)

(b) The diagrams below show the lining of the small intestine in a patient before and after it has been affected by Coeliac's disease, a malfunction of the digestive system.



(i) Describe **one** change in the lining of the small intestine that has occurred due to Coeliac's disease.

.....

.....

.....

.....

.....

.....

.....

..... [2]

Most candidates were able to identify the lining had been damaged or flattened. However, only some candidates were able to identify that it was the villi that had been damaged. Candidates either didn't move beyond saying the lining or used the term cilia. Cilia are similar to villi as they are projections, but they are found in the bronchioles of the respiratory system.

Question 4 (b) (ii)

(ii) Explain why changes to the lining of the small intestine can lead to weight loss and malnutrition in Coeliac patients.

.....

.....

.....

.....

.....

.....

..... [2]

Most candidates understood that Coeliac disease and the damage to the villi impaired the absorption of nutrients and were able to achieve at least one mark. However, some candidates didn't fully explain this, leaving out that nutrients are absorbed into the blood stream.

Question 4 (c)*

(c)* Azmi has been diagnosed with Coeliac's disease which has impacted on their lifestyle. Describe the social and dietary impacts of Coeliac's disease on Azmi's lifestyle.

.....

.....

.....

.....

.....

.....

..... [6]

This was a well answered Level of Response question with a good number of candidates addressing both the social and dietary impacts and achieving a Level 2 mark or better.

Question 5 (a) (i)*

5 Osteoporosis is a malfunction of the musculoskeletal system that affects bone tissue.

(a)

(i)* Explain the causes of osteoporosis and the effects it has on bone tissue.

[6]

Most candidates addressed both the causes and effects of osteoporosis, but generally covered effects in greater depth. Some candidates gave muddled responses focusing on joints and loss of cartilage, indicating confusion between osteoporosis and osteoarthritis.

Question 5 (a) (ii)

(ii) Possible treatments for osteoporosis include:

- load-bearing exercise
- bone strengthening medication and supplements
- hormone therapy.

Evaluate **one** of these methods used for treating osteoporosis.

.....

.....

.....

.....

.....

.....

..... [3]

Very few candidates achieved two or three marks for this question. Some candidates would describe treatments without addressing positives and negatives, which is required for evaluate questions. Or they provided vague responses, e.g. simply stated the treatment could have side effects, without stating what the side effects could be.

Question 5 (b)

(b) The knee joint is a type of synovial joint.

Match each of the components of a synovial joint with its function by drawing a line between the boxes.

One line has been completed for you.

Component	Function
cartilage	Maintains joint stability
synovial capsule	Attaches muscles to bone
synovial fluid	Reduces friction
tendon	Lubricates the joint

[3]

A well answered question with the majority of candidates obtaining three marks.

Copyright

Question 2 (c): Image - structure of the human brain; OCR modified- Shutterstock 349272965 By Alexander_P

Question 3 (d): Image - human heart anatomy; OCR modified- Shutterstock 561719803 By okili77

Question 4 (b): Image - small intestine (healthy and damaged villi); OCR modified - Shutterstock 390572875 By Tefi

Supporting you

Teach Cambridge

Make sure you visit our secure website [Teach Cambridge](#) to find the full range of resources and support for the subjects you teach. This includes secure materials such as set assignments and exemplars, online and on-demand training.

Don't have access? If your school or college teaches any OCR qualifications, please contact your exams officer. You can [forward them this link](#) to help get you started.

Reviews of marking

If any of your students' results are not as expected, you may wish to consider one of our post-results services. For full information about the options available visit the [OCR website](#).

Keep up-to-date

We send a monthly bulletin to tell you about important updates. You can also sign up for your subject specific updates. If you haven't already, [sign up here](#).

OCR Professional Development

Attend one of our popular CPD courses to hear directly from a senior assessor or drop in to a Q&A session. Most of our courses are delivered live via an online platform, so you can attend from any location.

Please find details for all our courses for your subject on **Teach Cambridge**. You'll also find links to our online courses on NEA marking and support.

Signed up for ExamBuilder?

ExamBuilder is the question builder platform for a range of our GCSE, A Level, Cambridge Nationals and Cambridge Technicals qualifications. [Find out more](#).

ExamBuilder is **free for all OCR centres** with an Interchange account and gives you unlimited users per centre. We need an [Interchange](#) username to validate the identity of your centre's first user account for ExamBuilder.

If you do not have an Interchange account please contact your centre administrator (usually the Exams Officer) to request a username, or nominate an existing Interchange user in your department.

Need to get in touch?

If you ever have any questions about OCR qualifications or services (including administration, logistics and teaching) please feel free to get in touch with our customer support centre.

Call us on
01223 553998

Alternatively, you can email us on
support@ocr.org.uk

For more information visit

 **ocr.org.uk/qualifications/resource-finder**

 **ocr.org.uk**

 **facebook.com/ocrexams**

 **twitter.com/ocrexams**

 **instagram.com/ocrexaminations**

 **linkedin.com/company/ocr**

 **youtube.com/ocrexams**

We really value your feedback

Click to send us an autogenerated email about this resource. Add comments if you want to. Let us know how we can improve this resource or what else you need. Your email address will not be used or shared for any marketing purposes.



I like this



I dislike this

Please note – web links are correct at date of publication but other websites may change over time. If you have any problems with a link you may want to navigate to that organisation's website for a direct search.



OCR is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored. © OCR 2024 Oxford Cambridge and RSA Examinations is a Company Limited by Guarantee. Registered in England. Registered office The Triangle Building, Shaftesbury Road, Cambridge, CB2 8EA. Registered company number 3484466. OCR is an exempt charity.

OCR operates academic and vocational qualifications regulated by Ofqual, Qualifications Wales and CCEA as listed in their qualifications registers including A Levels, GCSEs, Cambridge Technicals and Cambridge Nationals.

OCR provides resources to help you deliver our qualifications. These resources do not represent any particular teaching method we expect you to use. We update our resources regularly and aim to make sure content is accurate but please check the OCR website so that you have the most up to date version. OCR cannot be held responsible for any errors or omissions in these resources.

Though we make every effort to check our resources, there may be contradictions between published support and the specification, so it is important that you always use information in the latest specification. We indicate any specification changes within the document itself, change the version number and provide a summary of the changes. If you do notice a discrepancy between the specification and a resource, please [contact us](#).

You can copy and distribute this resource in your centre, in line with any specific restrictions detailed in the resource. Resources intended for teacher use should not be shared with students. Resources should not be published on social media platforms or other websites.

OCR acknowledges the use of the following content: N/A

Whether you already offer OCR qualifications, are new to OCR or are thinking about switching, you can request more information using our [Expression of Interest form](#).

Please [get in touch](#) if you want to discuss the accessibility of resources we offer to support you in delivering our qualifications.