

Cambridge TECHNICALS LEVEL 3

Cambridge
TECHNICALS
2016

HEALTH AND SOCIAL CARE

Combined feedback on the January 2017 exam
paper (including selected exemplar candidate
answers and commentary)

Unit 4 – Anatomy and physiology in health and social care

Version 1

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INTRODUCTION

This resource brings together the questions from the January 2017 examined unit (Unit 4), the marking guidance, the examiners' comments and the exemplar answers into one place for easy reference.

We've also included candidate exemplar answers with commentaries for Question 5d ii

The marking guidance and the examiner's comments are taken from the Report to Centre for this question paper.

The Question Paper, Mark Scheme and the Report to Centre are available from: <https://interchange.ocr.org.uk/>

OCR
Oxford Cambridge and RSA

Level 3 Cambridge Technical in Health and Social Care
05831/05832/05833

Unit 4: Anatomy and physiology for health and social care

16 January 2017 – Morning
Time allowed: 2 hours

You must have:
- None

You may use:
- None

First Name Last Name

Centre Number Candidate Number

Date of Birth

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 space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.

FOR EXAMINER USE ONLY

Question No.	Mark
1	13
2	15
3	19
4	26
5	27
Total	100

INFORMATION

- The total mark for this paper is 100.
- The marks for each question are shown in brackets [].
- Quality of extended responses will be assessed in questions marked with an asterisk (*).
- This document consists of 16 pages.

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OCR
Oxford Cambridge and RSA

Cambridge Technicals
Health and Social Care

Unit 4: Anatomy and physiology for health and social care

Level 3 Cambridge Technical Certificate/Diploma in Health and Social Care
05830 - 05871

Mark Scheme for January 2017

Oxford Cambridge and RSA Examinations

OCR
Oxford Cambridge and RSA

Cambridge Technicals
Health and Social Care

Level 3 Cambridge Technicals Certificates in Health and Social Care
05830, 05831

Level 3 Cambridge Technicals Diplomas in Health and Social Care 05832, 05833, 05871

OCR Report to Centres January 2017

Oxford Cambridge and RSA Examinations

GENERAL EXAMINER COMMENTS ON THE PAPER

This is the first examination session for the new OCR Cambridge Technicals suite and therefore there are no previous years for comparative purposes. Only six centres entered candidates and thus only 77 scripts were marked which again makes it hard to draw conclusions on performance.

The question paper covered a wide range of topics from the specification with a mixture of short and extended questions.

Many candidates did not read the questions accurately and thus provided information that was not required. Very few candidates took notice of the command verb 'evaluate' in the last question and, therefore, even the strongest responses only gained half marks as a 'sub-max' award.

Some candidates confused conditions, for example osteoarthritis with osteoporosis and AMD and cataracts.

When discussing the impact of the relevant conditions on the lives of individuals, a significant number of candidates do not appear to realise that most people, with for example, cystic fibrosis, do in fact lead fulfilling and busy lives despite their condition. Many answers throughout the paper dwelt on negative aspects of PIES. Whilst it is appreciated that time for delivery may be short, it is recommended that centres make maximum use of visiting speakers and that candidates are encouraged to research support groups and personal blogs of relevant individuals.

Many candidates had made use of the additional pages provided, but had not indicated that they had done so at the end of their initial answer.

For this paper errors in the spelling of scientific terminology were accepted unless unrecognisable.

A lot of candidates are starting their responses with 'empty' introductions that only serve to waste time and do not gain them any credit, as the statements given either repeat the question or give irrelevant information, for example, describing the causes and genetics of cystic fibrosis rather than concentrating on its effect on the respiratory system. A thorough understanding of command verbs and practice of reading questions is essential.

Resources which might help address the examiner comments:

From the link below, you'll find 'The OCR guide to examinations' (along with many other skills guides)

<http://www.ocr.org.uk/i-want-to/skills-guides/>

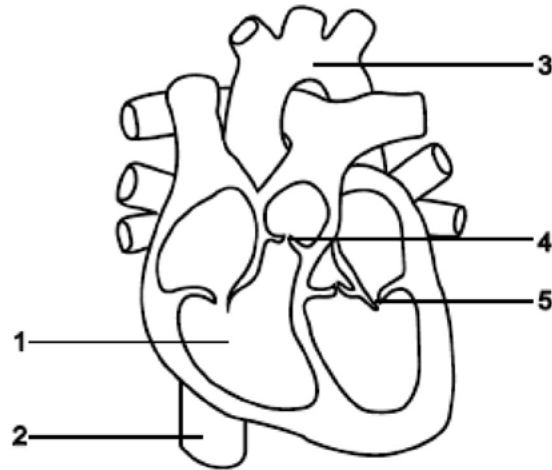
Command verbs definitions

<http://www.ocr.org.uk/Images/273311-command-verbs-definitions.pdf>

Question 1

1

The Human Heart



(a) Identify one key function for each of the structures labelled 1-5 in the diagram above.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- | | |
|----|---|
| 1. | pumps blood to lungs |
| 2. | carries blood from lower body to heart |
| 3. | carries blood to body |
| 4. | prevents backflow of blood from pulmonary arteries into heart |
| 5. | prevents backflow of blood from left ventricle into left atrium |

[5]

- (b) Paul experiences some chest pains and as a result he is admitted to hospital for tests. The results show that there is a malfunctioning of his coronary arteries.

(i) Describe the function of the coronary arteries.

Supplies oxygen and nutrients to heart muscle

[2]

(ii)* Explain the possible causes of the malfunctioning of Paul's coronary arteries and how it could affect his health.

How atheroma appears (cause):

Build-up of fats/cholesterol/plaque in coronary artery walls

Wall bulges and obstructs lumen of artery

Effects:

Reduces blood flow and supply of oxygen to heart muscle

Pain on exertion – angina

Can either block artery or bursts to form clot – blood supply to heart muscle stopped – heart attack/myocardial infarction

Could result in hospitalisation, long recovery or death.

[6]

Mark scheme guidance

1 (a)

Annotation:

The number of ticks must match the number of marks awarded.

For an incorrect answer use the cross.

1 (b) (i)

1 mark oxygen/nutrients/glucose.

1 mark to heart **muscle**.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

1 (b) (ii)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explanation.</p> <p>Annotation: The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed explanation • how appears/cause and effects • logically structured • factually accurate • correct use of terminology • QWC – high <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic explanation • how appears/cause + effect or one done well • limited relevant information • limited use of terminology • list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed explanation that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Sub-max 3 marks if only how appears/cause or effects done well.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an explanation in a limited manner. Likely to be a description/identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

Examiners comments

1 (a)

A large proportion of candidates named the structures either instead of, or as well as, providing a function. The heart appears to confuse some candidates.

1 (b) (i)

Despite their role in heart disease, most candidates think these are merely arteries that distribute blood around the body. Very few connected them to their function of supplying heart muscle directly with oxygen and nutrients.

1 (b) (ii)

Causes were identified but not necessarily explained. Consequences were also merely identified, with very few candidates linking the two aspects of the question. Most responses were thus only in Level 1.

Question 2

2 Oxygen is required for cellular respiration.

(a) (i) Identify one other chemical that is required for cellular respiration.

Glucose
ADP

[1]

(ii) Identify two products of cellular respiration.

Carbon dioxide
Water
ATP
lactic acid
energy

[2]

(b) Davina has cystic fibrosis.

(i)* Explain how this condition affects Davina's physical respiratory health.

Thick, sticky mucus produced by lungs as a result of a defective gene – restricts airflow

Results in inflammation which further narrows the airways

Persistent coughing

Breathlessness

Repeated lung infections as bacteria multiply in trapped air and mucus that make symptoms above worse

[6]

(ii)* Analyse how this condition impacts on Davina's daily life.

Possible impacts:

- Restricts sporting opportunities
- Restricts travelling opportunities
- Complicated daily regimes involving medication and physiotherapy
- Frequent infections usually resulting in hospitalisation – disruption of education/work
- Accept appropriate intellectual, social, emotional response

Accept references to other aspects of CF, for example: dietary restrictions, supplements, increased calorie intake, enzyme pills.

Opportunities for synoptic assessment e.g.

- unit 1 – how far it affects Davina may be partially influenced by the quality of relationships she has with practitioners
- unit 2 – she is potentially vulnerable and at risk of discrimination in her daily life
- unit 3 – her health and safety needs will be different from that of others who do not have her condition and these needs are likely to have a restrictive effect on her daily life

[6]

Mark scheme guidance

2 (a) (i)

1 mark for a correct answer.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

2 (a) (ii)

1 mark for each product identified X 2.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

2 (b) (i)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explanation.</p> <p>Annotation:</p> <p>The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed explanation • two or more effects – related to respiratory health/CF • logically structured • factually accurate • correct terminology • QWC – high <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic explanation • at least one effect – related to respiratory health/CF • information may not be relevant to respiratory health/CF • limited use of terminology • list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed explanation that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an explanation in a limited manner. Likely to be a description /identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

2 (b) (ii)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is analysis.</p> <p>Annotation:</p> <p>The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed analysis • two or more impacts of CF • relevant to Davina's daily life • well-developed, clear and logically structured • factually accurate • QWC – high • <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic analysis • likely to identify several impacts of CF with little or no analysis • information may not be relevant to Davina's daily life or CF • limited structure may be list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed analysis that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an analysis in a limited manner. Likely to be a description/identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

Examiners comments

2 (a) (i) and (ii)

Most candidates gave reasonable answers though some, despite the question lead in, mentioned oxygen again for either part. Candidates must understand the importance of reading questions carefully and slowly.

2 (b) (i)

Again candidates did not read the question and gave descriptions of causes including genetic details. Some referred to sticky mucus, but did not make the required link to its effect in the lungs and consequently to the effect on Davina's breathing. A minority did correctly make links to increased risks of respiratory infections. Some candidates did try to incorrectly turn this section into a PIES response despite part bii following.

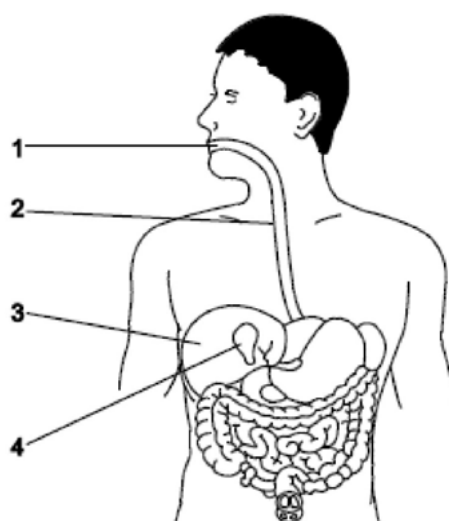
2 (b) (ii)

This section was generally very badly done as the majority of candidates fail to realise that despite its severity the vast majority of CF individuals lead fulfilling and 'normal' lives with successful education, careers, family life and recreational activities. Even some sports are possible. Some candidates did refer to the impact of physiotherapy, medications, hospitalisation and repeated infections, but lacked the specificity or accuracy to attain high marks. Most responses fell into Level 1.

Question 3

3

Digestive System



- (a) Identify one digestive function of each part of the digestive system labelled 1-4 in the diagram above.

1	Chewing using teeth, tongue and jaws, mechanical digestion of food, tasting food, chemical digestion, salivary amylase changing starch to maltose
2	Moving food by muscle action/peristalsis to stomach
3	Produces bile/bile salts/stores and assimilates absorbed products of digestion
4	Stores or releases bile

[4]

- (b) The stomach carries out both mechanical and chemical digestion.

- (i) Explain how the stomach carries out each of these functions.

<u>Mechanical digestion:</u>
Muscles of stomach churn food
Breaks food into smaller pieces/chime
<u>Chemical digestion:</u>
Produces enzyme pepsin
Action triggered by hydrochloric acid
Pepsin changes proteins to polypeptides/peptides

[4]

(ii) Describe how the small intestine is adapted to absorb the products of digestion.

..... Large surface area

..... Surface area increased by microvilli

..... Villi sway to mix digested food around

..... Contains blood capillaries to absorb sugars, amino acids
and water soluble vitamins

..... Contains lymph vessel/lacteal to absorb fats/fatty acids

[3]

(c) Daisy has been diagnosed with irritable bowel syndrome (IBS). It has been suggested that she keeps a food diary, avoids fizzy drinks and coffee and takes up some form of exercise.

Give a reason for each of these three suggestions.

Keep a food diary:

..... **Food diary** – allows a record of food eaten to be
..... recorded and matched against bouts of pain/irritability –
..... identifies foods that should be avoided

Avoid fizzy drinks and coffee:

..... **Avoiding fizzy drinks/coffee** – both irritate the gut and
..... cause symptoms of IBS so can increase symptoms and
..... inconvenience

Take up some form of exercise:

..... **Exercise** helps **reduce stress** which appears to be a
..... trigger for IBS so regular gentle exercise will lead to well-
..... being and reduction of symptoms

[3]

(d) Bernard has cirrhosis of the liver.

Describe what is meant by the term 'cirrhosis of the liver'.

Death of liver cells

Replaced by scar tissue

[2]

(e) Excessive consumption of alcohol is normally the cause of liver cirrhosis.

Identify what a healthy liver does to alcohol.

Breaks alcohol down/ removes alcohol from
blood/detoxifies alcohol

[1]

(f) Alcohol also affects the cerebellum of the brain.

(i) Identify the function of the cerebellum.

Fine tunes muscle action/responses

Stores 'memory' of learnt muscle actions/sequences

Controls muscles to maintain balance

[1]

(ii) Describe the effect of alcohol on the cerebellum.

Affects control of fine muscle actions resulting in loss of
co-ordination and/or balance

[1]

Mark scheme guidance

3 (a)

1 mark for each separate point described.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

3 (b) (i)

1 mark for each point but two must relate to mechanical and two to chemical for full marks.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

3 (b) (ii)

1 mark for each of any three points made.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

3 (c)

1 mark for each correct point made.

1 mark only available for each suggestion, with reason given.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

3 (d)

1 mark each correct point made.

Annotation:

The number of ticks must match the number of marks awarded.

For an incorrect answer use the cross.

3 (e)

1 mark for suitable response.

Annotation:

The number of ticks must match the number of marks awarded.

For an incorrect answer use the cross.

3 (f) (i)

1 mark for suitable response.

Annotation:

The number of ticks must match the number of marks awarded.

For an incorrect answer use the cross.

3 (f) (ii)

1 mark for a suitable response.

Annotation:

The number of ticks must match the number of marks awarded.

For an incorrect answer use the cross.

Examiners comments

3 (a)

Most candidates correctly identified functions of the buccal cavity and oesophagus, although a significant number confused the latter with the trachea, in name at least. Most candidates realised that structure 3 was the liver, but again chose to ignore the question rubric and gave a non-digestive function. Many candidates thought that structure 4 was the pancreas instead of the gall bladder.

3 (b) (i)

Most candidates scored marks in this part with mechanical digestion being better understood than chemical. Most responses concerning the latter lacked detail and accuracy, with many candidates incorrectly thinking that it is the hydrochloric acid that breaks down any protein in the chyme.

3 (b) (ii)

Most candidates scored well here and could correlate the presence of villi and microvilli to blood vessels, increased surface area and faster absorption.

3 (c)

Most candidates answered the first two parts of this question correctly, but only a few made the link between stress as a possible trigger factor for IBS and the benefits of exercise in relaxing and de-stressing individuals.

3 (d)

Most candidates got at least one mark for mentioning scarring but a lot failed to mention how excess alcohol kills liver cells. Some gained a second mark for at least stating that liver repair and/or regeneration was prevented.

3 (e)

Most mentioned detoxification, although some thought the liver killed alcohol.

3 (f)

These parts were reasonably well-answered with most candidates aware of the cerebellum's role in muscle co-ordination/control and hence balance.

Question 4

4 Donald, 68, has severe osteoarthritis in his knees and hands.

(a)* Explain what happens in a joint to cause arthritis.

What happens in a joint to cause arthritis:

Synovial fluid dries up

Erosion of cartilage

Stiffness of joint

Bone ends rub or make contact with each other

Extra bone growths can develop resulting in further friction points

Inflammation of the joint occurs

[6]

(b)* Analyse the likely impact of the arthritis on Donald's health and well-being.

Possible impacts:

- Pain – makes activity difficult – results in weight increase which places further strain on joints
- Pain – results in less sleep, can affect emotions
- Inflamed joints and pain make moving, lifting difficult – affects hobbies or recreational activities such as gardening
- Mobility issues can affect shopping and/or employment
- Loss of dexterity can mean hobbies/activities such as model making, sewing, knitting become impossible
- Washing/cooking/being independent become increasingly difficult.
- Accept any well-reasoned emotional, social consequence

[6]

(c) Donald's wife, Mary aged 58, has developed AMD (age related macular degeneration).

(i) Name the layer of the eye affected by this condition.

Retina – do not accept macula

[1]

(ii) Identify one effect this condition will have on Mary's vision.

Macula destroyed resulting in loss of central vision, inability to read etc., peripheral vision only.

[1]

Accept blurred vision

(iii)* Explain the likely impact of AMD on Mary's daily life.

Likely impacts:

Depending on speed of progression:

- may not be able to work
- not recognising faces
- unable to drive
- difficulty in reading or any other activity involving close vision
- difficulty in dressing,
- difficulty with cooking

Accept:

Other suitable daily activities that may be hindered by loss of central vision.

Accept well-reasoned social, emotional effects on daily life.

[6]

Note:

- Mary will not be totally blind.

(iv)* Analyse suitable strategies or support that could allow Mary to lead an independent lifestyle.

Possible suitable strategies or support:

Use of brighter lighting

Decorate rooms in colours to aid vision

Highlighting necessary objects with colour

Use of magnifiers

Use of sound alert for warnings as opposed to flashing lights

Advice and help from social services and occupational therapists for financial assistance and household/daily adaptations

Use of audio books and instructions

Learning Braille

White sticks/probes

In extreme cases use of a Guide Dog

Appropriate medical interventions, for example, medication, stem cell, laser treatment.

Use of support groups.

[6]

Synoptic element e.g.

unit 1 – support given should aim to meet needs while also allowing service users to retain a sense of control of their own care and independence; those supporting her should build a positive relationship with her – this is a factor influencing the likely success of support given, because there will be lack of misunderstandings and understanding of personal needs – personalized care

unit 2 – service users have rights to access facilities as part of legal rights to equality; these should lead to provision of aids such as Braille in e.g. art galleries and other public facilities

unit 3 – practitioners in offering and arranging support, strategies and aids are helping provide a safe environment to Mary

4 (a)

Content	Levels of response
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4 (b)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is analysis.</p> <p>Annotation: The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed analysis • two or more impacts • relevant to Donald's health & Wb • well-developed, clear and logically structured • factually accurate • QWC – high <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic analysis • likely to identify several impacts with little or no analysis • information may not be relevant to Donald's health & Wb • limited structure may be list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed analysis that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an analysis in a limited manner. Likely to be a description/identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

4 (c) (i)

1 mark for a correct answer.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

4 (c) (ii)

1 mark for a correct answer.

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

4 (c) (iii)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explanation.</p> <p>Annotation: The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed explanation • two or more likely impacts • relevant to Mary's daily life • well-developed, clear and logically structured • factually accurate • QWC – high <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic explanation • likely to identify several impacts with little or no explanation • information may not be relevant to Mary's daily life or AMD • limited structure may be list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed explanation that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an explanation in a limited manner. Likely to be a description /identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

4 (c) (iv)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is analysis.</p> <p>Annotation:</p> <p>The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • detailed analysis • two or more strategies/support • relevant to Mary's independence • well-developed, clear and logically structured • factually accurate • QWC – high <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic analysis • likely to identify several strategies or support with little or no analysis • information may not be relevant to supporting independence • limited structure may be list like / muddled • QWC – mid – low 	<p>Level 2 [4–6 marks]</p> <p>Candidates will provide a developed analysis that includes accurate terminology and follows a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates' will provide an analysis in a limited manner. Likely to be a description/identification only. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

Examiner comments

4 (a)

A number of candidates got muddled between osteoarthritis and osteoporosis and gave answers that merged information relating to both conditions. Some others discussed rheumatoid arthritis despite the question clearly stating that Donald had severe osteoarthritis.

Most candidates did give simplistic explanations of what happens in a joint to cause arthritis but tended to remain in Level 1 lacking the expansion and depth required for higher marks.

4 (b)

This section also suffered from candidates providing negative PIES with much made of social isolation and resulting depression. Those candidates who described practical consequences in relation to named daily activities revolving around cooking, personal hygiene, dressing, mobility, shopping and recreational activities scored the better marks.

4 (c) (i)

Many candidates simply identified the macula region which, as that is hinted at in the name of the condition, was not awarded a mark. Surprisingly few named the retina.

4 (c) (ii)

Most candidates referred to blurred vision whilst some stated an inability to recognise faces or read which was allowed although strictly speaking this is covered in the next part of the question. Many candidates do not appreciate that AMD does not lead to total blindness but to a loss of central vision only.

4 (c) (iii)

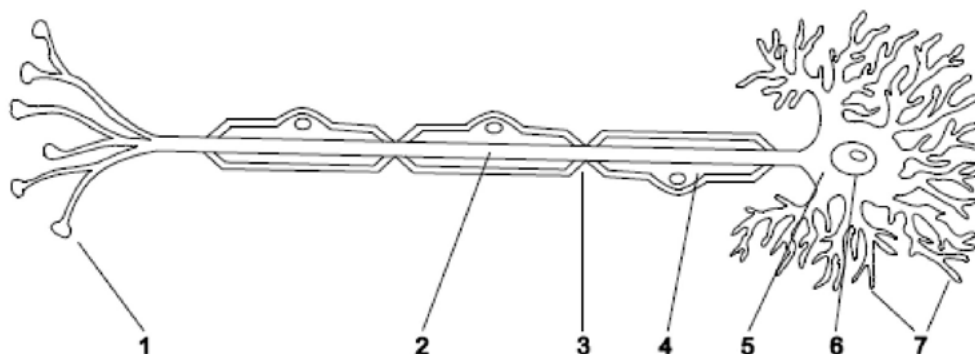
Most candidates provided correct responses, but were limited to Level 1 due to a lack of detail or expansion, for example, stating that Mary might not be able to drive without then explaining the impact this could have on work, independence, shopping, socialising etc.

4 (c) (iv)

Most candidates appear to think that simple eye drops or glasses will cure AMD. This is obviously not the case. References to medical strategies were therefore either very vague or totally inaccurate. Some candidates did refer to laser treatment and injections to slow down the development of the condition. No candidate referred to the current trials in stem cell therapy. Most 'strategies' were simple references to sticks, brighter lights, reorganised rooms, guide dogs and support groups. Unfortunately, these tended to be identified only and not analysed.

Question 5

5 Diagram of a nerve cell (neuron).



(a) (i) Identify the structures labelled 1-7 on the diagram above.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....

[7]

(ii) Explain the function of the structure shown by number 1 on the diagram above.

Produces chemicals/neurotransmitters.

Pass/diffuse across synapse to stimulate next nerve cell.

Accept passage/transmission of impulse/message from one cell to another –worth **one** mark.

[2]

(b) John, 67, has a severe stroke. His family have been told that his cerebral cortex has been damaged but that he may show some recovery.

(i)* Explain how a stroke may damage the cerebral cortex and what the likely effects on body function may be.

Ischaemic stroke – blood clot blocks artery in cortex and prevents blood with oxygen and nutrients reaching cortex cells – cells die

Haemorrhagic stroke – weakened blood vessel in cortex bursts – blood does not reach cells of cortex as above Also pressure of leaking blood which has nowhere to go as confined by skull presses down on tissue of cortex and damages/kills cells.

Cerebral cortex consists of areas given over to precise sensory input and motor responses. If cells in these areas die effects may be loss of vision, speech, hearing, paralysis, difficulty swallowing

(ii)* Evaluate the care options and help that is available to assist John in his recovery.

Care options/help available:

- Emotional support/counselling – Charities/Support groups
- Aphasia software programmes
- Medical intervention – medication, regular check-ups
- Bathing/dressing aids
- Furniture adaptations
- Kitchen aids
- Mobility aids
- Personal alarms
- Adapted telephones
- Speech therapy
- Physiotherapy
- Occupational therapy
- Home help/residential care/family support/sheltered accommodation

Positives

- + Aid recovery
- + Promote independence
- + Support can show that service user not alone

Specific examples linked to options / aids listed above

Negatives

- Not all support/aids available free – means tested
- Some support not offered by some authorities
- Care expensive and very limited time for home visits
- Some users may not have families for support/care/help
- Isolated location
- No local charity support and not proficient in IT or does not have internet access
- Service users too embarrassed, for example over incontinence or sexual issues
- Recovery is time consuming and frustrating
- Carers need patience and have to put up with user's changed behaviour and frustration – not all families can do this.

[10]

Markscheme guidance

5 (a) (i)

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

5 (a) (ii)

2 marks for appropriately developed explanation

1 mark for basic statement that lacks clarity

Annotation:

The number of ticks must match the number of marks awarded.

For an **incorrect** answer use the **cross**.

5 (b) (i)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explanation.</p> <p>Annotation:</p> <p>The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 3 – checklist</p> <ul style="list-style-type: none"> • detailed explanation • both damage caused and effects • well-developed, clear and logically structured • factually accurate • correct use of terminology • QWC – high <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • sound explanation • damage caused & effect or one done well • mostly factually accurate • mostly relevant information • some correct terminology • QWC – mid <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic explanation • likely to identify several causes/effects with little or no explanation • information may not be relevant • limited structure may be list like / muddled • minimal or no terminology • QWC – low 	<p>Level 3 [7–8 marks]</p> <p>Candidates will provide a fully developed explanation that includes accurate terminology and follows a logical sequence and covers both types of stroke. For top marks the correct nomenclature should be used. Both damage caused and effects must be covered. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 2 (4–6 marks]</p> <p>Candidates will provide an explanation that includes accurate terminology.</p> <p>Sentences and paragraphs are generally relevant but may have minor inaccuracies or lack clarity and depth of understanding. There may be some errors of grammar, punctuation and spelling.</p> <p>Sub-max of 3 if only damage/cause or effects explained.</p> <p>Level 1 [1–3 marks]</p> <p>Candidates will provide a limited explanation. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

5 (b) (ii)

Content	Levels of response
<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explanation.</p> <p>Annotation: The number of ticks will not necessarily correspond to the marks awarded.</p> <p>Level 3 – checklist</p> <ul style="list-style-type: none"> • care options and help • fully detailed evaluation • both positives and negatives • well-developed, clear and logically structured • factually accurate & relevant • correct use of terminology • QWC – high <p>Level 2 – checklist</p> <ul style="list-style-type: none"> • just care options or help • sound evaluation • at least one positive & negative • may lack clarity • mostly factually accurate • some relevant information • QWC – mid <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • basic evaluation • likely to identify care options or help with little or no evaluation • information may not be relevant • limited structure – list like or muddled • QWC – low 	<p>Level 3 [9–10 marks]</p> <p>Candidates will provide a fully developed evaluation that includes accurate terminology and follows a logical sequence. Both positives and negatives will be given. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There may be occasional errors of grammar, punctuation and spelling.</p> <p>Level 2 [5–8 marks]</p> <p>Candidates will provide an evaluation that includes accurate terminology. Some positives and negatives will be given. Sentences and paragraphs are generally relevant but may have minor inaccuracies or lack clarity and depth of understanding. There may be some errors of grammar, punctuation and spelling.</p> <p>Sub-max of 5 – if only positives or negatives given</p> <p>Level 1 [1–4 marks]</p> <p>Candidates' will evaluate treatments in a limited manner. Their use of appropriate terminology will be limited. Sentences and paragraphs are not always relevant, with the material presented in a way that does not always address the question. There may be noticeable errors of grammar, punctuation and spelling and answers may be list like.</p> <p>0 marks – response not worthy of credit.</p>

Examiners comments

5 (a) (i)

Either candidates knew these structures or they didn't. Those that didn't failed to identify much beyond the myelin sheath and the nucleus.

5 (a) (ii)

Generally this produced confused answers with only a minority managing to refer to the action and purpose of a synapse.

5 (b) (i)

The majority of candidates referred to blood clots or blood leaks, but only a few used the terms ischaemic and haemorrhagic. Whilst most made a reference to the brain cells dying, few explained exactly why cell death and / or damage occurs. There also appeared much confusion over what the cerebral cortex is and many confused this precise outer layer of the brain with the cerebrum itself. Thus, there were references to memory loss and personality change. The question stem clearly identified the cortex as being the damaged region, but instead of explaining the resulting loss in muscle movements/sensations from precise, identified regions of the body, references were made to what were essentially the FAST symptoms identified in health campaigns. Marks were awarded for this, but the mere identification restricted such candidates to Level 1.

5 (b) (ii)

Unfortunately, nearly all candidates chose to ignore the command verb of the question which was 'Evaluate'. A very small number did give pros and cons of various strategies or treatments but most simply described or just identified various options, such as speech therapy, physiotherapy, dietary changes, care -either domiciliary or residential and support groups. There was very little expansion with little or no specificity. The mark scheme provides several of the expected options.

Exemplar Candidate Work

Question 5 (b) (ii) – Medium level answer

(ii)* Evaluate the care options and help that is available to assist John in his recovery.

John will be able to get care help from the NHS. They may provide John with a wheelchair. This will be useful for John so that he is still able to get around. This will also allow him to get out of the house and spend time with people. This will stop him from feeling depressed and upset if he was sat in the house all of the time. The NHS may also provide John with an occupational therapist/carer. This will be of use to John if he lives alone. The occupational therapist will be able to make any needed adjustments to John's house. This may consist of having a bed downstairs so that he doesn't have to go upstairs to bed if he can't walk. ~~John~~ They may also help to make adjustments

[10]

Commentary

The candidate has provided a number of valid care options and methods of help suitable for John. However, the candidate has only identified the positive benefits of these choices. This question clearly asks candidates to evaluate available help for John and this requires both positive and negative points to gain high marks. The mark scheme informed examiners that if a candidate's response consisted of just positive statements then only a sub-max of five marks could be awarded -as it was in this case.

To gain additional marks the candidate should have included some negative aspects to the care options and support suggested for John. The candidate could have stated that not all support or aids are available free with some being means tested and the client having to pay themselves. They could also have added that not all local authorities supply the same level of support.

The candidate refers to there being a carer for John although no details are given. It would be worth stating that care is very expensive and that there is often limited time for home visits -often no more than thirty minutes. Many clients either do not have families or any local family members that can provide care.

When the candidate refers to the provision of a commode they could have mentioned that many clients would feel embarrassed about its use or any aspect of possible incontinence.

The candidate concludes by citing the services of a physiotherapist and the use of speech therapy. This could have been followed by stating that recovery is likely to be very slow and that such programmes of support will be time consuming and very frustrating at times possibly resulting in John becoming despondent and depressed.

Question 5 (b) (ii) – High level answer

(ii)* Evaluate the care options and help that is available to assist John in his recovery.

This is a candidate style answer

John will require emotional and physical support during his recovery. Much of this could be provided by his family. However, they may not live locally and they may have existing work and family commitments that could prevent their assistance. People recovering from strokes often display mood swings, frustration and bursts of anger which untrained family members may find hard to cope with.

Home care using domiciliary help maybe an option to help John with cooking, cleaning, dressing and washing. However, this form of care is expensive and is not always offered free by all local authorities to all individuals. Home visits can also be very brief especially in rural areas where much time is spent travelling between clients. It is often means tested as are various 'meals on wheels' schemes which, whilst ensuring that John receives proper nutrition to maintain his health and recovery without the problems of cooking, are expensive.

Residential care is a further option but this too is not always readily available and is again means tested and is dependent on the level of John's savings and if he owns his house he might have to sell it to finance his care. Whilst a home will aid his recovery and provide company and emotional support John may well view it negatively if he likes being independent especially if his choice of home is limited.

Emotional support could also be provided by charities and support groups that would allow him to meet with other similar individuals but there may be none in the area. Whilst support is available on-line John may not possess a computer or IT skills or may live in a poor broadband area.

His local GP and health centre can aid his recovery by providing regular check-ups and medication but if John lives in a rural area access may be an issue and in urban areas it is often hard for patients to obtain appointments with the doctor of their choice. Lifestyle choices may be suggested to decrease the likelihood of a further stroke but some individuals find it hard to give up lifetime habits such as smoking and alcohol.

An occupational therapist may help John increase his independence by suggesting tools and aids for dressing, washing, cooking and mobility. However, these too may have to be purchased privately by John. Whilst he would find the mobility aids useful in promoting independence he may also find their use embarrassing and stigmatising.

Finally, physiotherapy and speech therapy may help to regain his muscle action and speech but this will be a long drawn out process and is likely to result in John being both frustrated and embarrassed.

[10]

Commentary

For this question, there are three levels of response -Levels 1-3. This answer is a high Level 3 response for which 9 or 10 marks are available. This candidate would be awarded the full ten marks.

They have identified a number of care options and available help. They have provided a fully detailed evaluation providing a balance of positives and negatives.

The response is well-developed, clear and logically structured and organised with good use of paragraphs.. The information is factually accurate and relevant.

The quality of written communication is high with no obvious errors of grammar, spelling or punctuation.



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