

# **Cambridge Technicals Health and Social Care**

## **Unit 4: Anatomy and physiology for health and social care**

Level 3 Cambridge Technical in Health and Social Care  
**05831 - 05833 & 05871**

## **Mark Scheme for June 2022**

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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**MARKING PREPARATION****PREPARATION FOR ON-SCREEN MARKING****RM ASSESSOR**

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Online Training*; *OCR Essential Guide to Marking*.
2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are available in RM Assessor.
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **required number** of standardization responses.

**PREPARATION FOR PAPER-BASED MARKING**

1. Make sure that you have accessed and completed the relevant training packages for paper-based marking
2. Make sure that you have read and understood the instructions for specialist marking, mark scheme and the question paper for this unit.
3. Before the standardization and set-up (SSU) meeting, you must mark 10 scripts from several different centres. Use **pencil**, mark lightly with pencil, and follow the **mark-scheme**. Bring these **marked scripts** to the SSU meeting.

**MARKING INSTRUCTIONS FOR ON-SCREEN AND PAPER-BASED MARKING**

















1. Your first task as an examiner is to become thoroughly familiar with the material on which the examination depends. This material includes: the unit specification, the question paper and any associated rubrics/pre-releases etc., and the mark scheme.
2. You should ensure that you have copies of these materials.
3. You should ensure also that you are familiar with the administrative procedures relating to the marking process. These are set out in the OCR booklet, **Instructions for Examiners**. If you are examining for the first time, please read **carefully Appendix 5: Introduction to Script Marking: Notes for New Examiners**.
4. Please study the mark scheme carefully. The mark scheme is an integral part of the process that begins with the setting of the question paper and ends with the awarding of grades. Question papers and mark schemes are developed in association with each other so that issues of differentiation and positive achievement can be addressed from the start.
5. The mark scheme is a working document; it is not exhaustive; it does not always provide 'all of the correct' answers. The mark scheme can only provide 'educated guesses' about how the question will work out prior to exam sat date, and it is subject to revision after we have looked at a wide range of scripts during the standardization and set-up meeting.
6. Please read carefully all the scripts in your allocation and make every effort to look positively for achievement throughout the ability range. Always be prepared to use the full range of marks.
7. Mark strictly to the most up-to-date mark scheme. You should have a PRE-SSU mark scheme which should be used to mark scripts prior to the standardization and set-up meeting, and a definitive, finalized POST-SSU mark scheme which should be used when standardization script, seed script, and live marking begins.
8. Marks awarded must relate directly to the marking criteria.
9. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional paper-based marking of 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
10. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, and if using RM, email or via the RM Assessor messaging system

11. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there then add a tick to confirm that the work has been seen.
12. The RM Assessor **comments box**/SSU meeting is used by your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason if using RM Assessor.**

If you have any questions or comments for your Team Leader, use face-to-face contact at the SSU meeting, the phone, the RM Assessor messaging system, or email.

13. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

## 14. Annotations available for marking of scripts

Annotation	Meaning
	Correct response
	Incorrect response
	Positive
	Negative
	Development of point
	Level 1
	Level 2
	Level 3
	Omission mark
	Benefit of doubt given (this annotation counts as a mark so do not tick as well)
	Benefit of doubt not given
	Contradiction
	Repeat
	Too vague
	Noted but no credit given
	Ignore

**DO NOT USE ANY OTHER ANNOTATION**

**MARKING GUIDANCE****1. Crossed Out Responses**

Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed out response where legible.

**2. Rubric Error Responses – Optional Questions**

Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. (The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)

**3. Multiple Choice Question Responses**

When a multiple choice question (any type including gap fill) has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).

When a question requires candidates to select more than one option/multiple options, Health and Social Care marking principles (in line with our approach to positive marking) state that the first two/three/four options from top to bottom (dependent on what the question requires) will only be marked to ensure fairness for those candidates who have followed the instructions of the question (the underlying assumption here is that it is not possible to determine which were the main responses selected by the candidate, and candidates may be attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses).

**4. Contradictory Responses**

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

**5. Short Answer Questions (requiring only a list by way of a response, usually worth only one mark per response)**

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. (The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)

6. **Short Answer Questions (requiring a more developed response, worth two or more marks)**

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space. Indicative content will be more prevalent in these questions due to the potentially wide parameters expected of candidates' answers.

7. **Longer Answer Questions (requiring a developed response)**

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

8. **Award NR (No Response):**

- a. if there is nothing written at all in the answer space
- b. OR if there is a comment which does not in any way relate to the question (e.g. 'can't do', 'don't know')
- c. OR if there is a mark (e.g. a dash, a question mark) which isn't an attempt at the question.
- d. Note: Award 0 marks – for an attempt that earns no credit (including copying out the question).



### 9. Level of Response Questions

Read through the whole answer from start to finish, using the level descriptors to help you decide whether it is a strong or weak answer. The indicative content in the guidance column indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance.

Using a 'best-fit' approach based on the skills and health & social care content evidenced within the answer, first decide which set of level descriptors, Level 1, 2 or 3, best describes the overall quality of the answer. Once the level is located, award a high, middle or low mark:

**The highest mark** where **all** of the level descriptor has been evidenced and **all** aspects of the communication statement (in italics) have been met.

**The high-middle mark** (four-mark level range) where **all/most** of the level descriptor has been evidenced and **most/all** aspects of the communication statement (in italics) have been met respectively.

**The low-middle mark** (four-mark level range) where **all/most** of the level descriptor has been evidenced with **some/most** aspects of the communication statement (in italics) have been met respectively.

**The middle mark** (three-mark level range) where **all/most** of the level descriptor has been evidenced and **some/most** aspects of the communication statement (in italics) have been met respectively.

**The lowest mark** should be awarded where **all/most** of the level descriptor has been evidenced and **few/some** aspects of the communication statement (in italics) have been met.

Be prepared to use the full range of marks. Do not reserve highest level marks 'in case' something turns up of a quality you have not yet seen. If an answer gives clear evidence of the qualities described in the level descriptors, reward appropriately.

**In summary:**

**The skills and health & social care content via the descriptors determines the level. The communication statement determines the mark within a level.**

Level of response questions on this paper are **1e\*** , **2cii\***, **2e\***, **3b\***, **4dii\***, **4f\***, and **5c\***

## ABBREVIATIONS, ANNOTATIONS &amp; CONVENTIONS USED IN THE MARK SCHEME

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
✓	Separates marking points - One tick = one mark, Two ticks = two marks etc.
<b>ACCEPT</b>	Answers that can be accepted
<b>DO NOT ACCEPT</b>	Answers which cannot be accepted
<b>IGNORE</b>	Statements which are irrelevant
( )	Words/letters/symbols which are not essential to gain credit
—	Underlined words must be present in answer to score a mark, i.e. no other answer is acceptable
<b>AW</b>	Alternative wording
<b>ORA</b>	Or reverse argument
<b>(number x number)</b>	e.g. 3x2 – 3 explanations required, 2 marks per explanation 1x1 – 1 description required, 1 mark for description
<b>MAX number word FROM:</b>	Candidate is only allowed a maximum set number of marking points from the list that begins with: 'max number word from:'
<b>ANY number word FROM:</b>	Candidate is allowed any set number of marking points from the list that begins with: 'any number word from:'

Question			Answer/Indicative Content	Marks	Guidance																		
1	(a)		<table border="1"> <thead> <tr> <th>Description</th> <th>Structure</th> </tr> </thead> <tbody> <tr> <td>(A small bone that transmits sound vibrations within the ear.)</td> <td><u>stapes</u> ✓</td> </tr> <tr> <td>(Found in the cochlea and contains rows of hair cells).</td> <td><u>organ of Corti</u> ✓</td> </tr> <tr> <td>(Opening covered by a membrane that allows movement of fluid in the cochlea.)</td> <td><u>round window</u> ✓</td> </tr> <tr> <td>(Separated from the external ear by the ear drum).</td> <td><u>middle ear</u> ✓</td> </tr> </tbody> </table>	Description	Structure	(A small bone that transmits sound vibrations within the ear.)	<u>stapes</u> ✓	(Found in the cochlea and contains rows of hair cells).	<u>organ of Corti</u> ✓	(Opening covered by a membrane that allows movement of fluid in the cochlea.)	<u>round window</u> ✓	(Separated from the external ear by the ear drum).	<u>middle ear</u> ✓	4 (4x1)	ACCEPT phonetic spelling If <b>TWO</b> answers given in a space 0 marks								
Description	Structure																						
(A small bone that transmits sound vibrations within the ear.)	<u>stapes</u> ✓																						
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1	(b)	(i)	<u>auditory</u> ✓	1 (1x1)	ACCEPT phonetic spelling																		
1	(b)	(ii)	<u>optic</u> ✓	1 (1x1)	ACCEPT phonetic spelling																		
1	(c)		<table border="1"> <thead> <tr> <th>Structure</th> <th>Description</th> <th></th> </tr> </thead> <tbody> <tr> <td>axon</td> <td>A gap between Schwann cells that helps to speed up the nerve impulse.</td> <td></td> </tr> <tr> <td>cell body</td> <td>Long, thin part of the neuron that conducts the impulse along.</td> <td>✓</td> </tr> <tr> <td>dendron</td> <td>Part of the neuron that consists of Schwann cells forming an insulating layer.</td> <td>✓</td> </tr> <tr> <td>myelin sheath</td> <td>Part of the neuron that contains the nucleus.</td> <td>✓</td> </tr> <tr> <td>node of Ranvier</td> <td>Short, branched part of the neuron that receives impulses from other neurons.</td> <td>✓</td> </tr> </tbody> </table>	Structure	Description		axon	A gap between Schwann cells that helps to speed up the nerve impulse.		cell body	Long, thin part of the neuron that conducts the impulse along.	✓	dendron	Part of the neuron that consists of Schwann cells forming an insulating layer.	✓	myelin sheath	Part of the neuron that contains the nucleus.	✓	node of Ranvier	Short, branched part of the neuron that receives impulses from other neurons.	✓	4 (4x1)	ACCEPT only <b>one</b> line between each set of 2 boxes (from structure to description box)
Structure	Description																						
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1	(d)	(i)	<u>ageing</u> ✓	1 (1x1)	If more than <b>ONE</b> box ticked 0 marks																		

Question			Answer/Indicative Content	Marks	Guidance
1	(d)	(ii)	<p><b>ANY ONE reason FROM:</b></p> <ul style="list-style-type: none"> <li>• too much fluid (vitreous humour) in the eye ✓</li> <li>• fluid is unable to drain away ✓</li> <li>• blocked ducts ✓</li> </ul>	1 (1x1)	<p><b>ACCEPT</b> named fluid e.g. aqueous humour</p> <p>Do not credit tear duct</p>
1	(e)*		<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5-6 marks)</b> Detailed description of symptoms of glaucoma and effects on Kai's eyesight.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3-4 marks)</b> Sound description of symptoms of glaucoma and effects on Kai's eyesight.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1-2 marks)</b> Limited description of symptoms of glaucoma <b>OR</b> effects on Kai's eyesight <i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	6	<p><b>Possible symptoms and effects of glaucoma (not exhaustive):</b></p> <p><b>Symptoms:</b></p> <ul style="list-style-type: none"> <li>• may have no symptoms</li> <li>• nausea</li> <li>• eye pain</li> <li>• eye redness</li> <li>• headaches</li> <li>• issues with vision</li> </ul> <p><i>effects on eyesight can also be credited as symptoms e.g. patches in vision</i></p> <p><b>effects on eyesight:</b></p> <ul style="list-style-type: none"> <li>• patchy blind spots</li> <li>• tunnel vision</li> <li>• blurred vision</li> <li>• problems with peripheral / edges of vision</li> <li>• coloured circles / halos around bright lights</li> <li>• blindness / vision loss</li> <li>• progressive/get worse over time</li> <li>• lost vision is permanent</li> </ul> <p><i>Do not accept lifestyle issues as effects e.g. issues reading</i></p>

Question			Answer/Indicative Content	Marks	Guidance												
2	(a)	(i)	(valve) X ✓	1 (1x1)	If <b>TWO</b> answers given in a space 0 marks												
2	(a)	(ii)	<table border="1"> <thead> <tr> <th>Role in Heart Function</th> <th>Component</th> </tr> </thead> <tbody> <tr> <td>(A blood vessel that carries deoxygenated blood from the body back into the heart.)</td> <td>(<u>vena cava</u>)</td> </tr> <tr> <td>(A blood vessel that carries oxygenated blood from the lungs back into the heart.)</td> <td><u>pulmonary vein</u> ✓</td> </tr> <tr> <td>(A blood vessel that carries oxygenated blood out of the heart to the body.)</td> <td><u>aorta</u> ✓</td> </tr> <tr> <td>(A chamber that forces blood out of the heart towards the lungs.)</td> <td>right ventricle ✓</td> </tr> <tr> <td>(A chamber that receives deoxygenated blood returning from the body.)</td> <td><u>right atrium</u> ✓</td> </tr> </tbody> </table>	Role in Heart Function	Component	(A blood vessel that carries deoxygenated blood from the body back into the heart.)	( <u>vena cava</u> )	(A blood vessel that carries oxygenated blood from the lungs back into the heart.)	<u>pulmonary vein</u> ✓	(A blood vessel that carries oxygenated blood out of the heart to the body.)	<u>aorta</u> ✓	(A chamber that forces blood out of the heart towards the lungs.)	right ventricle ✓	(A chamber that receives deoxygenated blood returning from the body.)	<u>right atrium</u> ✓	4 (4x1)	<b>ACCEPT</b> phonetic spelling If <b>TWO</b> answers given in a space 0 marks  <b>DO NOT ACCEPT</b> pulmonary artery  <b>DO NOT ACCEPT</b> left ventricle  <b>DO NOT ACCEPT</b> left atrium
Role in Heart Function	Component																
(A blood vessel that carries deoxygenated blood from the body back into the heart.)	( <u>vena cava</u> )																
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(A chamber that forces blood out of the heart towards the lungs.)	right ventricle ✓																
(A chamber that receives deoxygenated blood returning from the body.)	<u>right atrium</u> ✓																
2	(b)		<u>glucose</u> ✓ <u>ATP</u> ✓ <u>aerobic</u> ✓ <u>carbon dioxide</u> ✓	4 (4x1)	<b>ACCEPT</b> phonetic spelling <b>DO NOT ACCEPT</b> words in any other order If <b>TWO</b> answers given in a space 0 marks												
2	(c)	(i)	<b>ANY TWO symptoms FROM:</b> <ul style="list-style-type: none"> <li>• breathlessness ✓</li> <li>• nausea ✓</li> <li>• chest pain ✓</li> <li>• tightness in chest</li> <li>• pain spreading to arms, neck and/or jaw ✓</li> <li>• sweating ✓</li> <li>• lightheadedness/dizziness ✓</li> <li>• headache ✓</li> <li>• irregular heartbeat ✓</li> <li>• loss of consciousness ✓</li> </ul>	2 (2x1)	<b>Other</b> appropriate answers acceptable												

Question			Answer/Indicative Content	Marks	Guidance
2	(c)	(ii)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5-6 marks)</b> Detailed explanation of possible causes for blocked artery. <b>AND</b> Clear understanding of how risk factors contribute.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3-4 marks)</b> Sound explanation of possible causes for blocked artery. <b>AND</b> Answer includes reference to an example of a risk factor. <b>OR</b> Detailed explanation of possible causes for blocked artery. <b>OR</b> Explanation of how risk factors contribute.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–2 marks)</b> Limited or basic explanation of possible causes for blocked artery. <b>AND</b> Answer may make limited reference to an example of a risk factor.</p> <p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	6	<p><b>Possible causes for blocked artery (not exhaustive):</b></p> <ul style="list-style-type: none"> <li>• fatty deposits in artery wall (narrow artery)</li> <li>• cholesterol deposits</li> <li>• atheromas</li> <li>• inflammation occurs</li> <li>• plaques develop</li> <li>• atherosclerosis hardens or ‘clogs’ arteries</li> <li>• plaque may break down</li> <li>• blood clots form</li> </ul> <p><b>DO NOT ACCEPT</b> blocked artery or reduced blood flow to heart</p> <p><b>Risk factors (not exhaustive):</b></p> <ul style="list-style-type: none"> <li>• ageing</li> <li>• genetics / family history</li> <li>• smoking</li> <li>• diet high in saturated fats</li> <li>• high cholesterol levels</li> <li>• high blood pressure</li> <li>• diabetes</li> <li>• obesity</li> <li>• stress</li> <li>• lack of exercise/inactivity</li> <li>• diet high in salt</li> <li>• Excessive alcohol</li> <li>• drug abuse</li> </ul> <p><i>do credit candidates who mix up causes and risk factors e.g., identifies smoking as a cause</i></p>

Question			Answer/Indicative Content	Marks	Guidance
2	(d)	(i)	<b>ANY TWO FROM:</b> <ul style="list-style-type: none"> <li>• haemorrhage / haemorrhagic stroke ✓</li> <li>• blood vessel bursts ✓</li> <li>• high blood pressure</li> <li>• weakens arteries ✓</li> <li>• blood leaks into brain ✓</li> </ul>	<b>2</b> <b>(1x2)</b>	<b>DO NOT ACCEPT</b> anything relating to an ischaemic stroke
2	(d)	(ii)	<b>ANY TWO lifestyle changes FROM:</b> <ul style="list-style-type: none"> <li>• stop smoking ✓</li> <li>• lowered intake of fat, sugar or salt ✓</li> <li>• reduce stress ✓</li> <li>• reduce alcohol intake ✓</li> <li>• lose weight ✓</li> <li>• increase exercise ✓</li> </ul>	<b>2</b> <b>(2x1)</b>	<b>Other</b> appropriate answers acceptable  <i>If two changes identified on one space, mark first one answer provided</i>

Question		Answer/Indicative Content	Marks	Guidance
2	(e)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5-6 marks)</b> Detailed analysis of <b>two</b> treatments designed to manage symptoms of stroke that identifies characteristics of the treatments, including a statement on the effectiveness of use e.g. provides a long term solution, or discusses side effects.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3-4 marks)</b> Detailed analysis of <b>one</b> treatment designed to manage symptoms of stroke that identifies characteristics of the treatments, including a statement on the effectiveness of use e.g. provides a long term solution, or discusses side effects.</p> <p>Limited analysis of <b>two</b> treatments for stroke that identifies characteristics of the treatments <b>OR</b> a statement on the effectiveness of use e.g. provides a long term solution, or discusses side effects.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–2 marks)</b> Limited analysis of <b>one</b> treatment for stroke that identifies characteristics of the treatments <b>OR</b> a statement on the effectiveness of use</p> <p><b>OR</b> Basic list of <b>two</b> or more treatments without detail of characteristics.</p>	6	<p><b>Possible treatments for stroke (not exhaustive):</b></p> <p><b>clot busters / alteplase</b></p> <ul style="list-style-type: none"> <li>• provided by injections</li> <li>• uses medicine called <b>alteplase</b></li> <li>• dissolves blood <b>clots</b></li> <li>• restores blood flow to the brain</li> <li>• must be used as soon as possible after the stroke</li> <li>• could cause bleeding</li> </ul> <p><b>antiplatelet / aspirin</b></p> <ul style="list-style-type: none"> <li>• reduces production of enzyme that stimulates formation of clots</li> <li>• inhibits aggregation of platelets in blood that cause clots</li> <li>• reduces chance of another clot</li> <li>• could cause bleeding</li> </ul> <p><b>anticoagulant / warfarin</b></p> <ul style="list-style-type: none"> <li>• thins the blood</li> <li>• makes blood clot more slowly</li> <li>• reduces risk of clots</li> <li>• some can be for long term use</li> <li>• others can only be used short term</li> <li>• prevents clots forming</li> <li>• some can only be given by injection</li> <li>• could cause bleeding</li> </ul> <p><b>thrombectomy</b></p> <ul style="list-style-type: none"> <li>• a type of surgery</li> <li>• performed on artery or vein</li> <li>• removes clots</li> <li>• restores blood flow</li> <li>• should be done as soon as possible after stroke</li> <li>• invasive surgical procedure</li> </ul>



		<p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	<p><b>surgery to remove fatty deposits or repair of arteries / angioplasty</b></p> <ul style="list-style-type: none"> <li>• removes build-up of fatty deposits</li> <li>• repairs affected arteries</li> <li>• stent fitted</li> <li>• can be performed under local anaesthetic</li> <li>• restores blood flow</li> <li>• invasive surgical procedure</li> </ul> <p><b>Medication to lower blood pressure / ACE inhibitors</b></p> <ul style="list-style-type: none"> <li>• taken as tablets</li> <li>• on a daily basis</li> <li>• reduces blood pressure</li> <li>• which decrease the risk of further strokes</li> </ul> <p><b>Medication to lower cholesterol / statins</b></p> <ul style="list-style-type: none"> <li>• taken as tablets</li> <li>• everyday</li> <li>• limited side effects</li> <li>• take time to be effective</li> </ul> <p><i>Mark first two treatments only</i></p> <p><i>Don't credit lifestyle changes or support e.g. physiotherapy and speech therapy, as this is not treatment to manage symptoms or lower the risks of another stroke</i></p>
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Question		Answer/Indicative Content	Marks	Guidance
3	(a)	<p><b>Any four points from (from diagram) :</b></p> <ul style="list-style-type: none"> <li>• muscles in bronchi wall contract ✓</li> <li>• mucus produced ✓</li> <li>• walls/airways become inflamed/thickened ✓</li> <li>• airway/lumen narrows/becomes much smaller than that of a normal bronchus ✓</li> <li>• less air can pass into lungs ✓</li> </ul>	4 (4x1)	<b>ACCEPT</b> any appropriate reasons given for asthma symptoms even if not related to diagram e.g. inflammation of bronchus
3	(b)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (7-8 marks)</b> Detailed evaluation of the treatments for asthma with <b>both</b> positive <b>and</b> negative statements for <b>two</b> treatments.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (4-6 marks)</b> Detailed evaluation of the treatments for asthma with <b>both</b> positive <b>and</b> negative statements for <b>one</b> treatment <b>OR</b> Limited evaluation of the treatments for asthma with <b>either</b> positive <b>or</b> negative statements for <b>two</b> treatments.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1-3 marks)</b> Limited evaluation of the treatments for asthma with <b>EITHER</b> positive <b>OR</b> negative statements. May be descriptive-like approach or list.</p> <p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	8	<p><b>Possible asthma treatments (not exhaustive):</b></p> <p><b>ONLY CREDIT FIRST TWO TREATMENTS E.G. INHALERS AND INJECTIONS</b></p> <p><i>Relievers and preventers credited as the same type of treatment</i></p>

Treatment	Positives	Negatives
Inhalers (general)	<ul style="list-style-type: none"> <li>• easy to use</li> <li>• portable</li> <li>• immediate/fast acting</li> </ul>	<ul style="list-style-type: none"> <li>• can get lost easily</li> <li>• spacers can be difficult to use</li> <li>• requires good inspiratory flow</li> <li>• limited number of uses within an 24 hour period</li> <li>• collecting prescriptions</li> <li>• costs of prescriptions</li> </ul>
Inhalers (preventers)	<ul style="list-style-type: none"> <li>• reduce inflammation</li> <li>• for regular use</li> <li>• use to stop symptoms occurring</li> </ul>	<ul style="list-style-type: none"> <li>• side effects</li> <li>• contain steroids</li> <li>• sore throat</li> </ul>
Inhalers (relievers)	<ul style="list-style-type: none"> <li>• immediate relief of symptoms</li> <li>• relaxes muscles in airway walls</li> </ul>	<ul style="list-style-type: none"> <li>• side effects</li> <li>• increased heart rate</li> <li>• shaking</li> </ul>
Drugs taken as tablets or powders (general)	<p><b>e.g. theophylline</b></p> <ul style="list-style-type: none"> <li>• stops symptoms occurring</li> <li>• can be taken every day</li> </ul>	<ul style="list-style-type: none"> <li>• side effects</li> <li>• head aches</li> <li>• nausea</li> <li>• tablets might be difficult to swallow</li> <li>• collecting prescriptions</li> <li>• costs of prescriptions</li> </ul>
Tablets or powders (LTRA / anti-inflammatory)	<ul style="list-style-type: none"> <li>• reduces inflammation</li> <li>• prevents asthma attacks</li> <li>• non-steroid</li> </ul>	<ul style="list-style-type: none"> <li>• side effects</li> <li>• head aches</li> </ul>
Tablets or powders (steroids / corticosteroids)	<ul style="list-style-type: none"> <li>• immediate treatment</li> <li>• can be taken every day</li> <li>• long term</li> </ul>	<ul style="list-style-type: none"> <li>• side effects</li> <li>• increased appetite</li> <li>• weight gain</li> <li>• mood change</li> <li>• high blood pressure</li> </ul>
Injections (general)	<p><b>e.g. de-sensitising</b></p> <ul style="list-style-type: none"> <li>• used for severe asthma</li> <li>• triggers are identified</li> <li>• control symptoms</li> <li>• given every few weeks</li> </ul>	<ul style="list-style-type: none"> <li>• discomfort with needles</li> <li>• side effects</li> <li>• not suitable for everyone</li> <li>• can only be given by asthma specialist</li> <li>• risk of overdosing</li> <li>• collecting prescriptions</li> <li>• costs of prescriptions</li> </ul>

Question			Answer/Indicative Content	Marks	Guidance										
4	(a)	(i)	<table border="1"> <thead> <tr> <th>Structure</th> <th>Letter</th> </tr> </thead> <tbody> <tr> <td>(buccal cavity)</td> <td><b>Q</b> ✓</td> </tr> <tr> <td>(epiglottis)</td> <td>(S)</td> </tr> <tr> <td>(oesophagus)</td> <td><b>I</b> ✓</td> </tr> <tr> <td>(salivary gland)</td> <td><b>R</b> ✓</td> </tr> </tbody> </table>	Structure	Letter	(buccal cavity)	<b>Q</b> ✓	(epiglottis)	(S)	(oesophagus)	<b>I</b> ✓	(salivary gland)	<b>R</b> ✓	3 (3x1)	If <b>TWO</b> answers given in a space 0 marks
Structure	Letter														
(buccal cavity)	<b>Q</b> ✓														
(epiglottis)	(S)														
(oesophagus)	<b>I</b> ✓														
(salivary gland)	<b>R</b> ✓														
4	(a)	(ii)	<p><b>Structure</b>  <b>ANY ONE FROM:</b></p> <ul style="list-style-type: none"> <li>flap of cartilage ✓</li> <li>flap of tissue ✓</li> </ul> <p><b>Function</b>  <b>ANY ONE FROM:</b></p> <ul style="list-style-type: none"> <li>covers the opening to the windpipe/trachea when swallowing ✓</li> <li>prevents food entering the windpipe/trachea when swallowing ✓</li> <li>prevents choking ✓</li> </ul>	2 (2x1)	<p><b>ONE</b> mark for structure and <b>ONE</b> mark for function</p> <p>Flap alone is a BOD</p> <p>Prevents food entering lungs BOD</p>										
4	(b)		<p><b>ANY THREE STATEMENTS FROM:</b></p> <ul style="list-style-type: none"> <li>mechanical digestion/breakdown ✓</li> <li>chewing of food by teeth ✓</li> <li>pieces of food made into smaller pieces ✓</li> <li>mixing of food with saliva/moistens food ✓</li> <li>making it easier to swallow ✓</li> <li>form a bolus ✓</li> <li>swallowing into oesophagus ✓</li> <li>oesophagus peristalsis/passes food to stomach ✓</li> <li>chemical digestion/breakdown ✓</li> <li>salivary glands produce salivary amylase</li> <li>enzyme/salivary amylase breaks down starch/carbohydrates ✓</li> </ul>	3 (3x1)											

Question			Answer/Indicative Content	Marks	Guidance
4	(c)	(i)	<b>ANY ONE SYMPTOM FROM:</b> <ul style="list-style-type: none"> <li>• stomach pain / cramps ✓</li> <li>• diarrhoea ✓</li> <li>• constipation ✓</li> <li>• bloating / swelling of stomach ✓</li> <li>• flatulence ✓</li> <li>• sudden need to go to the toilet ✓</li> </ul>	1 (1x1)	If TWO answers given, mark first only
4	(c)	(ii)	<b>ANY ONE CAUSE FROM:</b> <ul style="list-style-type: none"> <li>• eating triggers ✓</li> <li>• stress ✓</li> <li>• sensitive gut ✓</li> <li>• infection of large intestines ✓</li> <li>• disruption of chemical balance of large intestines ✓</li> </ul>	1 (1x1)	<b>ACCEPT</b> named foods that are common trigger for IBS e.g., coffee, as long some qualification e.g., “gut sensitive to coffee” or “fatty foods that irritate the intestines”  <b>DO NOT ACCEPT</b> just named food e.g. dairy products
4	(c)	(iii)	<b>ANY ONE TREATMENT / LIFESTYLE CHANGE FROM:</b> <ul style="list-style-type: none"> <li>• restricted diet ✓</li> <li>• avoiding stress ✓</li> <li>• avoid eating trigger foods ✓</li> <li>• probiotics ✓</li> <li>• medication e.g. to relax bowel / antispasmodics / laxatives / antidiarrhoeal ✓</li> <li>• low fibre diet/reduce fibre from diet</li> </ul>	1 (1x1)	Changing diet/healthy diet TV  <b>ACCEPT</b> named drugs e.g. loperamide (anti-diarrhoeal)  Medication alone is too vague
4	(d)	(i)	<u>movement of digested nutrients into body cells to become part of the cells</u> ✓	1	If more than <b>ONE</b> box ticked 0 marks

Question			Answer/Indicative Content	Marks	Guidance
4	(d)	(ii)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (7-8 marks)</b> Detailed discussion of main breakdown functions of liver includes detail of removing <b>excess, toxic AND unwanted</b> products.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (4-6 marks)</b> Sound discussion of <b>two</b> of these breakdown functions of liver.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–3 marks)</b> Sound discussion of <b>one</b> breakdown function of liver. <b>OR</b> Simple list of breakdown functions.</p> <p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	8	<p><b>Possible details for liver functions some may split across the three functions (not exhaustive):</b></p> <p><b>Breakdown of excess products e.g.</b></p> <ul style="list-style-type: none"> <li>• deamination</li> <li>• breakdown amino acids</li> <li>• produces ammonia</li> <li>• ammonia is toxic</li> <li>• assimilation</li> <li>• excess glucose converted to glycogen and stored</li> </ul> <p><b>Breakdown of toxic products e.g.</b></p> <ul style="list-style-type: none"> <li>• breaks down ammonia (from deamination)</li> <li>• ammonia converted to urea</li> <li>• urea taken to kidneys</li> <li>• forms less toxic compounds</li> <li>• detoxification</li> <li>• performed by hepatocytes</li> <li>• removes alcohol from blood</li> <li>• breaks down alcohol</li> <li>• products of alcohol breakdown used in cell respiration</li> <li>• breaks down drugs e.g. paracetamol</li> </ul> <p><b>Breakdown of unwanted products e.g.</b></p> <ul style="list-style-type: none"> <li>• bile production</li> <li>• bile stored in gall bladder</li> <li>• bile used in digestive system</li> <li>• bile emulsifies fats</li> <li>• breakdown of old red blood cells</li> <li>• performed by Kupffer cells</li> <li>• haemoglobin recycled by hepatocytes</li> </ul>

Question		Answer/Indicative Content		Marks	Guidance
4	(e)			4 (4x1)	<b>ACCEPT:</b> Yes/no, tick/cross, T/F for true/false  If <b>TWO</b> answers given in a space 0 marks
		<b>Statement</b>	<b>True or False</b>		
		(Collecting ducts of kidney nephrons have a role in osmoregulation.)	True ✓		
		(Ultrafiltration takes place in the Bowman's capsule of kidney nephrons.)	True ✓		
		(Urea is reabsorbed back into the blood as it passes through kidney nephrons.)	False ✓		
(Ureters carry urine from the kidneys to the bladder.)	True ✓				

Question	Answer/Indicative Content	Marks	Guidance
4 (f)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5-6 marks)</b> Detailed explanation of possible causes for nephrotic syndrome. <b>AND</b> includes explanation of biological causes and risk factors.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3-4 marks)</b> Sound explanation of possible biological causes for nephrotic syndrome <b>AND</b> mention of a risk factor.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–2 marks)</b> Limited explanation of possible biological causes for nephrotic syndrome <b>OR</b> risk factors.</p> <p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>	6	<p><b>Possible causes of nephrotic syndrome (not exhaustive):</b></p> <p><b>Biological causes explanation:</b></p> <ul style="list-style-type: none"> <li>• kidneys malfunction</li> <li>• kidney disease affects ultrafiltration</li> <li>• loss of protein in urine</li> <li>• proteinuria</li> <li>• low protein levels in blood</li> </ul> <p><b>Risk factors</b></p> <p>e.g. genetics</p> <ul style="list-style-type: none"> <li>• caused by inherited faulty gene</li> </ul> <p>e.g. from infection</p> <ul style="list-style-type: none"> <li>• result of HIV</li> <li>• result of hepatitis</li> <li>• result of syphilis</li> </ul> <p>e.g. result of diabetes</p> <p>e.g. results of sickle cell anaemia</p> <p>e.g. result of cancer</p> <ul style="list-style-type: none"> <li>• cause damage to kidneys</li> </ul> <p>e.g. high blood pressure</p> <p>e.g. age</p> <ul style="list-style-type: none"> <li>• often first presents in childhood</li> </ul>



Question		Answer/Indicative Content	Marks	Guidance
5	(a)	<u>pivot</u> ✓	1 (1x1)	<b>ACCEPT</b> phonetic spelling If <b>TWO</b> answers given mark the first response
5	(b) (i)	<u>muscle</u>	1 (1x1)	If <b>TWO</b> answers given in a space 0 marks
5	(b) (ii)	<u>synovial fluid</u> ✓	1 (1x1)	If <b>TWO</b> answers given in a space 0 marks
5	(b) (iii)	<u>Cartilage</u> <b>OR</b> <u>synovial fluid</u> ✓ <b>OR</b> <u>synovial capsule</u> ✓	1 (1x1)	<b>ACCEPT EITHER ANSWER</b> If <b>TWO</b> answers given in a space 0 marks
5	(b) (iv)	<u>tendon</u> ✓	1 (1x1)	If <b>TWO</b> answers given in a space 0 marks
5	(c)*	<p>Please refer to the marking instructions on page 8 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5-6 marks)</b> Detailed explanation of causes of arthritis linked to symptoms.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3-4 marks)</b> Sound explanation of causes of arthritis, but not clearly linked to symptoms.</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–2 marks)</b> Limited explanation of causes of arthritis</p> <p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> No response or no response worthy of credit.</p>	6	<p><b>Possible causes of arthritis symptoms (not exhaustive):</b></p> <ul style="list-style-type: none"> <li>• wear and tear of joint/excessive exercise</li> <li>• loss of cartilage</li> <li>• bone rubbing on bone</li> <li>• loss of space between bones</li> <li>• loss of synovial fluid</li> <li>• bone growths</li> <li>• inflammation</li> <li>• deterioration of tendons</li> <li>• deterioration of ligaments</li> <li>• injury</li> <li>• obesity</li> <li>• surgery</li> <li>• old age</li> </ul> <p><i>L3 must link causes to symptoms e.g. “loss of cartilage causes bone to rub against bone causing a grating noise when bending the knees”</i></p>

Question		Answer/Indicative Content	Marks	Guidance
5	(d)	<p><b>ANY ONE TREATMENT AND OUTLINE FROM:</b></p> <ul style="list-style-type: none"> <li>• medication e.g. anti-inflammatories to reduce inflammation ✓ ✓</li> <li>• medication e.g. painkillers to reduce pain ✓ ✓</li> <li>• injections e.g. corticosteroids to reduce swelling ✓ ✓</li> <li>• physiotherapy e.g. exercises to strengthen muscles around joint/increase mobility of the joint ✓ ✓</li> <li>• surgery e.g. arthroscopy to clean the joint ✓ ✓</li> <li>• surgery e.g. joint replacement ✓ ✓</li> </ul>	<p><b>2</b> <b>(2x1)</b></p>	<p><b>TWO MARKS:</b> named treatment <b>AND</b> clear outline</p> <p><b>ONE MARK:</b> Identification of treatment only e.g. medication / surgery</p> <p>If treatment is wrong, don't accept explanation</p> <p>Surgery and medication alone is TV</p> <p>Don't accept supports e.g. mobility aids</p>

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