

**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
05830 – 05833

Mark Scheme for January 2020

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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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Annotations – These are the annotations to be used when marking Unit 4:

Annotation	Meaning
	Tick – correct answer
	Cross – incorrect answer
	Plus – use for positives
	Minus – use for negatives
	Level 1
	Level 2
	Level 3
	Benefit of doubt (This does count as a mark – so do not ‘tick’ as well)
	Omission mark
	Too vague
	Repeat
 or 	Noted but no credit given

Question		Answer	Marks	Guidance										
1	(a)	<p>One mark for each correct answer, three required. First row has been done for them</p> <table border="1"> <thead> <tr> <th>Structure</th> <th>Letter</th> </tr> </thead> <tbody> <tr> <td>bicuspid valve</td> <td>C</td> </tr> <tr> <td>left ventricle</td> <td>D</td> </tr> <tr> <td>semilunar valve</td> <td>G</td> </tr> <tr> <td>a pulmonary artery</td> <td>B</td> </tr> </tbody> </table>	Structure	Letter	bicuspid valve	C	left ventricle	D	semilunar valve	G	a pulmonary artery	B	<p>3 (3x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross</p> <p>No other answers are acceptable.</p> <p>DO NOT ALLOW multiple letters given in a box</p> <p>If more than 1 letter is provided in each answer box: 0 marks</p>
Structure	Letter													
bicuspid valve	C													
left ventricle	D													
semilunar valve	G													
a pulmonary artery	B													

Question			Answer	Marks	Guidance
1	(b)	(i)	<p>One mark for correct answer</p> <ul style="list-style-type: none"> Sinoatrial node/SAN 	1 (1x1)	<p>Annotation: The number of ticks must match the number of marks awarded. For incorrect answers use the cross</p>
1	(b)	(ii)	<p>One mark for correct answer</p> <ul style="list-style-type: none"> Atrioventricular node/AVN 	1 (1x1)	<p>No other answers are acceptable.</p> <p>Annotation: The number of ticks must match the number of marks awarded.</p>
1	(b)	(iii)	<p>One mark for correct answer</p> <ul style="list-style-type: none"> Sinoatrial node/SAN 	1 (1x1)	<p>For incorrect answers use the cross.</p> <p>No other answers are acceptable.</p>
1	(b)	(iv)	<p>One mark for correct answer</p> <ul style="list-style-type: none"> Purkyne fibres 	1 (1x1)	<p>If multiple responses are given for each question, mark as incorrect.</p>

Question			Answer	Marks	Guidance
1	(c)	(i)	<p>One mark for correct identification, one required</p> <ul style="list-style-type: none">• Hypertension• Accept High Blood Pressure	<p>1 (1x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>No other answers are acceptable.</p> <p>For incorrect answers use the cross</p> <p>DO NOT ACCEPT CORONARY HEART DISEASE OR ANGINA OR HEART ATTACK (as they are forms of CHD)</p>

Question	Answer/Indicative content	Marks	Guidance	
			Content	Levels of response
1 (c) (ii)*	<p><i>Discuss the options available to monitor and treat CHD. 1(c)(i), You should include medical treatments and lifestyle changes in your answer.</i></p> <p>Monitoring:</p> <ul style="list-style-type: none"> • Blood tests - cholesterol levels, heart attack protein markers, • ECGs – abnormalities in the cardiac cycle • Angiogram – narrowing of coronary arteries • Sphygmomanometer/Blood Pressure Monitor - elevated blood pressure <p>Medical treatments:</p> <ul style="list-style-type: none"> • Statins/Aspirin • Angina pump • Thrombolysis • Anticoagulants • Bypass • Angioplasty/Stent • Beta blockers/ACE inhibitors <p>Lifestyle changes:</p> <ul style="list-style-type: none"> • Regular exercise • Diet changes e.g. low fat / low salt • Reduce stress • Reduce alcohol intake • Stop smoking • Lose weight <p>The term treat refers to medical and/or lifestyle changes</p>	6	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is discuss.</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"> • detailed discussion (clearly discusses the benefits of the monitoring/treatment) • clear knowledge & understanding of how to monitor and treat CHD • explicitly linked to CHD • must cover monitoring, medical treatments and lifestyle changes • appropriate terminology • well-developed line of reasoning • logically structured <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound discussion • some reference to aspects of how to monitor and treat CHD • mostly relevant and accurate information <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic discussion • basic information • limited structure, may be list like or muddled • may not be specifically linked to CHD 	<p>Level 3 [5-6 marks] Answers provide a detailed discussion of how to monitor and treat CHD. Answers will be coherent, factually accurate and use appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [3-4 marks] The answer provides a sound discussion of how to monitor and treat CHD. Answers will be factually accurate. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 3 if only monitoring OR treatment done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic discussion of how to monitor and/or treat CHD. May be a description/ identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit. SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance
1	(d)	<p>One mark for each correct answer, five required.</p> <p>Second one E, already done</p> <p>CE.... B A F D</p>	<p>5 (5x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross</p> <p>No other answers are acceptable.</p> <p>DO NOT ALLOW multiple letters given in a box</p> <p>If more than 1 letter is provided in each answer space: 0 marks</p>

Question		Answer	Marks	Guidance
1	(e)	<p>Four marks for a description, One required.</p> <p>Points can be made from the following depending on choice:</p> <p>EITHER:</p> <p><i>Intercostal muscles:</i></p> <ul style="list-style-type: none"> • Contract • Pull the ribs up and outwards • Increasing volume/size of lungs/thorax/chest • Decreasing the pressure in lungs/thorax/chest <p>OR</p> <p><i>Diaphragm:</i></p> <ul style="list-style-type: none"> • Contract • Flattens • Increasing volume/size of lungs/thorax/chest • Decreasing the pressure in lungs/thorax/chest <p>ONLY CREDIT RESPONSES RELATED TO THE FIRST STRUCTURE THEY IDENTIFY</p>	<p>4 (1x4)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 10px 0;"> ^ TV REP SEEN </div> <p>Four marks: for a detailed description with four points</p> <p>Three marks: for a sound description with three points</p> <p>Two marks: for a basic description using at least two points</p> <p>One mark: for one point</p>

Question		Answer	Marks	Guidance								
2	(a)	<p>One mark for each correct answer, three required.</p> <table border="1"> <thead> <tr> <th>Function</th> <th>Component</th> </tr> </thead> <tbody> <tr> <td>Controls and regulates heart rate.</td> <td>Autonomic nervous system</td> </tr> <tr> <td>Allows transmission of information to and from the brain.</td> <td>Spinal cord</td> </tr> <tr> <td>Transmits impulses from the brain to muscles.</td> <td>Motor neurone</td> </tr> </tbody> </table>	Function	Component	Controls and regulates heart rate.	Autonomic nervous system	Allows transmission of information to and from the brain.	Spinal cord	Transmits impulses from the brain to muscles.	Motor neurone	<p>3 (3x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross</p> <p>No other answers are acceptable.</p> <p>DO NOT ALLOW multiple responses given in a box</p> <p>If more than response is provided in each box: 0 marks</p>
Function	Component											
Controls and regulates heart rate.	Autonomic nervous system											
Allows transmission of information to and from the brain.	Spinal cord											
Transmits impulses from the brain to muscles.	Motor neurone											
2	(b)	(i)	<p>Put a tick (✓) in the box next to the correct symptom.</p> <p>High blood pressure <input type="checkbox"/></p> <p>Unexplained weight loss <input type="checkbox"/></p> <p>Problems with balance and coordination <input checked="" type="checkbox"/></p> <p>Swelling of the hands and feet <input type="checkbox"/></p>	<p>1 (1x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross</p> <p>No other answers are acceptable.</p> <p>If more than one box is ticked: 0 marks</p>							

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
2	(b) (ii)*	<p><i>Discuss the possible causes of multiple sclerosis. Include both biological causes and risk factors in your answer.</i></p> <p>Possible causes (biological):</p> <ul style="list-style-type: none"> • autoimmune disease • immune system attacks myelin sheath • myelin sheath in CNS affected (in brain and/ or spinal cord) • myelin sheath inflamed • myelin sheath damaged / destroyed • disrupts/slows transmission of impulses • scar tissue • permanent damage to neurones • Relapsing and remitting <p>Possible causes (risk factors):</p> <ul style="list-style-type: none"> • Genetic predisposition • Female • Viral infections • Smoking • Lack of sunlight/vitamin D • other relevant examples 	6	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is discuss.</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"> • detailed discussion • clear knowledge & understanding of biological causes of MS and of risk factors. • appropriate terminology • well-developed line of reasoning • logically structured <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound discussion • some reference to both biological causes and risk factors • mostly relevant and accurate information <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic discussion • basic information • limited structure, may be list like or muddled 	<p>Level 3 [5-6 marks] Answers provide a detailed discussion of biological causes of MS and risk factors. Answers will be coherent, factually accurate and use appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [3-4 marks] Answers provide a sound discussion of biological causes of MS and risk factors. Answers will be factually accurate and mostly relevant. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 3 if only one of either biological causes OR risk factors done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic discussion of causes of MS. May be a description/identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit. SEEN for a zero mark response</p>

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
2	(c)*	<p><i>Explain the symptoms of cystic fibrosis.</i></p> <p>Examples with explanations to include:</p> <ul style="list-style-type: none"> • mucus is stickier than usual due to faulty gene/not absorbing water into mucus/trapping of white blood cells in mucus. • problems with breathing because mucus blocks airways • chest infections as pathogens e.g. bacteria get trapped in mucus / airways • persistent cough due to inability to clear mucus • lack of energy due impaired gaseous exchange/poor oxygen saturation of blood. <p><i>Whilst not on the specification accept any explanation of symptoms related to the digestive system or reproduction e.g. weight loss, malnourishment, infertility</i></p>	6	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explain.</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"> • detailed explanation (must say why symptom is caused) • clear knowledge & understanding of causes of at least 2 symptoms of cystic fibrosis • explanation explicitly linked to symptoms of cystic fibrosis • appropriate terminology • well-developed line of reasoning • logically structured <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound explanation • some knowledge & understanding of causes of at least 2 symptoms of cystic fibrosis • mostly relevant and accurate information <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic explanation • basic information • limited structure, may be list like or muddled 	<p>Level 3 [5-6 marks] Answers provide a detailed explanation of symptoms of cystic fibrosis. Answers will be coherent, factually accurate and use appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [3-4 marks] The answer provides a sound explanation of symptoms of cystic fibrosis. Answers will be factually accurate and mostly relevant. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 3 if one symptom done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic explanation of symptoms of cystic fibrosis. May be a description or identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit. SEEN for a zero mark response</p>

Question			Answer	Marks	Guidance
3	(a)	(i)	<p>One mark for correct name.</p> <ul style="list-style-type: none"> homeostasis 	<p>1 (1x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross</p> <p>No other answers are acceptable.</p>
3	(a)	(ii)	<p>One mark for a correct identification. Three required.</p> <p>A - choose one point from:</p> <ul style="list-style-type: none"> glucose concentration increases too much glucose in blood <p>B - choose one point from:</p> <ul style="list-style-type: none"> glucose is converted to glycogen glucose level in blood decreases glucose enters cells of the body glucose level in blood returns to normal <p>C - choose one point from:</p> <ul style="list-style-type: none"> glucose concentration decreases not enough glucose in blood 	<p>3 (3x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>Accept sugar as a term for glucose</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> ^ TV REP SEEN </div> <p>Answers must apply to correct lettered stage</p> <p>One mark for one correct point in each stage</p>

Question	Answer	Marks	Guidance
3 (b)	<p>One mark for a correct word, five required.</p> <p>The answers must be given as ordered below to complete the sentences in the passage</p> <p>The kidney has two main functions: <u>osmoregulation</u> which maintains the concentration of water and ions in the blood, and <u>excretion</u> which removes metabolic waste from the body.</p> <p>The waste product <u>urea</u> is formed in the liver and transported in the blood to the kidneys where it forms urine. Urine is carried from each kidney, through a tube called the <u>ureter</u> to the bladder, where it is stored.</p> <p>The kidneys put substances, such as glucose, back into the blood by the process of <u>reabsorption</u>.</p>	<p>5 (5x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> ^ TV REP SEEN </div> <p>If more than response is provided in each answer space: 0 marks</p>

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
3	(c)*	Evaluate <i>two</i> possible treatments for these symptoms of nephrotic syndrome.	8	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is evaluate. 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"> • two treatments (must link to symptoms) • fully detailed evaluation • both positives and negatives • well-developed, clear and logically structured • factually accurate & relevant • correct use of terminology <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • two treatments • sound evaluation • both positives and negatives of at least one treatment • mostly relevant and accurate information • Sub-max of 4 for one treatment done well. <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic evaluation • basic information • positive or negative aspect of one treatment • limited structure, may be list like or muddled 	<p>Level 3 [6-8 marks] Answers provide a detailed evaluation of two possible treatments using accurate terminology and following a logical sequence. Both positives and negatives will be given. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [4-5 marks] Answer provides a sound evaluation of two possible treatments. Positive and negative for at least one treatment. Answers will be factually accurate and relevant. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 4 for one treatment with positive and negatives.</p> <p>Level 1 [1-3 marks] Answer provides a limited or basic evaluation with either positive or negative aspect of treatment. May be a description / identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit.</p>

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
					SEEN for a zero mark response

Answer/Indicative content		
Examples	Positive	Negatives
Steroids <ul style="list-style-type: none"> e.g. prednisolone. Reduces protein in urine and swelling 	<ul style="list-style-type: none"> prevents protein leaking from kidneys. reduces fluid build up / swelling. 	<ul style="list-style-type: none"> suppress immune system weight gain mood changes
Diuretics <ul style="list-style-type: none"> e.g. 'water tablets' Reduces swelling 	<ul style="list-style-type: none"> reduces fluid build up / swelling. no serious side effects. 	<ul style="list-style-type: none"> increases amount of urine may cause bed-wetting in children
Antibiotics <ul style="list-style-type: none"> e.g. penicillin Treats constant infections 	<ul style="list-style-type: none"> treats infections quicker recovery from infection 	<ul style="list-style-type: none"> only treats bacterial infection short term use only
Dietary changes <ul style="list-style-type: none"> e.g. low salt/processed food reduces swelling 	<ul style="list-style-type: none"> prevents water retention and swelling 	<ul style="list-style-type: none"> difficult to control diet
Vaccinations <ul style="list-style-type: none"> e.g. for flu constant infections 	<ul style="list-style-type: none"> prevents children getting further infections 	<ul style="list-style-type: none"> needle phobia vaccination not always successful Parental concerns (autism)
Kidney transplant <ul style="list-style-type: none"> could help with all symptoms 	<ul style="list-style-type: none"> Kidney functioning normally No/less protein loss from blood Reduces swelling 	<ul style="list-style-type: none"> not suitable for many children major operations involve risks post-operative care required transplants will need immunosuppressants scarring rejection requires donor
Aspirin/Blood thinners/anti platelets <ul style="list-style-type: none"> Reduces blood clots 	<ul style="list-style-type: none"> Reduces blood clots Less pain from blood clots Quick, cheap and non-invasive treatment 	<ul style="list-style-type: none"> Can cause stomach problems Must be monitored Organisation in getting children to take daily medication

Accept any other suitable treatments

Question	Answer/Indicative content	Marks	Guidance	
			Content	Levels of response
4 (a)*	<p><i>Explain the possible causes of Mia's osteoarthritis and the effects it is likely to have on her.</i></p> <p>Possible causes of osteoarthritis (not exhaustive):</p> <ul style="list-style-type: none"> • Wear and tear of joints • Age • Obesity/overweight • Excessive physical activity • Sporting injury • Surgery on the joint • Family history • Other conditions - rheumatoid arthritis <p>Effects:</p> <ul style="list-style-type: none"> • loss of cartilage • bones rub against each other • development of bone growths or 'spurs' • stiff • painful joints • loss of joint space • reduced mobility <p>Accept other relevant examples</p> <p>DO NOT CREDIT WELL-BEING/DAILY LIFE RESPONSES, AS THIS WAS NOT REQUIRED BY THE QUESTION</p>	6	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is explain.</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"> • detailed explanation • clear knowledge & understanding of causes and effects of osteoarthritis. • appropriate terminology • well-developed line of reasoning • logically structured <p>Level 2 – checklist:</p> <ul style="list-style-type: none"> • sound explanation • some reference to aspects of causes and effects of osteoarthritis • mostly relevant and accurate information • Sub-max of 3 if only causes or only effects of osteoarthritis <p>Level 1 – checklist</p> <ul style="list-style-type: none"> • limited / basic explanation • basic information • limited structure, may be list like or muddled 	<p>Level 3 [5-6 marks] Answers provide a detailed explanation of causes and effects of osteoarthritis. Answers will be coherent, factually accurate and use appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [3-4 marks] Answers provide a sound explanation of causes and effects of osteoarthritis. Answers will be factually accurate and mostly relevant. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 3 if only causes or only effects of osteoarthritis done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic explanation of causes and effects of osteoarthritis. May be a description / identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit.</p>

Question		Answer	Marks	Guidance															
4	(b)	<p>One mark for each correct answer, four required.</p> <table border="1"> <thead> <tr> <th>Statement</th> <th>True (T)</th> <th>False (F)</th> </tr> </thead> <tbody> <tr> <td>Taking vitamin D and calcium supplements.</td> <td></td> <td>False or F</td> </tr> <tr> <td>Taking steroids to reduce inflammation and swelling.</td> <td>True or T</td> <td></td> </tr> <tr> <td>Surgery to replace a joint.</td> <td>True or T</td> <td></td> </tr> <tr> <td>Physiotherapy to strengthen muscles.</td> <td>True or T</td> <td></td> </tr> </tbody> </table>	Statement	True (T)	False (F)	Taking vitamin D and calcium supplements.		False or F	Taking steroids to reduce inflammation and swelling.	True or T		Surgery to replace a joint.	True or T		Physiotherapy to strengthen muscles.	True or T		<p>4 (4x1)</p>	<p>Accept ticks or crosses in the relevant boxes</p> <p>Annotation: The number of ticks must match the number of marks awarded. For incorrect answers use the cross.</p> <p>No other answers are acceptable.</p> <p>If more than box is ticked per statement: 0 marks</p>
Statement	True (T)	False (F)																	
Taking vitamin D and calcium supplements.		False or F																	
Taking steroids to reduce inflammation and swelling.	True or T																		
Surgery to replace a joint.	True or T																		
Physiotherapy to strengthen muscles.	True or T																		
4	(c)	<p>One mark for each correct identification, three required.</p> <p>Last row has been done for them</p> <table border="1"> <thead> <tr> <th>Structure</th> <th>Letter</th> </tr> </thead> <tbody> <tr> <td>haversian canals</td> <td>X</td> </tr> <tr> <td>bone cells (osteocytes)</td> <td>Z</td> </tr> <tr> <td>canaliculi</td> <td>Y</td> </tr> </tbody> </table>	Structure	Letter	haversian canals	X	bone cells (osteocytes)	Z	canaliculi	Y	<p>3 (3x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded. For incorrect answers use the cross.</p> <p>No other answers are acceptable.</p> <p>If more than one answer is provided in each box: 0 marks</p>							
Structure	Letter																		
haversian canals	X																		
bone cells (osteocytes)	Z																		
canaliculi	Y																		

Question		Answer	Marks	Guidance
4	(d)	<p>Points can be made from the following:</p> <ul style="list-style-type: none"> • has villi/microvilli - increased surface area for absorption and/or swaying action • lacteals inside villi - fat products can enter lymphatic system (lacteals) • Large capillary network - has blood supply for absorbing nutrients • Thin walls/One cell thick/short diffusion pathway - nutrients can diffuse easily 	<p>4 (2x2)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> ^ TV REP SEEN </div> <p>Two marks: for a detailed explanation e.g. has villi which increases the surface area</p> <p>One mark: for a basic explanation e.g. has villi or has large surface area</p>

Question			Answer	Marks	Guidance
4	(e)	(i)	<p>One mark for each correct answer, two required</p> <ul style="list-style-type: none"> • pain/cramps • diarrhoea/needing the toilet constantly • constipation • bloating • flatulence/wind <p>Accept any other correct response</p>	<p>2 (2x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> ^ TV REP SEEN </div>
4	(e)	(ii)	<p>One mark for each correct point made, two required</p> <ul style="list-style-type: none"> • intestine is sensitive (to certain foods/triggers) • walls of large intestines go into spasm • food moves too slowly through digestive system (causing constipation) • food moves too quickly through digestive system (causing diarrhoea) • lack of fibre in the diet • stress • previous digestive illness • family history 	<p>2 (1x2)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> ^ TV REP SEEN </div>

Question	Answer/Indicative content	Marks	Guidance	
			Content	Levels of response
4	(f)* <i>Analyse the use of the various techniques listed above.</i> Ultrasound <ul style="list-style-type: none"> • Uses gel, apparatus pressed on skin and image displayed on a screen • sound waves bounce back to show images of organs • can detect blockages e.g. gall stones Endoscopy <ul style="list-style-type: none"> • e.g. gastroscopy • e.g. colonoscopy • long flexible tube inserted into body through mouth or anus • camera on one end • can detect causes of pain e.g. spasms IBS and gallstones • can detect abnormalities to intestinal wall e.g. taking a biopsy in coeliac's disease Lithotripsy <ul style="list-style-type: none"> • high frequency soundwaves/shockwaves • local anaesthetic/epidural • used to break down/shatter gall stones • uses fluoroscopy (X-rays) to obtain real-time moving images 	8	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is analyse</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"> • Covers all three techniques and treatments and links to malfunctions • fully detailed analysis (makes valid judgements) • well-developed, clear and logically structured • factually accurate & relevant • correct use of terminology <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • Covers two techniques and treatments and may link to malfunctions • sound analysis (makes some judgements) • mostly relevant and accurate information • Sub-max of 4 for only one technique or treatment done well. <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • Covers one technique • limited / basic analysis • basic information • limited structure, may be list like or muddled 	<p>Level 3 [7-8 marks] Answers provide a detailed analysis of all techniques and treatments applied to appropriate malfunctions using accurate terminology and following a logical sequence. Sentences and paragraphs are relevant with accurate use of appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [4-6 marks] The answer provides a sound analysis of two techniques/ treatments. Answers will be factually accurate. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 4 for one technique or treatment done well.</p> <p>Level 1 [1-3 marks] Answer provides a limited or basic analysis. May be a description / identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit. SEEN for a zero mark response</p>

Question			Answer	Marks	Guidance
5	(a)	(i)	One mark for correct identification • humour	1 (1x1)	Annotation: The number of ticks must match the number of marks awarded. For incorrect answers use the cross . No other answers are acceptable. If more than one answer is provided for each question: 0 marks
		(ii)	One mark for correct identification • retina	1 (1x1)	
		(iii)	One mark for correct identification • ciliary	1 (1x1)	
		(iv)	One mark for correct identification • cornea	1 (1x1)	

Question	Answer / Indicative content	Marks	Guidance	
			Content	Levels of response
5	<p>(b)*</p> <p><i>Describe the possible effects of AMD on Jack's vision and how they could be monitored.</i></p> <p>Examples with descriptions to include: effects</p> <ul style="list-style-type: none"> • destruction of the retina • loss of central vision • gets worse over time • dry develops slowly • wet (vessels leak fluid) develops quickly • blurred vision/straight lines appear wavy • hallucinations • objects may look smaller than they are • faded colours • limits everyday activities e.g. driving, reading and writing <p>Monitoring</p> <ul style="list-style-type: none"> • regular scans/examinations/tests • see ophthalmologist/eye specialist • regular visits to eye clinic • Diabetes check ups <p>DO NOT CREDIT WELL-BEING/DAILY LIFE RESPONSES, AS THIS WAS NOT REQUIRED BY THE QUESTION</p>	6	<p>This is a levels of response question – marks are awarded on the quality of the response given. The focus of the question is describe.</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"> • detailed description • clear knowledge & understanding of aspects of effects of AMD • explanation explicitly linked to effects of AMD and monitoring • appropriate terminology • well-developed line of reasoning • logically structured <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound description • some reference to aspects of effects of AMD and monitoring • mostly relevant and accurate information <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic description • basic information • limited structure, may be list like or muddled 	<p>Level 3 [5-6 marks] Answers provide a detailed description of effects of AMD and monitoring. Answers will be coherent, factually accurate and use appropriate terminology. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</p> <p>Level 2 [3-4 marks] The answer provides description of effects of AMD and monitoring. Answers will be factually accurate and mostly relevant. There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence. Sub-max of 3 for effects or monitoring done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic description of effects of AMD and monitoring. May be identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance
5	(c)	<p>One mark for each correct answer, five required.</p> <p>The answers must be given as ordered below to complete the sentences in the passage</p> <p>The brain is protected by the skull and tough membranes called <u>meninges</u>. It is divided into two cerebral hemispheres connected by a bridge called the <u>corpus callosum</u>.</p> <p>The outermost layer of the brain is called the cerebral cortex, which is responsible for <u>thinking</u> and decision-making.</p> <p>Important functions, such as breathing and swallowing, are controlled by the <u>medulla oblongata</u> which is found at the base of the brain where it meets the spinal cord.</p> <p>The cerebellum has a role in coordinating muscle activity and in maintaining <u>balance</u>.</p>	<p>5 (5x1)</p>	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross.</p> <p>If more than response is provided in each answer space: 0 marks</p>

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