

**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 June 2019

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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

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 identification, four 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>anus</td> <td>E</td> </tr> <tr> <td>pancreas</td> <td>B</td> </tr> <tr> <td>stomach</td> <td>A</td> </tr> <tr> <td>large intestine</td> <td>F</td> </tr> <tr> <td>gall bladder</td> <td>G</td> </tr> </tbody> </table>	Structure	Letter	anus	E	pancreas	B	stomach	A	large intestine	F	gall bladder	G	4 (4x1)	<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 given in a box: 0 marks</p>
Structure	Letter																
anus	E																
pancreas	B																
stomach	A																
large intestine	F																
gall bladder	G																
1	(b)	(i)	<p>One mark for the correct name, one required.</p> <ul style="list-style-type: none"> Bile duct 	1 (1x1)	<p>No other answers are acceptable.</p> <p>ALLOW 'bile'</p> <p>If multiple responses are provided credit the first response only</p>												

Question			Answer	Marks	Guidance
1	(b)	(ii)	<p>One mark for correct answer, one required.</p> <ul style="list-style-type: none"> • emulsify fats (lipids) • make the fluid of the small intestine (chyme) alkaline • raise the pH of the fluid in the small intestine (chyme) • neutralise the acidic fluid leaving the stomach (chyme) • Activate/increase efficiency of enzymes (lipase, amylase etc) 	<p>1 (1x1)</p>	<p>allow breakdown fats/help digest fats</p>
1	(c)	(i)	<p>One mark for identification of a symptom. One required.</p> <ul style="list-style-type: none"> • a high temperature • nausea/vomiting • inflammation • sweating • rapid heartbeat • yellowing of the skin and whites of the eyes/jaundice • itchy skin • a loss of appetite • Diarrhoea • Chills/shivering • Constipation • Bloating 	<p>1 (1x1)</p>	<p>Other appropriate symptoms to discuss at SSU</p> <p>DO NOT ACCEPT PAIN AS IT IS IN THE QUESTION</p> <p>If multiple responses are provided credit the first response ONLY</p>

Question			Answer/Indicative content	Marks	Guidance	
					Content	Levels of response
1	(c)	(ii)*	<p><i>Describe possible causes for the development of gallstones and how these lead to abdominal pain.</i></p> <p>Possible causes (risk factors):</p> <ul style="list-style-type: none"> • obesity • cirrhosis • age (some reference to being older/over 40) • female • family history • IBS • Crohn's disease • other relevant examples <p>Possible causes (physiological):</p> <ul style="list-style-type: none"> • imbalance of chemicals inside gall bladder • e.g. high levels of cholesterol • e.g. high levels of breakdown products such as bilirubin • small crystals develop (in fluid / bile) • crystals grow bigger <p>Reasons for abdominal pain:</p> <ul style="list-style-type: none"> • inflammation of gall bladder • gallstones block bile duct • build-up of fluid / bile in gall bladder • Contraction of gall bladder • infection 	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 causes of gallstones and how they lead to abdominal pain. • correct use of appropriate terminology • well-developed line of reasoning • logically structured • QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound description • may or may not refer to how they lead to abdominal pain • mostly relevant and accurate information • QWC - mid <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic description • basic information • limited structure, may be list like or muddled • QWC – low <p>Note: Do not credit any response referring to kidney stones, even if the risk factors etc are correct</p>	<p>Level 3 [5-6 marks] Answers provide a detailed description of possible causes of gallstones and how they lead to abdominal pain. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [3-4 marks] Answer provides a sound description of cause of gallstones. May refer to how they lead to abdominal pain. Answers will be factually accurate and relevant. There may be some errors of grammar, punctuation and spelling. Sub-max of 3 if only causes OR risks given.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic description of cause of gallstones and/or how they lead to abdominal pain. May be identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance
1	(d)	<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> <ol style="list-style-type: none">1. glycogen2. assimilation3. erythrocytes4. deamination5. detoxification	5 (5x1)	<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>If more than one response is given in a space mark as incorrect</p>

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
1	(e)*	<p><i>Explain treatments and lifestyle changes that are advised for people who have been diagnosed with Type II diabetes</i></p> <p>Examples with explanations to include:</p> <p>Treatments</p> <ul style="list-style-type: none"> • medications to control blood sugar levels (medication alone is too vague) • medications to stimulate pancreas to produce more insulin (medication alone is too vague) • insulin but only used in later stages of type II diabetes where the pancreas is no longer producing insulin (insulin alone is too vague). <p>Lifestyle changes</p> <ul style="list-style-type: none"> • Taking regular exercise which helps use glucose in blood/lowers blood sugar levels. • Regular exercise would use carbohydrates • Losing weight as obesity is risk factor for diabetes • Low carbohydrate/sugar diet so less insulin required • Increase intake of vegetables and other foods high in dietary fibre • Reducing the amount of saturated fat in the diet reduces obesity risk factor • Reduce alcohol as it is high in sugar/calories 	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 aspects of both treatments and lifestyle changes • Must cover at least 2 treatments and 2 lifestyle changes • well-developed line of reasoning • logically structured • QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound explanation • some reference to aspects of at least 1 treatment and 1 lifestyle change. • For at least 1 lifestyle change they must say how it helps • mostly relevant and accurate information • QWC - mid <p>Level 1 checklist:</p> <ul style="list-style-type: none"> • limited / basic explanation • basic information • limited structure, may be list like or muddled e.g. exercise regularly, eat healthily • QWC – low 	<p>Level 3 [5-6 marks] Answers provide a detailed explanation of treatments and lifestyle changes. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [3-4 marks] Answer provides a sound explanation of treatments and lifestyle changes. Answers will be factually accurate and relevant. There may be some errors of grammar, punctuation and spelling. Sub-max of 3 if only treatment OR lifestyle changes.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic explanation of treatments and lifestyle changes. May be a description / identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance								
2	(a)	<p>One mark for a correct answer, three required.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Structure</th> </tr> </thead> <tbody> <tr> <td>The airway that extends from the mouth to the lungs. Also known as the windpipe.</td> <td>trachea</td> </tr> <tr> <td>A membrane that covers each lung and provides a lining for the ribcage.</td> <td>pleural</td> </tr> <tr> <td>A muscle that separates the chest cavity (thorax) from the digestive system.</td> <td>diaphragm</td> </tr> </tbody> </table>	Description	Structure	The airway that extends from the mouth to the lungs. Also known as the windpipe.	trachea	A membrane that covers each lung and provides a lining for the ribcage.	pleural	A muscle that separates the chest cavity (thorax) from the digestive system.	diaphragm	<p>3 (3x1)</p>	<p>No other answers are acceptable.</p> <p>DO NOT ALLOW multiple letters words in a box, only accept first word written in box</p> <p>If multiple responses are given in a box, mark as incorrect.</p>
Description	Structure											
The airway that extends from the mouth to the lungs. Also known as the windpipe.	trachea											
A membrane that covers each lung and provides a lining for the ribcage.	pleural											
A muscle that separates the chest cavity (thorax) from the digestive system.	diaphragm											
2	(b)	(i)	<p>One mark a way, one required.</p> <ul style="list-style-type: none"> • Thin wall • Wall only one cell thick • Wall made of flattened cells • Wall made of squamous epithelium • Inner surface is moist • surface coated with watery fluid/fluid lined • Large surface area 	<p>1 (1x1)</p> <p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>Thin alone is too vague, must refer to the wall</p> <p>If multiple responses are provided credit the first response ONLY</p> <p>For incorrect answers use the cross or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: flex; justify-content: space-around; width: fit-content; margin: 0 auto;"> ^ TV REP SEEN </div>								

Question		Answer	Marks	Guidance
2	(b) (ii)	<p>One mark for a description, three required. Description should include any three of the following points. As gases moves from X to Y:</p> <ul style="list-style-type: none"> • Diffusion occurs • Blood at X/capillaries has high concentration of carbon dioxide • Air in Y/alveolus has lower concentration of carbon dioxide than blood • Creating a diffusion/concentration gradient • Gases move from an area of high concentration to an area of low concentration • Carbon dioxide moves out of blood into air down concentration gradient • Blood at X has low concentration of oxygen • Air in alveolus has higher concentration of oxygen than blood • Oxygen moves out of air into blood down concentration gradient • Oxygen binds to haemoglobin to form oxyhaemoglobin 	3 (3x1)	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>Be aware of joint responses in a single sentence e.g. the blood in the capillaries has a higher concentration of carbon dioxide than the air in the alveoli (2 marks)</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;"> <input type="checkbox"/> A <input type="checkbox"/> TV <input type="checkbox"/> REP <input type="checkbox"/> SEEN </div>
	(c) (i)	<p>High blood pressure is a risk factor for emphysema. <input type="checkbox"/></p> <p>Animal fur can trigger emphysema. <input type="checkbox"/></p> <p>Emphysema damages alveoli. <input checked="" type="checkbox"/></p> <p>Smoking cigarettes is not linked to emphysema. <input type="checkbox"/></p>	1 (1x1)	<p>No other answers are acceptable.</p> <p>If more than one box is ticked: 0 marks</p>

Question		Marks	Guidance	
			Content	Levels of response
2	(c) (ii)*	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.</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"> • two treatments • 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"> • 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. • QWC - mid <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 • QWC – low 	<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 will be few, if any, errors of grammar, punctuation and spelling.</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 may be some errors of grammar, punctuation and spelling. 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. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Answer/Indicative content		
Examples	Positive	Negatives
Inhalers/Bronchodilators <ul style="list-style-type: none"> e.g. beta agonist-salbutamol. e.g. beta agonist-salmeterol e.g. (cortico) steroids. 	<ul style="list-style-type: none"> Widen / relax airways. Easy to use You can use them regularly throughout the day Work with immediate effect. Steroid inhalers reduce inflammation of airways Combination can be used to treat breathlessness and inflammation. 	<ul style="list-style-type: none"> Short-acting can only be used maximum up to four times per day. Possible to take higher dose than required. Need to be able to breathe in sufficiently to get the medication
Rehabilitation programme	<ul style="list-style-type: none"> Improve emotional well-being/ Psychological support Educates about the condition Meet others with similar condition Managed exercise programme Dietary advice physiotherapy 	<ul style="list-style-type: none"> Need to attend clinic or hospital so transport required
Surgery e.g. bullectomy and lung transplant	<ul style="list-style-type: none"> Removing damaged part of lung improves function of healthy part Removing air pockets makes breathing easier Replace damaged lungs with fully functioning healthy lung 	<ul style="list-style-type: none"> not suitable for many people major operations involve risks transplants will need immunosuppressants post-operative care required surgery is the problem surrounding the shortage of donors Surgery can leave scarring Donor organs can be rejected
e.g. oxygen therapy	<ul style="list-style-type: none"> Improves oxygen levels in blood Increase mobility/independence Reduce breathlessness 	<ul style="list-style-type: none"> Face mask or nasal tubes Machine needs transporting with patient Cylinders can run out/have to be replaced
e.g. nebulisers	<ul style="list-style-type: none"> Enables large doses to be given 	<ul style="list-style-type: none"> Face mask Machine needs transporting with patient
Quit smoking	<ul style="list-style-type: none"> Slows the progression of the disease Improved gaseous exchange Less mucus in the lungs 	<ul style="list-style-type: none"> Hard to quit May need external support

Accept any other suitable treatments

Question		Answer	Marks	Guidance												
3	(a)	<p>One mark for each correct component, five required.</p> <table border="1"> <thead> <tr> <th>Statement</th> <th>True or False</th> </tr> </thead> <tbody> <tr> <td>The brain is protected by tough membranes called the meninges.</td> <td>True</td> </tr> <tr> <td>The cerebellum is divided into two halves called the cerebral hemispheres.</td> <td>False</td> </tr> <tr> <td>The function of the hypothalamus is to control vital processes such as breathing.</td> <td>False</td> </tr> <tr> <td>One of the functions of the frontal lobes is coordinating speech and language.</td> <td>True</td> </tr> <tr> <td>The corpus callosum connects the two sides of the brain.</td> <td>True</td> </tr> </tbody> </table>	Statement	True or False	The brain is protected by tough membranes called the meninges.	True	The cerebellum is divided into two halves called the cerebral hemispheres.	False	The function of the hypothalamus is to control vital processes such as breathing.	False	One of the functions of the frontal lobes is coordinating speech and language.	True	The corpus callosum connects the two sides of the brain.	True	<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; display: inline-block;"> ^ TV REP SEEN </div> <p>No other answers are acceptable.</p> <p>ALLOW if students write yes or no or give ticks and crosses</p> <p>If multiple responses are given in a box, mark as incorrect.</p>
Statement	True or False															
The brain is protected by tough membranes called the meninges.	True															
The cerebellum is divided into two halves called the cerebral hemispheres.	False															
The function of the hypothalamus is to control vital processes such as breathing.	False															
One of the functions of the frontal lobes is coordinating speech and language.	True															
The corpus callosum connects the two sides of the brain.	True															

Question			Answer/Indicative content	Marks	Guidance	
					Content	Levels of response
3	(b)	(i)*	<p><i>Discuss possible impacts the stroke may have on Stefan's lifestyle and his likely care needs.</i></p> <p>Examples of impact on lifestyle to include:</p> <ul style="list-style-type: none"> • weakness or paralysis along one side of your body • mobility difficulties • muscle spasms • difficulty driving • sexual dysfunction • vision changes • difficulty swallowing • speech loss • inability to make small, precise movements • poor balance • It might be harder to do usual activities. • Mental challenges e.g. following instructions • memory loss • personality changes • it could be harder to do his job • emotional changes e.g. may feel frustrated or angry or depressed <p>Examples of likely care needs to include:</p> <ul style="list-style-type: none"> • occupational therapy • advice on preventing further strokes • physiotherapy exercises/hydrotherapy • emotional support and reassurance (professional or friends/family) • motivational support • Anti-depressants • speech therapy • walking aids/wheelchairs • adaptations for home life • home carer/support with personal aids • dietary support (including supporting eating) 	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 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 both impact on lifestyle and care needs • appropriate terminology • well-developed line of reasoning • logically structured • QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound discussion • some reference to impact on lifestyle and care needs • mostly relevant and accurate information • QWC - mid <p>Level 1 checklist</p> <ul style="list-style-type: none"> • limited / basic discussion • basic information limited structure, may be list like or muddled • QWC – low 	<p>Level 3 [7-8 marks] Answers provide a detailed discussion of impact on lifestyle and care needs. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [4-6 marks] Answer provides a sound discussion of impact on lifestyle and care needs. Answers will be factually accurate and mostly relevant. There may be some errors of grammar, punctuation and spelling. Sub-max 4 if only lifestyle or care needs done well</p> <p>Level 1 [1-3 marks] Answer provides a limited or basic discussion of impact on lifestyle and care needs. May be a description / identification only. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance
3	(c)	<p>One mark for a risk factor, one required.</p> <ul style="list-style-type: none"> • smoking • obesity • high cholesterol levels (accept high fat diet) • diabetes • excessive alcohol intake • physical trauma e.g. fall or blow to the head • high salt intake • stress • older age • drug abuse • family history/genetics 	<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>Don't accept overweight Poor diet is too vague Age alone is too vague</p>
3	(d)	<p>(i) One mark for an identification.</p> <ul style="list-style-type: none"> • lens 	<p>1 (1x1)</p>	<p>No other answers are acceptable.</p> <p>If multiple responses are given, mark the first response.</p>
		<p>(ii) One mark for a description, two required.</p> <p>Any two points from:</p> <ul style="list-style-type: none"> • protein builds up • cloudy vision/patches develop • cloudiness become more severe/patches increase in size 	<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</p> <p>Don't accept vision get worse</p>

Question			Answer	Marks	Guidance
3	(e)	(i)	<p>One mark for the correct location.</p> <p>In the brain <input checked="" type="checkbox"/></p> <p>In the kidneys <input type="checkbox"/></p> <p>In the neck <input type="checkbox"/></p> <p>In the pancreas <input type="checkbox"/></p>	<p>1 (1x1)</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
3	(e)	(ii)*	<p>Describe the function of either the thyroid or adrenal glands.</p> <p>Examples of key points: <i>Named examples of hormones and target organs can be used throughout</i></p> <p>Both:</p> <ul style="list-style-type: none"> to produce hormones role in regulatory system secrete (hormones) directly into blood hormones are released to act on a target organ trigger a response in the body produce different hormones <p>Thyroid :</p> <ul style="list-style-type: none"> produces thyroxin regulates metabolism controls growth <p>Adrenal:</p> <ul style="list-style-type: none"> produces adrenalin prepares the body in times of danger or stress (fight or flight response) effects a number of target organs e.g. heart, lungs, muscles increases heart rate, breathing rate, mental alertness, strength of muscular contractions and mobilises fats 	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 of function clear knowledge and understanding of function applying specifically to chosen hormone appropriate use of terminology logically structured QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> sound description of function some reference to function applying specifically to chosen hormone mostly relevant and accurate information QWC - mid <p>Level 1 checklist</p> <ul style="list-style-type: none"> basic information may not refer to function applying specifically to chosen hormone limited structure, may be list like or muddled QWC – low <p>IF THEY WRITE ABOUT BOTH GLANDS ONLY CREDIT THE FIRST GLAND COVERED</p>	<p>Level 3 [5-6 marks] Answers provide a detailed description of the function of either gland. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [3-4 marks] Answer provides a sound description of the function of either gland. Answers will be factually accurate and relevant. There may be some errors of grammar, punctuation and spelling.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic description of the function of either gland. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question			Answer	Marks	Guidance
4	(a)	(i)	<p>One mark for correct answer.</p> <ul style="list-style-type: none"> • semi-lunar (accept pulmonary or aortic) 	<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>
4	(a)	(ii)	<p>One mark for correct answer.</p> <ul style="list-style-type: none"> • Coronary 	<p>1 (1x1)</p>	
4	(a)	(iii)	<p>One mark for correct answer.</p> <ul style="list-style-type: none"> • vena cava 	<p>1 (1x1)</p>	
4	(a)	(iv)	<p>One mark for correct answer.</p> <ul style="list-style-type: none"> • Pulmonary 	<p>1 (1x1)</p>	

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
4	(b)*	<p>During diastole</p> <ul style="list-style-type: none"> heart is relaxed Blood returns to the atria via the vena cava AND the pulmonary vein The tricuspid and bicuspid valves are shut Atria contract The tricuspid and bicuspid valves open Blood moves into the ventricles <p>During systole</p> <ul style="list-style-type: none"> The tricuspid and bicuspid valves close The ventricles contract The semi-lunar (pulmonary and aortic) valves open Blood leave the ventricles via the pulmonary artery and aorta <p>Answer focuses on electrical impulses</p> <ul style="list-style-type: none"> <i>Sino atrial (SA) node initiates cardiac impulse</i> <i>Spreads through atria (making them contract)</i> <i>Impulses travels to Atrioventricular (AV) node</i> <i>Impulse is delayed</i> <i>Travels down the bundles of His</i> <i>Travels through purkyne fibres</i> <i>Ventricles contract</i> <p>The answer can focus on either diastole/systole OR Electricl impulses</p>	5	<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 the sequence of events events described in correct sequence with no major omissions appropriate terminology logically structured QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> sound description events described mostly in correct sequence MUST reference either diastole/systole OR electrical impulses mostly relevant and accurate information QWC – mid <p>Level 1 checklist</p> <ul style="list-style-type: none"> limited / basic description Might just describe flow of blood through the heart basic information limited structure, may be list like or muddled sequence of events QWC – low 	<p>Level 3 [5 marks] Answers provide a well-balanced description with points in correct sequence of events. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [3-4 marks] Answer provides a sound description with most points in sequence. Answers will be factually accurate. There may be some errors of grammar, punctuation and spelling.</p> <p>Level 1 [1-2 marks] Answer provides a list of points but may be out of sequence. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit.</p> <p>SEEN for a zero mark response</p>

Question			Answer	Marks	Guidance
4	(c)	(i)	<p>One mark for each cause identified. Two required.</p> <p>Can be physiological cause or risk factor:</p> <ul style="list-style-type: none"> • Lack of oxygen to heart muscle • Restricted blood supply to heart muscle • atheroma • hypoxia • Smoking • drug abuse • a high-fat diet • diabetes • high cholesterol • high blood pressure • being overweight or obese • inactivity/lack of exercise • high salt • stress • excessive alcohol consumption • family history • older age <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.</p> <p>If multiple responses are provided credit the first response ONLY</p> <p>Accept drinking too much</p> <p>Poor diet is too vague</p>

Question			Answer	Marks	Guidance
4	(c)	(ii)	<p>Method</p> <ul style="list-style-type: none"> Blood tests <p>explanations</p> <ul style="list-style-type: none"> damage to heart causes certain proteins to slowly leak into blood. allows damage to heart to be assessed can check how heart is responding to medication <p>Method</p> <ul style="list-style-type: none"> ECG traces <p>explanations</p> <ul style="list-style-type: none"> can identify if heart has been damaged by heart attack can identify which areas of heart has been damaged in heart attack can check heart function/abnormalities in the rhythm of the heart <p>Method</p> <ul style="list-style-type: none"> X-ray/angiogram <p>explanations</p> <ul style="list-style-type: none"> Checks for complications Checks for blood flow to cardiac tissue Checks for further damage to heart <p>Method</p> <ul style="list-style-type: none"> Blood pressure readings <p>explanations</p> <ul style="list-style-type: none"> check for high blood pressure to prevent risk of further heart attacks 	2 (2x1)	<p>Annotation: The number of ticks must match the number of marks awarded.</p> <p>For incorrect answers use the cross.</p> <p>One mark - identification of a method.</p> <p>One mark - explanation of why it is used.</p> <p>Don't credit GP appointment, as this is not a method</p>

Question			Answer	Marks	Guidance
5	(a)	(i)	Put a tick (✓) in the correct box. Ball and socket <input type="checkbox"/> Pivot <input type="checkbox"/> Hinge <input checked="" type="checkbox"/> Sliding <input type="checkbox"/>	1 (1x1)	No other answers are acceptable. If more than one box is ticked: 0 marks
5	(a)	(ii)	One mark for an identification. Four required. W = muscle X = tendon Y = bone Z = bone	4 (4x1)	Annotation: The number of ticks must match the number of marks awarded. For incorrect answers use the cross No other answers are acceptable.

Question		Answer	Marks	Guidance
5	(b)	<p>One mark for each answer, five required.</p> <p>The answers must be given as ordered below to complete the sentences in the passage</p> <ol style="list-style-type: none">1. sensory2. axon3. nucleus4. synapse5. neurotransmitter	<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 data-bbox="1352 496 1715 576" style="border: 1px solid black; padding: 5px; display: inline-block;">^ TV REP SEEN</div> <p>If multiple responses are given in a space, mark the response as incorrect.</p>

Question		Answer/Indicative content	Marks	Guidance	
				Content	Levels of response
5	(c)*	<p><i>Describe the possible causes of Dorothy's osteoporosis and the effects on her musculoskeletal system.</i></p> <p>Points may include: Possible causes of osteoporosis (not exhaustive):</p> <ul style="list-style-type: none"> • decrease in osteoblasts (less new bone is being made) • low peak bone mass • inactivity/sedentary lifestyle • smoking • excessive drinking • menopause • diet low in calcium and vitamin D • female • coeliac disease • anorexia • ageing <p>Accept other relevant examples.</p> <p>Effects on musculoskeletal system:</p> <ul style="list-style-type: none"> • loss of bone density • bones more prone to fracture • deformities of the bones • stooped posture of skeleton <p>Other appropriate examples can be accepted.</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 cause and effects of osteoporosis • appropriate terminology • logically structured • QWC - high <p>Level 2 checklist:</p> <ul style="list-style-type: none"> • sound description • some reference to aspects of cause and effects of osteoporosis • mostly relevant and accurate information • QWC - mid <p>Level 1 checklist</p> <ul style="list-style-type: none"> • limited / basic description • basic information • limited structure, may be list like or muddled • QWC – low 	<p>Level 3 [5-6 marks] Answers provide a detailed description of cause and effects of osteoporosis. Answers will be coherent, factually accurate and use appropriate terminology. There will be few, if any, errors of grammar, punctuation and spelling.</p> <p>Level 2 [3-4 marks] Answer provides a sound description of cause and effects of osteoporosis. Answers will be factually accurate. There may be some errors of grammar, punctuation and spelling. Sub-max of 3 if only causes OR effects of osteoporosis done well.</p> <p>Level 1 [1-2 marks] Answer provides a limited or basic description of cause and effects of osteoporosis. Answers may be list like, muddled, demonstrating little knowledge or understanding. Errors of grammar and spelling may be noticeable and intrusive.</p> <p>0 marks – response not worthy of credit. SEEN for a zero mark response</p>

Question		Answer	Marks	Guidance
5	(d)	<p>One mark for each point, two required.</p> <ul style="list-style-type: none"> • there are bones (ossicles, malleus, incus, stapes) in the ear • bones in ear needed to transmit vibration • bones get damaged/less dense/brittle • damaged bones can't transmit vibrations 	<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.</p>
5	(e)	<p>One mark for a method, two required.</p> <ul style="list-style-type: none"> • hearing aids/hearing loops • cochlear implants • middle ear implants • removing ear wax/syringing/ear drops • grommets <p>Other appropriate methods may be credited – to be added at SSU</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> <p>If multiple responses are provided credit the first response ONLY</p> <p>Don't accept sign language</p>

Question		Answer	Marks	Guidance
5	(f)	<p>One mark for each point, three required.</p> <p>One mark for function and up to two marks for explanation points.</p> <p>Function</p> <ul style="list-style-type: none"> • help maintain balance <p>Explanation</p> <ul style="list-style-type: none"> • filled with fluid • fluid moves as we move • messages sent to brain • gives information on orientation/direction/which way is up 	<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 or appropriate annotation from the following:</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> ^ TV REP SEEN </div>

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