

L3 Lead Examiner Report 2001

January 2020

L3 Qualification in Health and Social Care

**Unit 3: Anatomy and Physiology for
Health and Social Care (31493H)**

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A grade boundary is where we set the level of achievement required to obtain a certain grade for the externally assessed unit. We set grade boundaries for each grade, at Distinction, Merit and Pass.

Setting grade boundaries

When we set grade boundaries, we look at the performance of every learner who took the external assessment. When we can see the full picture of performance, our experts are then able to decide where best to place the grade boundaries – this means that they decide what the lowest possible mark is for a particular grade.

When our experts set the grade boundaries, they make sure that learners receive grades which reflect their ability. Awarding grade boundaries is conducted to ensure learners achieve the grade they deserve to achieve, irrespective of variation in the external assessment.

Variations in external assessments

Each external assessment we set asks different questions and may assess different parts of the unit content outlined in the specification. It would be unfair to learners if we set the same grade boundaries for each assessment, because then it would not take accessibility into account.

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Unit 3 – Anatomy and Physiology for Health and Social Care (31493H)

Grade	Unclassified	Level 3			
		N	P	M	D
Boundary Mark	0	12	24	37	50

Introduction

- This is the fifth sitting of this paper. The structure of the exam has not altered significantly across the papers.
- It is pleasing that many centres are using past papers to prepare learners. The improvement in responses this has engendered has continued to be seen by examiners and was most apparent in the responses of the higher achieving learners. These learners can apply their knowledge of the areas of the specification to the scenarios and questions presented in the paper and make links between the different areas of the specification. However, for the lower achieving learners a significant number still are unable to recall basic biological knowledge. Centres need to emphasise with their learners that this unit involves recalling and applying information, about the different body systems and the recall element is a relatively high proportion of the marks available.

Introduction to the Overall Performance of the Unit

The unit has performed well at the distinction boundary, where learners were well prepared and had practiced both the skills needed to access the extended questions and had learnt the information needed to pick up the recall marks found in the shorter answers.

At the pass boundary learners find it difficult to recall the basic biological information covered by the specification of this unit. Some learners can recall information about disorders but find it difficult to link the causes to the symptoms, this is a skill that centres may wish to concentrate on when revising for this unit, using the past papers and centre devised material. A significant minority of learners were unfamiliar with the disorders that are named in the specification. They often tried to overcome this by offering very generic answers that picked up few of the available marks.

Individual Questions

Question 1a

The command term was identify and most learners correctly identified the heart and kidney on the diagram.

Question 1b

The command term was outline, this is defined in the specification as a summary, overview or brief description. In this case the learners could gain the marks by identifying a function and saying something about it accurately.

This learner has identified ‘temperature control by sweating’ and ‘protection of the foetus to allow development’.

(b) Outline **one** function of the skin and **one** function of the uterus.

(4)

Skin

It helps prevent any foreign materials such as carbon particles in entering the tissues and blood and at the same time evaporates sweat on the skin to enable heat loss.

Uterus

It protects and supports the ^{implanted} fertilised egg until it becomes an embryo and develops into a foetus.

This poor response has identified ‘protection’ but not expanded on that function, and has got the function of the uterus completely wrong, the ovaries are a

completely different structure.

(b) Outline **one** function of the skin and **one** function of the uterus. (4)

Skin
To keep the inside of our bodies protected.

Uterus
~~used to store ovaries. re~~
Where a female's ovaries are stored.

Question 1c

The requirement was state, most learners did limit themselves to stating, but a common error was to identify structures that are not organs in the digestive system, or are parts of completely different body systems. There is a definitive list of the organs that learners need to be aware of in section A3 of the specification.

This learner has identified the stomach accurately, the trachea is a part of the respiratory system. Many learners identified small and large intestine, these are descriptive phrases for sections of the digestive system but they are not organs in themselves, and the learner should have identified for instance the duodenum or ileum and the colon.

(c) State **four** organs of the digestive system. (4)

1 Stomach

2 Small intestine

3 large intestine

4 pancreas trachea

Question 2a

The command term was state so the learner had to write the function of each, there was no need to elaborate on the answer as it would gain no extra marks.

A lot of learners were unaware of the function of the vas deferens.

This learner has identified four functions accurately.

2 (a) State the function of each of the following in reproduction. (4)

Ovaries
Holds the ovum and matures them.

Testes
produces the sperm.

Fallopian tubes
ovum moves here to wait for fertilisation and conception.

Vas deferens
Transfers sperm from testes to the urethra and adds a milky fluid to keep sperm nourished.

(b) Explain how cells divide for growth.

This learner has accurately described a function for the ovaries and testes, as did many learners, however they have not attempted to identify a function for the vas deferens and they have confused the fallopian tubes with the umbilical cord.

2 (a) State the function of each of the following in reproduction. (4)

Ovaries
Where the baby's egg is stored before fertilisation.

Testes
Sperm is stored here before fertilisation takes place.

Fallopian tubes
Attach to the amniotic sac, providing it with needed nutrients for the baby.

Vas deferens

Question 2b

This question was explain for 2 marks, so an identification of how, then an expansion linked to the identification.

This learner has identified mitosis and then expanded that to say that two identical daughter cells are produced.

(b) Explain how cells divide for growth. (2)

Cells divide by mitosis for growth.
mitosis produces two genetically
identical diploid daughter cells.

This learner has explained why cells may divide but they have not explained how that has happened so there is no rewardable material. They have not answered the question.

(b) Explain how cells divide for growth. (2)

cells divide for growth to make the immune
system stronger this is all for repairing the
body if any infections get occur for example

Question 2c

The question asked the learner to explain the effects of the conditions. There were two marks for each response, the learner had to identify an effect and expand that to link it to how the condition has caused it.

This response has said that the gap in the spine causes the problems, but has incorrectly identified an effect, spina bifida can cause mobility issues and scoliosis but does not cause stunted growth. The learner has accurately identified mobility issues caused by brain damage for cerebral palsy.

Spina bifida

Spina bifida affects the ~~the~~ spinal cord as it causes ^{impairment} ~~the vertebrae~~ to ^{properly} in the ability for the vertebrae to grow ~~properly~~.
It can stunt the growth of the individual as parts of the vertebrae may not grow completely, or there might be a large gap in the vertebrae which can cause spinal cord to protrude a sac in the back.

Cerebral palsy

Cerebral palsy affect the brain as it damages it which affect the movement, balance and coordination of an individual. It causes an individual to ^{not} move without support, and cause uncoordinated limb movements.

Question 3a

This question was poorly answered. The response required was a simple description of a message being sensed, passed to the nervous system then a response being elicited. This could be a reflex arc; a conscious decision and the response could be movement or a hormone produced. Specific examples were credited

This is an example of a better response describing a reflex response to a hot object.

3 (a) Describe how the nervous system reacts to stimuli.

(4)
The nervous system includes neurones which have receptors on their dendrites where they react to a stimulus such as touching something hot → heat detected by stimulus. → goes to message neurone → CNS → effector (muscle) → retracts hand away from the hot object.
(sensory neuron mes effector)

This is an example demonstrating the need to match a response to the number of marks on offer. Whilst correct in itself there is only one point made so only one mark can be awarded. The answer would have been improved by the inclusion of a specific example which may well have prompted the learner to include more points in their answer.

3 (a) Describe how the nervous system reacts to stimuli. (4)

the nervous system reacts to the stimulus
by releasing hormones,

Question 3b

Many learners seemed unfamiliar with the terms parasympathetic and sympathetic. These are in section B7 of the specification. Some learners guessed the answer by using the term sympathetic to mean that it was about emotions, suggesting that they had not come across the terms before.

This response shows a good understanding of the two systems, using 'rest and digest' and 'fight or flight' as terms to explain them with specific examples of heart rate etc. The learner has actually provided more information than is required for the marks available and is an example of how good exam technique could have reduced the time spent on answering this question.

Parasympathetic nervous system

Also known for controlling internal body functions as we "rest and digest", controls digestive system, regulates heart rate and breathing rate, no conscious control.

Sympathetic nervous system

Also controls internal body functions but prepares them for emergencies as we "fight or flight", speeds up heart and breathing rates, increases metabolism and stops digestive activity, no conscious control.

This is an example of a response demonstrating a role of the nervous system that is not linked to either the parasympathetic or sympathetic and seems to be an 'educated guess' based on the word 'sympathy'.

(b) Outline the role of the parasympathetic nervous system and the role of the sympathetic nervous system.

(4)

Parasympathetic nervous system

Release hormones to trigger actions that you want to take linked to your emotions.

Sympathetic nervous system

Release hormones to trigger emotion towards somebody or something

Question 3c

This question was outline two roles for four marks, there are two roles identified specifically identified in the specification, although if a learner had identified a role accurately that was not in the specification this was credited. Many learners could identify the production of adrenaline but not that of aldosterone.

This response has listed far more roles than are required by the question or identified in the specification. Most of the roles are accurate but are beyond the requirements of the specification (but would have been credited as they are accurate), however adrenaline and aldosterone are identified with correct expansions.

(c) Outline **two** roles of the adrenal gland. (4)

- 1 Adrenal cortex secretes hormones such as androgen (male sex hormone), progesterone (female sex hormone), cortisol (stress hormone) and aldosterone (helps with regulation of blood pressure).
- 2 Adrenal medulla secretes hormones such as adrenaline (fight or flight) and noradrenaline (rest and digest).

This learner has identified adrenaline, but has given an accurate fact about the position of the adrenal glands that is not a role so is not creditable. The extension to adrenaline production is not specific enough to be creditworthy.

(c) Outline **two** roles of the adrenal gland. (4)

1. ~~It reacts faster than our brains~~ it is on top of each of our kidneys.

2. it sends us reflexes to react to. for example when we have an exam and we stress the adrenaline is the thing that it gets it from.

Question 3d

This is a six-mark question with levelled mark scheme. The command verb is 'explain'. This question is in the context of an anatomy and physiology paper however a lot of responses were about needs of people affected, and did not mention the degeneration of brain cells that lead to those needs and the care then required.

This is an example of a good response where the learner has made the connections between the nerve damage, the progressive nature of the disorder and the resultant symptoms.

(d) Explain what the condition dementia is. (6)

Dementia is a degenerative condition, where the break down of nerve cells and/or build up of plaques happen in the brain. Dementia can come in 4 different types, each one having slightly different causes and symptoms. ~~There is~~ The build up of plaques such as Tau can lead to the breaking of nerve connections, or they can just break naturally which is common as we age. There is no treatment for dementia and it progressively worsens over time, leaving the individual affected to become completely reliant on others to live and then will eventually die from the condition. As nerve connections break down, the ability to do daily tasks such as feeding themselves, getting dressed and even communicating through speech becomes almost impossible for the individual affected.

(Total for Question 3 = 18 marks)

This response describes symptoms accurately, although there are also some inaccuracies, the learner appears to think dementia is caused by trauma and depresses the immune system. However, the learner has not mentioned the effect of loss of, or damage to, brain cells or linked this to the symptoms they have described.

(d) Explain what the condition dementia is.

(6)

~~disease~~ Dementia is a disease that ~~of~~ effects your brain when you are in your late adult-hood years, the disease causes your brain to forget your memory ~~to the~~ meaning that it goes back from the latest memory you have to your ~~early~~ earliest memories, This can cause a lot of problems such as confusion which can lead dementia patients to be very unsettled, as well as forgetting a lot of memories it can cause your immune system to be very low. ~~people with dementia can~~ last dementia does not have a set amount of time that a patient can last, it all depends on causes of how quickly it effects you eg like trauma.

Question 4a

Learners gave some very confused answers to this question, mixing up the air passages in the lungs with those of the nose. The nasal passages are not ciliated, they have hairs in that fulfil the filtering role. The requirement was to describe, for two marks, so learners had to say two accurate things about the role of the air passages. The most common accurate response was warm the air and moisten it. Many learners mentioned filtering particles/bacteria but did not mention anything else. Few learners mentioned the sense of smell.

This response has one statement that is too generic to be credited (allow us to breathe) and one that is inaccurate (ciliated to prevent bacteria getting in)

4 (a) Describe the role of air passages in the nose. (2)

Air passages allow us to breathe, they are ciliated which prevents bacteria from getting into the body.

Question 4b

Learners seem to struggle with the idea that ventilation is caused by the change of the volume of the lungs leading to a change in pressure. Although they were not expected to describe that in detail for this question, they were expected to make the link between the movement of the diaphragm and the intercostal muscles and the resultant change in lung volume or air pressure in the lungs.

This response demonstrates the understanding of the action of the muscles and the result and change in volume.

(b) Describe the function of the respiratory muscles. (4)

Diaphragm

Diaphragm contracts to increase thoracic volume to allow room for air to enter the lungs and relaxes to decrease volume so air can escape the lungs.

Intercostal muscles

Intercostal muscles are between each of the ribs and when they contract they pull on the ribs to increase thoracic volume and relax to decrease thoracic volume allowing air to escape the lungs.

This is an example of the type of response commonly seen, where a descriptive point about the diaphragm is made and there is no understanding of the intercostal muscles at all. These are detailed in section B3 of the specification and learners should be familiar with the terms.

(b) Describe the function of the respiratory muscles. (4)

Diaphragm

The diaphragm is located in the chest region, it plays a ~~vital~~ role in allowing us to breathe, it regulates the breathing.

Intercostal muscles

Question 4c

This as a six-mark question with a levelled mark scheme. The response should be in the context of an anatomy and physiology unit. Many learners described symptoms without referencing how those symptoms are produced. An understanding of the effect of asthma on the upper respiratory system was expected. A significant proportion of learners either described COPD or seemed to think that asthma was a disorder of the lungs themselves. A lot of answers appeared to be based on personal experience more than a knowledge of the anatomy and physiology of the disorder.

This is an example of a good response where the learner has linked triggers, the effect on the bronchi and bronchioles and gone on to explain the effect of this on the amount of oxygen that the body can get in and the amount of carbon dioxide removed.

(c) Explain how asthma affects someone's ability to breathe.

(6)

Asthma is an inflammatory ~~disease~~ condition of the lungs. An individual with asthma may have certain triggers for asthma such as spray deodorant, smoke, air pollution, mould etc. When an individual with asthma experiences a trigger, their airways (bronchi and bronchioles) become inflamed and tight. They also begin to produce excess mucus. All of this will narrow the airways limiting the amount of oxygen one can breathe in and carbon dioxide one can breathe out. There is no cure, however, if an individual has an asthma attack, inhalers (eg steroid inhaler) can be used to clear and increase the airways.

This is an example of a poor response where the learner has shown some isolated elements of knowledge, e.g. mucus is produced the amount of oxygen getting into the lungs is reduced. A lot of the rest of the answer is either very generic or incorrect. It is unclear whether the expression 'very thin' refers to the thickness of the airway walls, where it would be inaccurate but grammatically correct, or the diameter of the space in the airway which would be more accurate, unfortunately it is difficult for examiners to give the benefit of the doubt and the answers would have been improved by being read through and corrected.

(c) Explain how asthma affects someone's ability to breathe.

(6)

Asthma can be very different for all people diagnosed with it. Asthma is where ~~there is~~ ~~a~~ the passage ways are very thin and built up with ~~more~~ more mucus in normal, because the air passage ways are thin, it stops a reasonable amount of oxygen getting to the lungs so that the lungs don't expand as much a person without asthma would. This affects someone with asthma massively as depending on how extreme it is for them they may struggle to take part in sport activities, as they have the disadvantage of not giving the lungs enough oxygen. Asthma attacks can happen when hardly any oxygen has been inhaled/breathed in, a lot of asthmatic patients use an inhaler to avoid asthma attacks were it can clear up the air passage ways for a short amount of time.

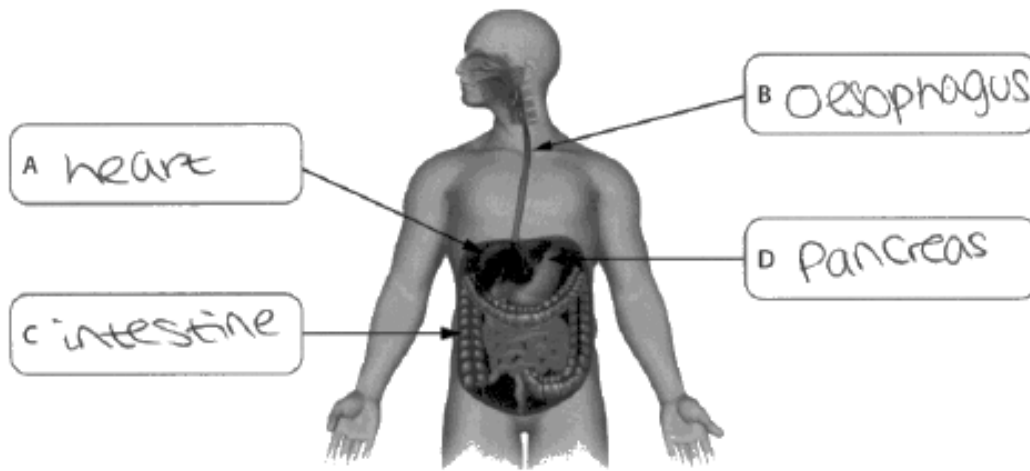
(Total for Question 4 = 12 marks)

Question 5a

This was generally well answered although a significant proportion of learners wrote intestine or large intestine rather than using the technical term 'colon' that is expected at this level. This is demonstrated in the response below.

- 5 The diagram below shows the digestive system.
(a) Identify the labels A, B, C and D on the diagram.

(4)



(Source: © Allia Medical Media/Pearson Asset Library)

Question 5b

This question is 'describe' for 2 marks, although statements do not necessarily have to be linked in a describe question, the answer had to refer to one function and some learners made two statements about unrelated functions so only gained one mark.

This response has written two good responses to the question, either answer, lubrication or amylase production is worth two marks, this is poor exam technique as the extra writing only wasted time that could be spent on other answers.

(b) Describe **one** function of saliva.

(2)

Saliva has amylase which helps to
breakdown & carbohydrates into simple
sugars. Saliva lubricates the mouth
and helps with bolus formation.

This response has referenced enzymes, but incorrectly and has not stipulated amylase. The rest of the answer does not make sense and is an example of where reading work back after it has been written could have helped a learner improve their mark.

One function of saliva is that it has enzymes from the food you eat
as well as vitamins so that it could be transported in the body
where it is needed.

Question 5c

Learners struggled with this question, many confused villi with cilia for some reason, and the expression 'adapted' seemed to throw some learners and there were some very surreal answers seen.

This is an example of a good answer referencing increased surface area, microvilli, lacteals and the shortened diffusion pathway.

(c) Explain how villi in the gut are adapted to carry out their function.

(4)

Villi are long and have ~~the~~ folded interior. The ~~the~~ epithelial cells are covered with microvilli. They also contain capillaries which carry nutrients to the large blood vessels. It also contain lymph vessels such as lactals. These two characteristics allows ~~the~~ increases the surface area for the absorption of food and increases diffusion of the nutrient out of the small intestine to the body.

This response recognises that the villi are part of the digestive process but does not make any reference to any of the adaptations of the villi, so is not actually answering the question.

(c) Explain how villi in the gut are adapted to carry out their function.

(4)

Villi is adapted to its functions because it is near and connected to the digestive system, which helps with the digestive system process.

Question 5d

This question proved more difficult for learners than expected, many had appeared to have misread the question and they produced an answer better suited to 'describe the digestive system' A very poor grasp of the structure of the digestive system was often seen with some strange orders of the structures, very

commonly learners thought the large intestine is before the small intestine in the order food passes through. Most learners also thought that chemical digestion takes place in the stomach, few could place it accurately in the small intestine, fewer could identify the different structures in the small intestine. The response that was expected was a description of mechanical and chemical digestion and the role that both play in the breakdown of food, the part of the digestive system that happens in was actually incidental to that.

This is an example of a good answer that details both mechanical and chemical breakdown and their relative roles, the placing of those processes in the digestive system is also accurate, the answer could have been improved by some reference to mechanical breakdown increasing the surface area available for the

enzymes to act on.

(d) Describe the breakdown of food in the digestive system. ^{enzyme acts bile} (8)

Food is broken down in the body by biological catalysts called enzymes, which speed up chemical reactions.

Digestion starts in the mouth where the teeth break down food into small pieces and mixed with saliva to soften it. The mouth contains ^{salivary} amylase which starts to break down starch to maltose. The food is boluses.

The stomach releases Hydrochloric acid to help breakdown food by creating the right environment for pepsin to start to break down proteins into peptides + amino acids.

The liver produces bile which is stored in the gall bladder and released into the small intestines to emulsify fats and create a more alkaline environment. For lipase, amylase and protease to breakdown fats, starches and proteins into ^{glycerol} fatty acids + glucose and amino acids in the duodenum. The enzymes are made in the pancreas.

In the jejunum molecules are absorbed.

The last part of digestion occurs in the ileum breaking down the last of the food. Enzymes are produced in the ileum wall. They are amylase + protease. ^{The colon reabsorbs water before its passed as faeces.}



This is an example of a poor response showing a misunderstanding of the structures involved, e.g. placing the trachea in the digestive system. There is no reference to either chemical or mechanical digestion.

(d) Describe the breakdown of food in the digestive system.

(8)

When the food enters the mouth it is then broke down ~~be~~ into little pieces by the teeth and saliva to be able to swallow, once the food has been swallowed it goes down ~~towards~~ the the trachea which is the passage way towards the ~~sm~~ stomach. here is were the stomach breaks down the food even more using the stomach acid. once that process is done it then travels round the large intestine preparing and again breaking down to then enter the small intestines which then the ~~food digestive~~ digested food is gradually getting smaller and preparing to then go down to the anus.

Question 5e

This question was a monohybrid cross, PU is a named condition in the specification and learners should know that it is a recessive disorder. They were expected to work the cross out and show they understood that they knew that in a recessive disorder the child must have both recessive alleles to show the

phenotype. Generally, learners had learnt how to do genetic crosses and scored well or they seemed unfamiliar with the method and gained no marks

This is a good response, the learner has worked out the cross accurately, shown the possible genotypes and the probability and identified it as a recessive disorder.

(e) What is the probability of two carriers of phenylketonuria (PKU) having a child with PKU? Use a genetic diagram in your explanation.

(4)

where the alleles are homozygous

Phenylketonuria is a recessive genetic disorder (rr).

The parents are carriers of the phenylketonuria meaning they have heterozygous alleles (Rr).

From the genetic diagram, it can be seen that the ratio of having a child who ~~is a carrier~~ is a carrier and doesn't suffer from the condition is 1:2:1 so the probability of having a child with PKU is 25%.

R = dominant r = recessive

		another parent	
		R	r
one parent	R	RR	Rr
	r	Rr	rr

This response shows a learner who has done an accurate diagram, albeit not in the conventional format but then has not understood the term probability, or that it has a specific mathematical meaning when doing genetics.

(e) What is the probability of two carriers of phenylketonuria (PKU) having a child with PKU? Use a genetic diagram in your explanation.

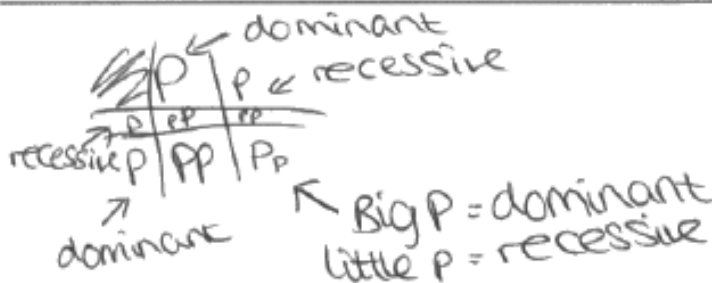
(4)



The chance of the child having PKU is 50%, this is because the parents carry it but do not necessarily have it. The parents both have a dominant and recessive allele, the genetic diagram shown below shows the likelihood.

The child ~~might~~ will definitely carry it but they might not have it, as the parents both carry it.

(Total for Question 5 = 22 marks)



Question 6a

Some learners overcomplicated this question, all that was required was to extract the two numbers and total them. This is an example of a learner who has done that.

6 (a) What number of the European population have either hepatitis B or C?

(2)

13 million have hepatitis B and 15 million
have hepatitis C, so 28 million people
have either hepatitis B or C.
 $15 + 13 = 28$.

This is an example of a learner who has calculated the correct total, but has not appreciated that there are two marks on offer, and it is always advisable to show your working in a data analysis question.

6 (a) What number of the European population have either hepatitis B or C?

(2)

28 million people with either Hepatitis B or C as in the
London School of Hygiene and Tropical Medicine and Public Health
England about 50-60 people with either hepatitis B or C.

Question 6b

Hepatitis is a named disorder in section B6 of the specification. Many learners seemed unfamiliar with it, nor did they make a connection to the liver and make educated guesses based on that.

This is a good example of two symptoms accurately identified and expanded on.

(b) Explain **two** symptoms of hepatitis infection.

(4)

1. Lack of energy as the liver is affected so the metabolism ^{and respiration} in the liver will be affected also. The liver will not be able to store glucose as glycogen as efficiently ^{leading to exhaustion}.
2. The liver also is responsible for breaking down molecules and sending waste products to the kidneys. The liver cannot break down waste effectively (eg old red blood cells) or produce urea efficiently leading to a yellowing of the skin.

This learner has confused hepatitis with haemophilia, and the second point is too generic to be rewardable.

(b) Explain **two** symptoms of hepatitis infection.

blood infection → (4)

1. Not being able to clot blood, will not stop bleeding if you have a cut.
2. feeling dizzy

Question 6c

The role of the liver in digestion is identified in section B6 of the specification, the regulation of blood sugar is in B8 and B1 and the role of the liver is stipulated there.

There were some excellent responses seen but a lot of learners struggled to answer this question and either put generic answers or confused the kidneys and liver.

This answer has an excellent first point about bile and emulsification, but the second point confuses the liver with the kidney.

(c) Explain **two** functions of the liver. (4)

1 secrete bile - which is then stored in the gall bladder and helps with digestion by ~~emit~~ emulsifying fats and holds

2 filters blood - that is old and not functioning and is then passed through the renal system as urine.

This answer confuses the liver and kidney in the first response, and the second response is incorrect, liver produces bile but then exports it to the gall bladder for storage.

(c) Explain **two** functions of the liver. (4)

1. Excretes waste fluid

2. Stores bile

Question 7.

This question was the learners' opportunity to show their understanding of the interconnections of different body systems. There were some excellent responses seen to this, but many learners were confused about cardiovascular disease, or thought it was limited to coronary heart disease. This limited their responses.

This is a good response, showing an understanding of the causes of CVD and linking them to their effects on different areas of the body, so referencing high blood pressure, atherosclerosis and the effect on heart rate leading to an increased chance of heart attack and different kinds of strokes.

7 Discuss the effects of cardiovascular disease on the body.

Cardiovascular disease is chronic and can occur due to a number of risk factors such as ; poor diet high in fat, lack of exercise and smoking. One effect of cardiovascular disease is high cholesterol, which is high levels of fat which over time can build up in the walls of the blood vessels decreasing their volume and affecting blood flow. This can lead to ~~the~~ another effect of high blood pressure ^{or hypertension} as blood flow is obstructed in arteries and arterioles where blood pressure is high anyway. This can lead to decreased oxygen around the body which can cause exhaustion. Heart rate ^{and breathing rate} will also be higher than that of a healthy individual as the heart is working harder to pump the blood all around the body, ^{through obstructed blood vessels.} If blood vessels become completely blocked it can cause cardiac arrest which is life threatening. Also, cholesterol or fat molecules could travel to the brain and if the brain's blood vessels become blocked or burst it can cause an ischaemic ^{or haemorrhagic} stroke, also life threatening.

(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 90 MARKS

18



P 6 4 0 9 2 A 0 1 8 2 0

This responses lists some possible effects of CVD but does not make any links between CVD and those effects, for instance the link between high blood pressure and damage to the retina or how mobility issues may be linked to CVD

cardio
- legs
- arms
etc.

7 Discuss the effects of cardiovascular disease on the body.

Cardiovascular disease can have many negative effects on the body, it can lead to many other health problems and if left untreated can become life threatening.

Cardiovascular disease (CD) can cause problems such as; mobility issues, poor eyesight, in extreme cases it can lead to things such as deep vein thrombosis (DVT).

Summary

- Learners should ensure that they can recall the basic anatomy and physiology of the body systems identified in the specification.
- To access the questions about disorders learners, need to be able to recall the symptoms of each disorder.
- Centres are advised to use the past papers and SAMS to practice the application of knowledge. This is especially relevant to the questions with levelled mark schemes.
- The use of a monohybrid genetic diagram to exemplify an answer is a skill that can be practiced and can gain marks easily for a learner.
- Learners should know the genetics of each of the conditions identified in the specification.
- Learners should ensure that they are familiar with the structure and organisation of the human body identified in section A of the specification as this underpins understanding of the different body systems.

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