

# **L3 Lead Examiner Report 1901**

January 2019

**L3 Qualification in Animal  
Management: Animal Biology**

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## Grade Boundaries

### What is a grade boundary?

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.

Grade boundaries for this, and all other papers, are on the website via this link:

<http://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html>

### Animal Biology: 31645H

Grade	Unclassified	Level 3			
		N	P	M	D
Boundary Mark	0	12	25	40	56

## Introduction

January 2019 was the fourth series of the new specification for Animal Management, when this mandatory unit has been assessed via an external assessment rather than via centre based internal assessment.

The question paper followed the format identified in the additional sample assessment materials published on the Pearson website.

The paper had seven questions. Each question was based on an area of the specification. Learners were required to demonstrate knowledge and understanding of a range of specification topics and to apply this knowledge to the specific question scenarios. The intention was to offer as broad coverage as possible for all areas of the unit content. Questions had varying weightings attached to them, with 1 to 3 marks for the lower demand questions and 4 to 8 marks for questions where an extended response was required.

The extended response, eight mark, questions were marked using a 'levels based' approach to assessment. The overall quality of the response was considered rather than the specific number of points gained.

There was also a focus on the use of suitable technical and vocational language and terminology within each response. The remainder of the questions on the paper were assessed using a range of indicative content and on the quality and clarity of the explanation provided.

## Individual Questions

The following section considers each question on the paper, providing examples of popular learner responses and a brief commentary of why the responses gained the marks they did. This section should be considered with the live external assessment and corresponding mark scheme.

**Question 1**

**Q1 (a)**

Majority of learners scored 2 marks for question 1a through being able to recall the two missing groups of nutrients as per section A2.1 in the unit content.

1 There are seven groups of nutrients that are important in an animal's diet.

(a) Complete the table below with the **two** missing groups of nutrients.

(2)

Water
Fibre
carbohydrates
Lipids
Proteins
vitamins
Minerals

**2 marks**

The two correct nutrient groups have been included in the table to achieve 2 marks.

1 There are seven groups of nutrients that are important in an animal's diet.

(a) Complete the table below with the **two** missing groups of nutrients.

(2)

Water
Fibre
Carbohydrates
Lipids
Proteins
Calcium.
Minerals

**1 mark**

Carbohydrates is correct to achieve 1 mark while 'calcium' is not a nutrient group and does not gain a mark.

**Q1 (b)**

Majority of learners were unable to recall the name 'peristalsis / peristaltic motion' from section A1.3 in the unit content. Learners were credited for incorrect spellings of the term.

(b) State the name of the muscular contractions that push food and waste products through the digestive system.

(1)

Peristalsis

**1 mark**

The correct name has been stated.

(b) State the name of the muscular contractions that push food and waste products through the digestive system.

(1)

Mastication

**0 marks**

'Mastication' is an incorrect answer.

**Q1 (c)**

This was a 4 mark question from section A2.3 of the unit content re digestion in birds. Majority of learners scored 1 or more marks.

(c) Complete the table below to show the names of organs and functions of a bird's digestive system.

(4)

Name of organ	Function
Crop	Stores food
Ventriculus / 'Gizzard' <del>Ventriculus / 'Gizzard'</del>	Mechanical digestion/grinding food
Proventriculus	chemical digestion
Cloaca	exit point of waste.

**4 marks**

The table has been completed accurately demonstrating an understanding of the organs and their functions in a bird's digestive system to achieve full marks.

(c) Complete the table below to show the names of organs and functions of a bird's digestive system.

(4)

Name of organ	Function
Stomach	Stores food
Stomach muscles	Mechanical digestion/grinding food
Proventriculus	keeps the food into stomach
Cloaca	Secretes stomach acid.

**0 marks**

The answers provided are all incorrect - no rewardable marks.

**Question 2**

**Q2 (a)**

This was a memory recall question from section A1.2 of the unit content majority of learners scored 1 mark.

2 The diagram below shows the skeleton of a bird.



(a) Identify the bones labelled A and B in the diagram above.

(2)

A Skull  
B Keel

**2 marks**

The two bones have been identified correctly for two marks.

2 The diagram below shows the skeleton of a bird.



(a) Identify the bones labelled A and B in the diagram above.

(2)

A keel  
B Skull / Cranium

**0 marks**

No marks could be awarded for this response where the names of the bones have been identified against the wrong labels.



## Q2 (b)

This 4 mark question from section A1.4 in the unit content was answered well with majority of the learners scoring either 3 or 4 marks and the average mark was 2.2. A good knowledge of the musculoskeletal adaptations to locomotion in birds was demonstrated.

(b) Explain **two** adaptations of the musculoskeletal structure of a bird that make it able to fly.

(4)

- 1 They have hollow bones which make them lighter and easier to ~~felegk~~ fly
- 2 They have a furcular which is a fused collar bone that allows them to flap their wings with more force.

### 4 marks

A complete explanation of two musculoskeletal adaptations to be awarded 4 marks.

(b) Explain **two** adaptations of the musculoskeletal structure of a bird that make it able to fly.

(4)

- 1 Hollow bones which aid in flight due to them being lightweight.
- 2 Air cavities instead of lungs which ~~reduce~~ reduce the weight of the birds and aid flight.

### 2 marks

An understanding of adaptations in birds for flying has been demonstrated with a correct explanation in point 1 to gain 2 marks, but the second explanation is not a 'musculoskeletal' adaptation as required by the question so cannot be awarded any marks.

## Q2 (c)

Majority of learners scored full marks for this question re functions of feathers from section A1.3 of the unit content.

(c) State **two** functions of feathers. (2)

1 Insulation - Keeping the bird warm.

2 Courtship - Giving certain appearances that will help get a mate.

### 2 marks

Two correct functions of feathers have been 'stated' for 2 marks although the response has been answered as if the question had been 'explain two functions of feathers'.

(c) State **two** functions of feathers. (2)

1 Waterproof

2 light weight

### 0 marks

Two incorrect functions of feathers have been stated – no rewardable marks.

## Q2 (d)

This is a 3 mark question from section B4.6 of the unit content required learners to demonstrate an understanding of fast twitch muscle fibres. Majority of the learners were able to describe one, two or three features to gain marks and the average score for the question was 1.28.

(d) Describe **three** features of fast twitch muscles.

(3)

fast twitch <sup>muscles</sup> fibres use anaerobic respiration. This means that they can fatigue. They have low mitochondria and oxygen, this can result in a build up of lactic acid.

### 3 marks

This response clearly describes three correct features of fast twitch muscle fibres to achieve 3 marks.

(d) Describe **three** features of fast twitch muscles.

(3)

- nerve cells to help detect messages.
- neurons to send signals to brain.
- oxygen to keep muscle healthy + alive / strong for protection.

### 0 marks

This response demonstrates a lack of understanding of fast twitch muscle fibres with no rewardable marks available.

### Question 3

#### Q3 (a)

The average mark for this question about ruminant bloat from section A2.8 of the unit content was 1.

Cows are an example of a ruminant animal.

3 (a) State **one** cause and **one** symptom of ruminant bloat.

(2)

Cause

Trapped gas in ~~red~~ rumen

Symptom

Swelling of stomach.

#### 2 marks

An accurate 'cause' and 'symptom' of ruminant bloat have been stated to achieve 2 marks.

Cows are an example of a ruminant animal.

3 (a) State **one** cause and **one** symptom of ruminant bloat.

(2)

Cause

Inherited genetic

Symptom

Build up of gas in rumen ~~reticulum~~.

#### 0 marks

'Inherited' is not a cause and, although 'build-up of gas in rumen' is a cause, it has been included under 'symptom' so there are no rewardable marks in this response.

### Q3 (b)

This was a memory recall, pass targeted question about gestation length from section A5.1 in the unit content. Majority of the learners did not know / unable to recall the gestation period of a cow.

(b) State the length of the gestation period of a cow. (1)

279 days

### 1 mark

Accurate recall of the gestation period of a cow to score 1 mark.

(b) State the length of the gestation period of a cow. (1)

? 2 weeks

### 0 marks

No understanding of 'gestation period' demonstrated through an incorrect response.

### Q3 (c)

Most learners were able to recall three parts of the female reproductive system to score the full 3 marks for this question.

(c) State **three** parts of the female reproductive system. (3)

1 fallopian tube

2 vagina

3 uterus

### 3 marks

Three parts of a female reproductive system have been correctly stated as per the mark scheme to achieve 3 marks.

(c) State **three** parts of the female reproductive system. (3)

1 follicular

2 ovulation

3 luteal

### 0 marks

Three incorrect answers have been stated with no rewardable marks.

### Q3 (d)

Majority of learners scored 0 for this 4 mark question on reproductive hormones from section A5.1 of the unit content which clearly demonstrated a lack of understanding of the role of these hormones.

(d) Describe the role of these **two** hormones in reproduction. (4)

Oestrogen

Oestrogen is responsible for rebuilding the lining of the ~~ut~~ uterus after ovulation. Oestrogen is produced and released by ovary and inhibits production of FSH

Oxytocin

Oxytocin is responsible for urinary contraction for example during birth the levels of oxytocin increase to expel the foetus, ~~it causes~~ it also causes ~~pre~~ lactation.

### 4 marks

The roles of both hormones have been accurately described as per points included in the mark scheme to achieve full marks.

(d) Describe the role of these **two** hormones in reproduction. (4)

Oestrogen

Oestrogen is a hormone found in females. When a female is producing oestrogen, she will release an egg ~~and will be fertile from it~~ into the fallopian tube. This will make her fertile.

Oxytocin

Oxytocin is ~~was~~ a hormone that stimulates labour / the female to give birth. The body reacts to this hormone by the uterus contracting and cervix dialating

### 1 mark

The role of oestrogen has been incorrectly described but the role of oxytocin re 'stimulating labour' has been awarded 1 mark.

### Q3 (e)

The average mark for this question was 1 with some of the learners scoring the full 2 marks by giving two purposes of cell division from section B3.4 in the unit content.

(e) Give **two** purposes of cell division.

(2)

- 1 Growth - ~~help an animal~~ help an animal develop
- 2 Repair an animal when it is injured or unwell.

### 2 marks

Two accurate purposes of cell division have been given i.e. 'growth' and 'repair' to score 2 marks.

(e) Give **two** purposes of cell division.

(2)

- 1 one purpose is to make sure that there is only 1 cell at the end.
- 2 to make sure that chromosomes are split up into different cells.

### 0 marks

The two purposes given are incorrect and scored 0.

**Question 4**

**Q4 (a)**

The average mark for this 4 mark question was 1.6 with majority of learners able to demonstrate an understanding of the concept of sense organs responding to stimuli from section A3.3 of the unit content to score 2 / 3 / 4 marks.

- 4 Cats have whiskers that allow them to respond to the environment around them to control body temperature.
- (a) Describe how sense organs cause responses to stimuli. (4)
- Receptor - Sensory -  
Relay - Motor - Effector.

The sense organs are know as ~~receptors~~ receptors and these detect change in the environment. ~~Next~~ <sup>Electric</sup> impulses from the ~~receptor~~ receptors travel down the sensory ~~neuron~~ <sup>neuron</sup> to the relay neuron <sup>which is in the CNS, which decides how to react to it.</sup> then to the motor neuron. These nerve impulses have to go across a synapses to get from one neuron to another. Finally, the nerve impulse is carried to the effector with reacts by ~~does whatever the CNS previously decided what~~

**4 marks**

A good description which demonstrates a complete understanding of the concept to gain 4 marks i.e. 'receptors detecting stimulus', 'impulse along sensory neuron', 'CNS to the motor neuron', 'to the effector which reacts'.

- (a) Describe how sense organs cause responses to stimuli. (4)

Sense Organs cause responses to stimuli by different ways. The main senses are touch, smell, hear, taste and see. This means that if any of these senses are used an animal can sense something around it which causes a response to stimuli.

**0 marks**

The question has been incorrectly answered with no rewardable marks available.



### Q4 (b)

This 2 mark, pass targeted question did not perform as expected. It was considered a memory recall question from section A3.2 of the unit content re the role of the sympathetic nervous system and majority of learners scored 0. An element of understanding of the different parts of the nervous system was required to identify the function of the sympathetic nervous system.

(b) Give **two** functions of the sympathetic nervous system.

(2)

1. Prepare body for fight or flight
2. Shut down any ~~unnecessary~~ body functions that use up essential energy e.g. digestion to use the energy during fight / flight

### 2 marks

This response is accurate and complete re the functions of the sympathetic nervous system to achieve full marks.

(b) Give **two** functions of the sympathetic nervous system.

(2)

1. Respond to pain
2. Respond to danger.

### 0 marks

The answers given in this response are incorrect – no marks awarded.

**Q4 (c)**

This is a 4 mark question on vasoconstriction and vasodilation from section A7.3 of the unit content. Majority of the learners scored between 1 and 0. Learners either confused the two processes with each other, wrote about the pupil in the eye or were unfamiliar with these terms.

(c) Describe the following processes.

(4)

Vasoconstriction

Its when blood vessels constrict to restrict the amount of blood flowing through them so less heat can be lost. So the body can warm up or increase its internal body temperature.

Vasodilation

Its when blood vessels dilate to increase the amount of blood flowing through them so the body can get rid of more heat. (so the body can decrease its body temp.

**4 marks**

A complete and accurate description of both processes to gain 4 marks.

<sup>Vasoconstriction</sup>  
~~vasoconstriction is the~~ constriction of the pupils in the eyes. This is a parasympathetic response, and so will calm the species down. It makes the eye see less so the species is not panicked.

<sup>Vasodilation</sup>  
~~vasodilation is the~~ dilation of the pupils in the eyes. This is a sympathetic response and will prepare the body for fight or flight. It will enable the <sup>eye</sup> body to let in more light and therefore see more.

**0 marks**

This response is incorrect re 'the constriction and dilation of the pupil in the eyes' with no rewardable marks available.

**Q4 (d)**

This question required learners to state two types of neurons from section B4.5 in the unit content.

(d) State **two** types of neuron.

(2)

1 Inter neuron

2 Motor neuron

**2 marks**

Two correct types of neurons have been stated to gain 2 marks.

(d) State **two** types of neuron.

(2)

1 Glial cells / neuron

2 Schwann cells / neuron

**0 marks**

Both answers are incorrect and scored 0 marks.

## Question 5

### Q5 (a)

Majority of learners scored 1 out of the 2 available marks for an explanation of one way the structure of a red blood cell is related to its function.

5 (a) Explain **one** way the structure of a red blood cell is related to its function.

(2)

No nucleus, allows more room for more haemoglobin, therefore more oxygen.

### 2 marks

This response identifies that the red blood cell has no nucleus and correctly explains the way this structure then allows more room for haemoglobin to carry oxygen i.e. the structure has been related to its function for full marks.

5 (a) Explain **one** way the structure of a red blood cell is related to its function.

(2)

Red blood cells have plasma which carries the waste products of respiration such as  $\text{CO}_2$  which can be transported through the bloodstream and expelled.

### 0 marks

No understanding of the structure or function of red blood cells has been demonstrated in this incorrect response and therefore scored 0 marks.

**Q5 (b)**

This question was not well answered with majority of learners scoring 0 through being unable to recall the role of the sinoatrial node in the heart from section A4.4 in the unit content.

(b) Give the role of the sinoatrial node in the heart.

Acts as a 'pacemaker' and keeps rhythm  
and pulse. (1)

**1 mark**

An accurate response i.e. 'pacemaker' which was awarded 1 mark.

(b) Give the role of the sinoatrial node in the heart.

transports ~~o~~xygen around  
the heart. (1)

**0 marks**

An inaccurate role has been given for the sinoatrial node in the heart – 0 marks awarded.

### Q5 (c)

Learners were able to demonstrate their level of understanding of mitral valve disease from section A4.14 in the unit content and gain some of the 4 available marks.

(c) Describe mitral valve disease (MVD).

(4)

mitral valve disease is when the valves in the heart can no longer completely close or are not as strong. The blood can then not flow ~~are~~ correctly and can cause back flow with every contraction. This can cause weakness and heart murmurs.

#### 4 marks

Four necessary descriptive points are included in this response i.e. 'no longer completely closes', 'backflow', 'weakness' and heart murmurs' - as per the mark scheme to gain full marks.

(c) Describe mitral valve disease (MVD).

(4)

Mitral valve disease is where the valves of the heart cannot work correctly or in time to a heart beat. This causes problems as blood cannot be pushed around the heart correctly, which could cause oxygenated blood and deoxygenated blood to mix

#### 0 marks

The learner has been unable to accurately describe mitral heart disease to gain any marks for this question. No marks were awarded for 'cannot work correctly' because not closing / leaking had to be part of the description about why the valve cannot work correctly.

**Q5 (d)**

This was the first of two competency based questions with marks awarded for the response being at Level 1, Level 2 or Level 3. If no rewardable material was evident the learner scored 0 marks. The mean mark for this question was 1.9 which is a high Level 1 answer and demonstrated that the majority of learners were only able to demonstrate isolated knowledge of the concept of anaerobic respiration through a limited discussion with generic assertions and major omissions.

When an animal is being chased it respire anaerobically.

(d) Discuss anaerobic respiration.

(8)

Anaerobic respiration is where the cells respire without using oxygen. The ~~body~~ ~~pararese~~ body detects the need for energy and converts its stores of glycogen into glucose for the body to use. The glucose is converted to energy within the cells, however without using oxygen a by product called lactic acid is produced. Anaerobic respiration is not as efficient as aerobic respiration and therefore can ~~str~~only be used for short periods of time. The body builds up an oxygen debt whilst using anaerobic respiration which needs to be paid back by breathing heavily or panting. This helps to reoxygenate the cells and remove the build up of lactic acid.

**8 marks**

This learner has demonstrated accurate and detailed knowledge of the concept of anaerobic respiration through a well-developed and logical discussion which includes all the relevant points about the process and how they link and interrelate. This is a Level 3 answer which was credited with 8 marks.

When an animal is being chased it respire anaerobically.

(d) Discuss anaerobic respiration.

*lactic acid*

(8)

Anaerobic respiration is not using oxygen. Anaerobic respiration is used when you are running, but it does not use oxygen as there is already oxygen going around the body. Anaerobic respiration means that if no oxygen is being used a bad toxin, lactic acid, is being built up around the body.

**2 marks**

This learner has attempted the question demonstrating isolated knowledge and understanding of the subject with major omissions re oxygen debt / short term process, / elimination of lactic acid. The discussion is limited with generic assertions rather than developing and linking statements. This is a Level 1 answer and was awarded 2 marks.

**Q5 (e)**

This was a pass targeted, memory recall question about cellular structure from section B1.1 of the unit content and majority of learners were unable to identify mitochondrion/a as the organelle where ATP is produced.

(e) State which organelle is the site for ATP production.

(1)

*mitochondria*

**1 mark**

The correct organelle has been stated.

(e) State which organelle is the site for ATP production.

(1)

*Kidney*

**0 marks**

'Kidney' is an incorrect answer



**Q5 (f)**

Majority of learners were able to recall three structures involved in inhalation and exhalation in mammals and the average mark for this question was 2.2.

(f) Give **three** structures involved in inhalation and exhalation in mammals.

(3)

- 1 Lungs
- 2 Diaphragm
- 3 Intercostal muscles.

**3 marks**

Three correct structures have been given.

(f) Give **three** structures involved in inhalation and exhalation in mammals.

(3)

- 1 ~~Respiratory System~~ Respiratory system
- 2 Intercostal muscles
- 3

**1 mark**

Intercostal muscles is the only correct answer.

**Question 6**

**Q6 (a)**

Although learners were asked to 'compare' pangolins and armadillos (section C3.1 of the unit content) marks were awarded for descriptive points re each species as per the mark scheme.

6 Animals are classified into groups in order to be easily identified and studied.

(a) Compare a pangolin to an armadillo.

(4)

Pangolins are fully covered in keratinised skin and coats, whereas armadillos 'shell' is only hard and covered like this. Armadillos crawl and have shorter legs with a short tail, whilst Pangolins have long legs and a long keratinised tail. Pangolins are found in hot conditions (e.g. desert) and armadillos in humid (e.g. rainforest).

**4 marks**

A good example of an accurate comparison between a pangolin and armadillo to gain full marks.

6 Animals are classified into groups in order to be easily identified and studied.

(a) Compare a pangolin to an armadillo.

(4)

Armadillos are able to retreat into a sturdy ball when under threat where as a Pangolin can not. Pangolins are bigger.

**0 marks**

Although a comparison has been attempted the statements are inaccurate as both species can 'retreat into a sturdy ball' and an armadillo is bigger than a pangolin.

### Q6 (b)

This 4 mark question on 'distinguishing features of reptiles' (section C1.3 in the unit content) did not perform as expected with no learners scoring 4 mark. Many learners wrote 'exothermic' when they might have meant 'ectothermic' but they could not be credited for 'exothermic' as it is incorrect.

(b) State **four** distinguishing features of reptiles.

(4)

- 1 ~~hard skin~~ scaled skin
- 2 ~~lay large eggs~~ lay eggs
- 3 ectothermic
- 4 breathe with lungs.

### 3 marks

Marks were awarded for 'scaled skin', 'ectothermic' and 'breathe with lungs' as per the mark scheme.

(b) State **four** distinguishing features of reptiles.

(4)

- 1 exothermic
- 2 do not produce milk
- 3 give birth to eggs, not live young
- 4 no fur,

### 0 marks

There are no rewardable marks from the incorrect answers given in this response.

### Q6 (c)

The average mark for this 3 mark distinction targeted question on variation from section C1.2 in the unit content was 1.6.

(c) Describe how variation in animals leads to evolution.

(3)

Variation in animals leads to evolution because those animals that have the stronger mutation or the stronger characteristic of the species survives and reproduces to give offspring with the same stronger variation/mutation. those with the weaker mutations or characteristics will die and eventually all that will be left are the stronger animals of the species. therefore they have evolved to survive.

### 3 marks

This is a good example of an accurate description of how variation leads to extinction with marks awarded for 'mutation', 'stronger characteristic of the species survive' and 'reproduces'.

(c) Describe how variation in animals leads to evolution.

(3)

variation in animals leads to evolution, because when variation occurs, animals start to mate with animals of a different species, which ultimately will make a new species. When the new species is created, it will lead to evolution.

### 0 marks

There are no rewardable marks from this inaccurate description of how variation leads to evolution.

## Question 7

### Q7

This was the second competency based question and the last question on the paper which had 8 available marks awardable for the overall accuracy, detailed knowledge and understanding plus a well-developed discussion with relevant points and how they interrelate re the structure and function of the integumentary system.

The mean mark for this question was 3.3 which is a low Level 2 answer and demonstrated that learners had some accurate knowledge and understanding about the integumentary system and provided partially / well developed discussions of this topic which is from section A1.3 of the unit content.

The integumentary system is the outer covering that protects the body.

7 Discuss the structure and functions of the integumentary system.

(8)

*The integumentary system is made up of three layers the epidermis, the dermis and the subcutaneous layer.*

*The epidermis layer is the top layer which acts as a barrier from pathogens and infection from outside the body.*

*The dermis is the next layer, this layer is thicker in size. It holds the glands, hair follicles and*

capillaries and veins. The hairs grow out of the follicle and through past the epidermis for warmth and protection.

~~The~~ ~~is~~ ~~the~~ ~~last~~ ~~layer~~ ~~which~~ ~~has~~ ~~all~~ ~~the~~ ~~adipose~~

The subcutaneous layer is the last layer. it holds all the adipose tissue and nerves.

All the layers of the integumentary system are close together. This allows for extra protection from disease and allows them all to function correctly.

The subcutaneous layer helps to insulate the body as it has thick layers of adipose.

### 8 marks

The learner has demonstrated accurate and detailed knowledge of the structures and the functions of different parts of the integumentary system i.e. the layers of the skin and hair with a well-developed and logical discussion which includes all relevant points and how they link and interrelate. This is a level 3 answer which was credited with 8 marks.

The integumentary system is the outer covering that protects the body.

7 Discuss the structure and functions of the integumentary system.

The integumentary system in the skin consists of three layers <sup>(8)</sup> Epidermis which is the top layer, Dermis which is the middle layer and the hypodermis or sub-cutaneous layer which is the bottom layer this protects the body from chemical damage or toxins, and physical trauma. It protects the exterior of the body and ~~the~~ protects the more delicate parts like epithelial tissue, tendons, ligament, bones.

### 3 marks

The learner has demonstrated some accurate knowledge i.e. identifying the three layers of the skin and some functions but there are gaps and omissions re the functions of the layers and the discussion is only partially developed with some consideration of different aspects through an attempt to interrelate to tissue type.

## Unit Summary

Based on the performance on this paper learners should:

- Be familiar with technical terms from the unit content such as 'peristalsis', 'vasoconstriction and vasodilation', 'anaerobic respiration' and 'variation'
- Be able to identify structures and know their function such as 'sinoatrial node', 'crop/gizzard/proventriculus/cloaca' and 'mitochondria'
- Be familiar with systems and parts of the systems such as the reproductive system, sympathetic nervous system, respiratory system and integumentary system
- Know 'gestation lengths' of a few common mammals
- Understand the role of the various reproductive hormones
- Read the question to ensure the answer given reflects what has been asked i.e. 'structure **and** function'
- Practice the levels-based, extended response questions to ensure a Level 3 answer includes a well-developed and logical discussion with accurate knowledge relevant to the context of the question plus clear links which consider a range of different aspects and inter-relationships with body systems. This will then gain the 6-8 marks for each of the two levels-based questions included in the paper
- Responses should be based on the command verb in the question i.e. 'state' does not require expansion of a point but explain does
- Identify the marks allocated to the question and the space available to guide the extent of the response required and ensure the answer is included in the appropriate point / label.

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