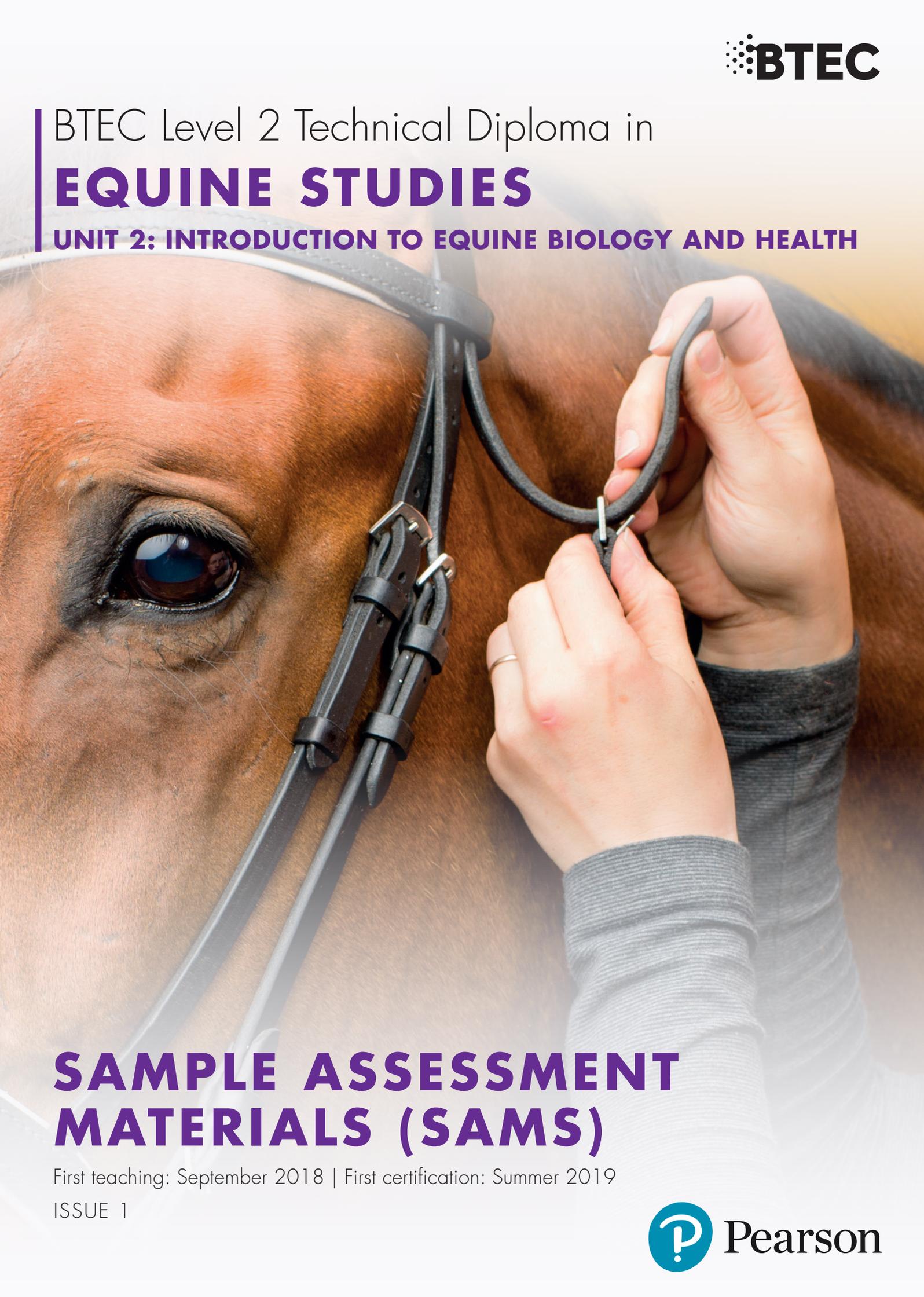


BTEC Level 2 Technical Diploma in

EQUINE STUDIES

UNIT 2: INTRODUCTION TO EQUINE BIOLOGY AND HEALTH



SAMPLE ASSESSMENT MATERIALS (SAMS)

First teaching: September 2018 | First certification: Summer 2019

ISSUE 1

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BTEC L2 Technical Diploma in Equine Studies

Unit 2: Introduction to Equine Biology and Health

Information for candidates

Instructions

- Answer all questions.
- An onscreen notepad is provided for you to make notes during the test. These notes will not be marked.
- An onscreen calculator is provided for questions which require calculation.
- An accessibility panel is provided on every screen. This allows you to magnify your screen and apply a range of colour filters

Information

- The assessment is **1 hour 15 minutes** in duration.
- The **total mark** for this test is **60**.
- The number of marks for each question is shown in brackets e.g. (2). Use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

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Start Test

Test Player Preview

Label the image of the horse with the correct names of the body parts. (2)

Drag and drop the **two** correct labels onto the image.

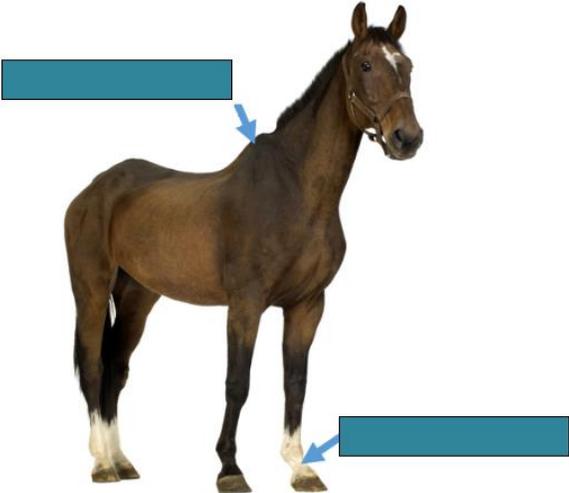
Chestnut

Muzzle

Pastern

Poll

Withers



Previous | 1 / 29 | Next | 00:45 | Marks | Save

Test Player Preview

Which **two** are symptoms of Cushing's disease? (2)

Select **two** options.

- Decreased thirst
- Fatty deposits on body
- Reluctance to walk
- Shaggy coat
- Watery droppings

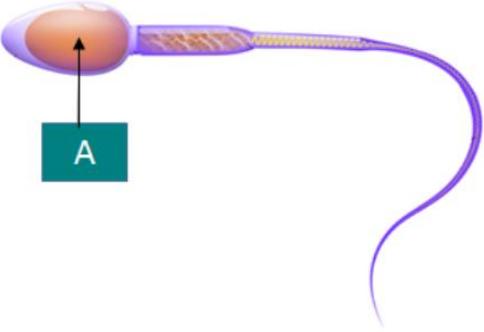
ⓘ ? 📄 🚩 ⏪ Previous 2 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

What is the name for Part A? (1)

Select **one** option.

- Acrosome
- Centriole
- Flagella
- Nucleus



The diagram shows a cross-section of a sperm cell. The head is at the top left, containing a large, dark, oval-shaped nucleus. Attached to the top of the nucleus is a smaller, lighter-colored, oval-shaped structure labeled 'A', which is the acrosome. The middle section is the midpiece, containing mitochondria, and the tail is the flagellum, which is long and curved.

Navigation: Previous 3 / 29 Next 00:45 Marks Save

Test Player Preview

What is the primary function of the molars? (1)

Select **one** option.

- Grinding
- Nibbling
- Ripping
- Tearing

ⓘ ? 📄 🚩 ⏪ Previous 4 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

Which **two** are signs a mare is in oestrus? (2)

Select **two** options.

- Biting the stallion
- Frequent urination
- Kicking towards the stallion
- Opening/closing vulva
- Pinning or swishing tail

ⓘ ? 📄 🚩 ⏪ Previous 5 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

What is the average length of gestation of a horse? (1)

Select **one** option.

115 days

283 days

340 days

437 days

ⓘ ? 📄 🚩 ⏪ Previous 6 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

What is rectal palpation used for in horses? (1)

Select **one** option.

- To check temperature
- To diagnose pregnancy
- To remove worms
- To treat quidding

ⓘ ? 📄 🚩 ⏪ Previous 7 / 29 Next ⏩ ⏸ 00:45 Marks Save

Test Player Preview

What is the most likely cause for the symptom shown in the photo? (1)

Select **one** option.

- Mud fever
- Rain scald
- Sweet itch
- Tape worm



ⓘ ? 📄 🚩 ⏪ Previous 8 / 29 Next ⏩ ⌚ 00:45 Marks Save

Test Player Preview

Explain **one** way the villi are adapted to function. (2)

Type your answers in the box.

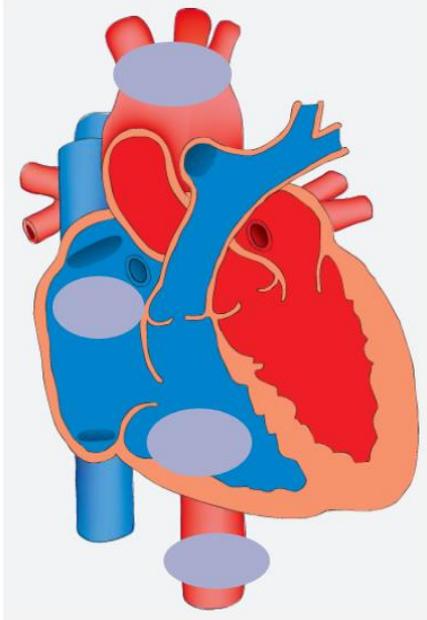
ⓘ ? 📄 🚩 ◀ Previous 9 / 29 Next ▶ 🕒 00:45 Marks Save

Test Player Preview

The diagram shows a horse's heart.

Identify the ventricle of the horse's heart. (1)

Click on the correct part of the heart.



ⓘ ? 📄 🚩 ◀ Previous 10 / 29 Next ▶ ⏸ 00:45 Marks Save

Test Player Preview

Which **two** are functions of the frog? (2)

Select **two** options.

- Assist blood flow in legs
- Improve foot balance
- Limit wear of hoof
- Protect the hoof
- Reduce concussion

ⓘ ? 📄 🚩 ⏪ Previous 11 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

What would be an indication of good health? (1)

Select **one** option.

Alertness

Lethargy

Pacing

Rolling

ⓘ ? 📄 🚩 ⏪ Previous 12 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

What is the function of a B-lymphocyte? (1)

Select **one** option.

- Carry nutrients
- Destroy antigens
- Ingest viruses
- Produce antibodies

ⓘ ? 📄 🚩 ⏪ Previous 13 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

Tom measures the pulse rate of his horse so he can work out the heart rate in beats per minute (BPM).
Tom counts 8 beats in 15 seconds.

Calculate the heart rate of Tom's horse. (1)

Select **one** option.
You must show your working

16 BPM

24 BPM

32 BPM

40 BPM

Working box

ⓘ ? 📄 🚩 ⏪ Previous 14 / 29 Next ⏩ ⏸ 00:45 Marks Save

Test Player Preview

Foals gain immunity from colostrum.

What type of immunity is this? (1)

Select **one** option.

Active

Artificial

Natural

Passive

ⓘ ? 📄 🚩 ⏪ Previous 15 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

What is the function of fibre in a horse's diet? (1)

Select **one** option.

- Aid digestion
- Encourage growth
- Give energy
- Improve condition

ⓘ ? 📄 🚩 ⏪ Previous 16 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

What is a mutation? (1)

Select **one** option.

- A change in the DNA sequence of a gene
- A genetic sequence of a characteristic.
- The physical appearance of a genotype.
- The probability a gene will be passed on.

ⓘ ? 📄 🚩 ⏪ Previous 17 / 29 Next ⏩ ⏸ 00:45 Marks Save

Test Player Preview

Explain **two** reasons why a mare would be scanned for pregnancy 21 days after insemination. (4)

Type your answers in the boxes.

Reason 1

Reason 2

ⓘ ? 📄 🚩 ◀ Previous 18 / 29 Next ▶ 🔊 00:45 Marks Save

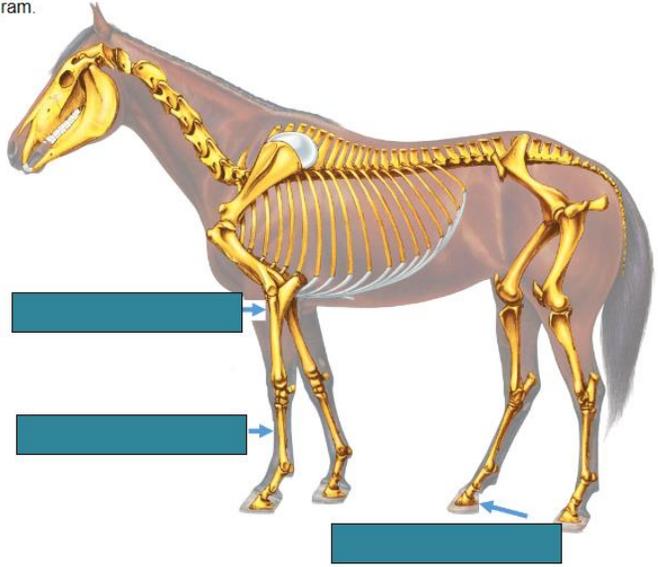
Test Player Preview

The diagram shows the bones in a horse skeleton.

Label the diagram of the horse skeleton with the correct names of the bones. (3)

Drag and drop the **three** correct labels onto the diagram.

- Cannon Bone
- Femur
- Humerus
- Pedal Bone
- Pelvis
- Scapula
- Ulna



Previous 19 / 29 Next 00:45 Marks Save

Test Player Preview

What is the normal resting breathing rate range, in breaths per minute, for a healthy horse? (1)

Select **one** option.

8 - 12

18 - 22

24 - 28

32 - 36

ⓘ ? 📄 🚩 ⏪ Previous 20 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

Scenario A should be used to answer screens 21-24.

Read **Scenario A** carefully before beginning the questions.

The scenario will be available on each question by clicking on the 

Scenario A

Jack has recently bought a young gelding who is about to begin his first vaccination programme. He calls his horse 'Ados'.

Jack rides Ados several times a week and has noticed he is reluctant to accept the bit.

Jack notices that Ados has difficulty chewing. Jack has checked Ados' temperature, breathing rate and heart rate and found that they are all normal. He calls the dentist.

The dentist visits and says Ados' teeth don't need rasping.

Back

ⓘ ? 📄 🚩 ⏪ Previous 21 / 29 Next ⏩ ⏸ 00:45 Marks Save

Test Player Preview

The question relates to **Scenario A**. Click on the scenario button to see the scenario **scenario**

Which **two** diseases would Ados be vaccinated against in the first vaccination programme? (2)

Select **two** options.

Influenza

Mud fever

Sweet itch

Tetanus

Thrush

Previous 21 / 29 Next 00:45 Marks Save

Test Player Preview

The question relates to **Scenario A**. Click on the scenario button to see the scenario **scenario**

Explain **one** reason why Jack needs to start the vaccination programme for Ados. (2)

Type your answers in the box.

ⓘ ? 📄 🚩 ⏪ Previous 22 / 29 Next ⏩ 🕒 00:45 Marks Save

Test Player Preview

The question relates to **Scenario A**. Click on the scenario button to see the scenario **scenario**

Explain **one** possible cause of Ados' dental problem. (2)

Type your answers in the box.

ⓘ ? 📄 🚩 ◀ Previous 23 / 29 Next ▶ ⌚ 00:45 Marks Save

Test Player Preview

The question relates to **Scenario A**. Click on the scenario button to see the scenario **scenario**

Explain **two** other consequences Jack is likely to see if he does not treat the dental problem. (4)

Type your answers in the boxes.

Consequence 1

Consequence 2

ⓘ ? 📄 🚩 ⏪ Previous 24 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

Scenario B should be used to answer screens 25-27.

Read **Scenario B** carefully before beginning the questions.

The scenario will be available on each question by clicking on the 

Scenario B

A local riding school want to breed a foal to back and ride at the busy yard which teaches riders at all levels.

The riding school have bred from their 15.1hh, bay mare before and are comparing suitable stallions. The foal they previously bred from her turned out to be grey, despite both parents being bay with genotype Bb.

They want the foal to be calm, between 14hh and 16hh, have a good temperament and be sound on its feet. The stallions they are comparing are as follows:

Characteristic	Stallion A	Stallion B
Colour	Chestnut	Bay
Use	Eventer	All-rounder
Height (hh)	16.2	14.3
Temperament	Nervous	Calm
History of lameness	Very occasional	None
Temperament of previous offspring	Highly strung	Generally calm

[Back](#)





[Previous](#) 25 / 29 [Next](#)
 00:45
 [Marks](#)
[Save](#)

Test Player Preview

The question relates to **Scenario B**. Click on the scenario button to see the scenario **scenario**

State the **two** most heritable characteristics the riding school are comparing. (2)

Type your answers in the boxes.

Characteristic 1

Characteristic 2

ⓘ ? 📄 🚩 ⏪ Previous 25 / 29 Next ⏩ 00:45 Marks Save

Test Player Preview

The question relates to **Scenario B**. Click on the scenario button to see the scenario **scenario**

The mare previously produced a grey foal.

Determine the chance that the foal could have been bay. (2)

Complete the Punnett square.
Type your answer in the box.

%

Previous 26 / 29 Next 00:45 Marks Save

Test Player Preview

The question relates to **Scenario B**. Click on the scenario button to see the scenario **scenario**

Evaluate which stallion is most suited for the riding school's needs. (6)

Type your answers in the box.

Previous 27 / 29 Next 00:45 Marks Save

Test Player Preview

Scenario C should be used to answer screens 28-29.
Read **Scenario C** carefully before beginning the questions.
The scenario will be available on each question by clicking on the 

Scenario C

Temi keeps her horse on a yard. The horse is turned out with other horses during the day and is ridden off the yard on a regular basis. The horse has become ill and recently been visited by the vet.

The vet suspects the horse has a disease that could spread.

The vet has made some recommendations for the care of the horse including:

- administer antibiotics
- feed soaked hay
- offer small palatable feeds
- monitor frequently
- administer electrolytes.

[Back](#)

 [Previous](#) 28 / 29 [Next](#)  00:45 [Marks](#) [Save](#)

Test Player Preview

The question relates to **Scenario C**. Click on the scenario  button to see the scenario **scenario** 

Explain **two** symptoms the horse may be showing that the care plan will treat. (4)

Type your answers in the boxes.

Symptom 1

Symptom 2

    [Previous](#) 28 / 29 [Next](#)  00:45 [Marks](#) [Save](#)

Test Player Preview

The question relates to **Scenario C**. Click on the scenario button to see the scenario **scenario**

Discuss how Temi can prevent the spread of disease to other horses on the yard. (6)

Type your answers in the box.

ⓘ ? 📄 🚩 ⏪ Previous 29 / 29 Next ⏩ 00:45 Marks Save

Unit 2: Introduction to Equine Biology and Health – sample mark scheme

General marking guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme, not according to their perception of where the grade boundaries may lie.
- All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme.
- Where some judgement is required mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a learner's response, the team leader must be consulted.
- Crossed-out work should be marked UNLESS the learner has replaced it with an alternative response.

Specific marking guidance for levels-based mark schemes*

Levels-based mark schemes (LBMS) have been designed to assess learner work holistically. They consist of two parts: indicative content and levels-based descriptors. Indicative content reflects specific content-related points that learners might make. Levels-based descriptors articulate the skills that learners are likely to demonstrate in relation to the skills being assessed in the question. The levels represent the progression of these skills.

When using a levels-based mark scheme, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches learners' response and place it within that band. Learners will be placed in the band that best describes their answer.
- The mark awarded within the band will be decided based on the quality of the answer in response to the level descriptor, and will be modified according to how securely all traits are displayed at that band.

Question number	Acceptable answer	Mark
1	<ul style="list-style-type: none"> • Withers (1) • Pastern (1) 	(2)

Question number	Acceptable answer	Mark
2	<ul style="list-style-type: none"> • Fatty deposits on body (1) • Shaggy coat (1) 	(2)

Question number	Acceptable answer	Mark
3	<ul style="list-style-type: none"> • Nucleus 	(1)

Question number	Acceptable answer	Mark
4	<ul style="list-style-type: none"> • Grinding 	(1)

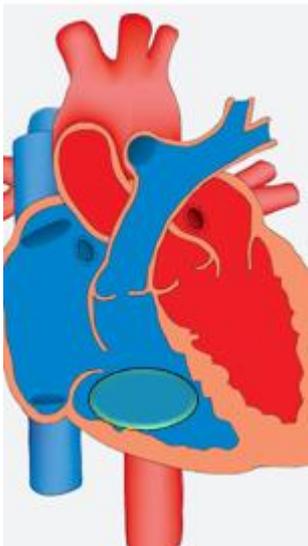
Question number	Acceptable answer	Mark
5	<ul style="list-style-type: none"> • Frequent urination (1) • Opening/closing vulva (1) 	(2)

Question number	Acceptable answer	Mark
6	<ul style="list-style-type: none"> • 340 days 	(1)

Question number	Acceptable answer	Mark
7	<ul style="list-style-type: none"> • To diagnose pregnancy 	(1)

Question number	Acceptable answer	Mark
8	<ul style="list-style-type: none"> Mud fever 	(1)

Question number	Acceptable answer	Mark
9	<p>1 mark for identification of adaption and 1 mark for linked expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> There is a rich blood supply (1), which allows transportation of nutrients (1). There is a large surface area (1), which allows faster absorption (1). The thin cell layer (1) allows easier absorption of nutrients (1). <p>Accept any other valid response.</p>	(2)

Question number	Acceptable answer	Mark
10		(1)

Question number	Acceptable answer	Mark
11	<ul style="list-style-type: none"> Assist blood flow in legs (1) Reduce concussion (1) 	(2)

Question number	Acceptable answer	Mark
12	<ul style="list-style-type: none"> Alertness 	(1)

SAM U2 Mark Scheme – Introduction to Equine Biology and Health

Question number	Acceptable answer	Mark
13	<ul style="list-style-type: none"> Produce antibodies 	(1)

Question number	Acceptable answer	Mark
14	<ul style="list-style-type: none"> 32 BPM 	(1)

Question number	Acceptable answer	Mark
15	<ul style="list-style-type: none"> Passive 	(1)

Question number	Acceptable answer	Mark
16	<ul style="list-style-type: none"> Aid digestion 	(1)

Question number	Acceptable answer	Mark
17	<ul style="list-style-type: none"> A change in the DNA sequence of a gene 	(1)

Question number	Acceptable answer	Mark
18	<p>1 mark for identification of a reason and 1 mark for linked expansion, up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> Early scanning means early diagnosis (1) ensuring the mare can be served again if necessary (1). 21 days would give more reliable results (1) as an embryo would be large enough to detect (1). <p>Accept any other valid response.</p>	(4)

Question number	Acceptable answer	Mark
19	<p>Ulna (1)</p> <p>Cannon bone (1)</p> <p>Pedal bone (1)</p>	(3)

Question number	Acceptable answer	Mark
20	<ul style="list-style-type: none"> 8–12 	(1)

Scenario A

Question number	Acceptable answer	Mark
21	<ul style="list-style-type: none"> Influenza (1) Tetanus (1) 	(2)

Question number	Acceptable answer	Mark
22	<p>1 mark for identification of reason and 1 mark for linked expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> Protect him from disease (1) <p>plus one from:</p> <ul style="list-style-type: none"> as his immune system is underdeveloped due to his age (1) lack of previous vaccination programme (1). <p>Accept any other valid response.</p>	(2)

Question number	Acceptable answer	Mark
23	<p>1 mark for identification of dental problem and 1 mark for linked expansion, up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> Eruption of Wolf teeth (1) because he's a young gelding (1). <p>Accept any other valid response.</p>	(2)

Question number	Acceptable answer	Mark
24	<p>1 mark for identification of consequence and 1 mark for linked expansion, up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> Failure to gain weight/weight loss/lack of energy (1) due to lack of feed/inadequate nutrition (1). Inappetence/change in temperament (1) due to pain (1). Change in muscle definition (1) from holding head incorrectly during ridden work (1). 	(4)

Scenario B

Question number	Acceptable answer	Mark
25	<ul style="list-style-type: none"> Height (1) Colour (1) 	(2)

Question number	Acceptable answer	Mark									
26	<table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>B</td> <td>b</td> </tr> <tr> <td>B</td> <td>BB</td> <td>Bb</td> </tr> <tr> <td>b</td> <td>Bb</td> <td>bb</td> </tr> </table> <p>Completed Punnet square (1) Percentage probability = 75% (1)</p>		B	b	B	BB	Bb	b	Bb	bb	(2)
	B	b									
B	BB	Bb									
b	Bb	bb									

Question number		Indicative content
27		<p>Indicative content guidance The indicative content that follows is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <ul style="list-style-type: none"> • Stallion B will be appropriate for all disciplines while Stallion A was bred for one particular discipline • Stallion B is smaller, which means offspring is likely to be within the preferred height range • Stallion A would possibly produce a bigger foal • Stallion B has appropriate temperament as well as that of previous offspring it produced. • Stallion B could be beneficial for use on a busy yard with a lot of novice handlers. • Stallion A could possibly produce nervous offspring • Stallion B has no history of lameness. Soundness is key to a riding school horse, Stallion A has history of lameness.
<p>Mark scheme (award up to 6 marks) please see the earlier guidance on how to apply levels-based mark schemes*</p>		
Level	Mark	Descriptor
Level 0	0	No rewardable content.
Level 1	1-2	<ul style="list-style-type: none"> • Demonstrates limited knowledge and understanding of relevant information • Basic arguments on both sides identified, or only one side considered, likely to be in the form of a list. Points made will be superficial/generic and not applied/directly linked to the context in the question • Conclusion, if present, is invalid or unsupported
Level 2	3-4	<ul style="list-style-type: none"> • Demonstrates good knowledge and understanding of relevant information • Gives a consideration of competing arguments/advantages and disadvantages in some context, but there may be more emphasis on one side than the other • There is an attempt at a conclusion but it may not be fully justified and the link to the context will not always be clear
Level 3	5-6	<ul style="list-style-type: none"> • Demonstrates accurate and thorough knowledge and understanding of relevant information • Displays a balanced evaluation. The argument will be justified and clearly linked to the consideration of arguments for and against, and their relative importance to the context. • A conclusion is produced which is relevant and clearly linked to the context

Scenario C

Question number	Acceptable answer	Mark
28	<p>Award 1 mark for identification of symptom and 1 mark for linked expansion, up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Raised temperature/cough/nasal discharge (1) could be caused by bacterial infection so treated with antibiotics (1). • Loss of appetite (1) requires palatable feeds to maintain nutrition (1). • Dehydration (1) could be caused by diarrhea so need electrolytes to aid rehydration (1). <p>Accept any other valid response.</p>	(4)

Question number		Indicative content
29		<p>Indicative content guidance</p> <p>The indicative content that follows is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:</p> <ul style="list-style-type: none"> • Temi should maintain good hygiene and follow a veterinary care plan to ensure effective control of disease in her horse, this will then prevent further spread. • Temi should monitor other horses for signs of disease so early diagnosis could be made and spread monitored. • Temi should isolate the affected horse to help prevent spread. • Temi should use barrier nursing techniques to help prevent spread. • Temi should make sure shared equipment is disinfected to reduce the chance of further disease spread.
<p>Mark scheme (award up to 6 marks) please see the earlier guidance on how to apply levels-based mark schemes*</p>		
Level	Mark	Descriptor
Level 0	0	No rewardable content.
Level 1	1-2	<ul style="list-style-type: none"> • Demonstrates limited knowledge and understanding of relevant information • Discussion likely to consist of basic description of information and is likely to consider a narrow range of factors • Points made will be superficial/generic and not applied/directly linked to the context in the question.
Level 2	3-4	<ul style="list-style-type: none"> • Demonstrates good knowledge and understanding of relevant information • Discussion is partially developed and makes some relevant links between a sufficient range of factors • Most points made will be relevant to the context in the question, but the link will not always be clear.
Level 3	5-6	<ul style="list-style-type: none"> • Demonstrates accurate and thorough knowledge and understanding of relevant information • Displays a well-developed discussion that makes effective links between a wide range of factors. • The majority of points made will be relevant and there will be a clear links to the context in the question



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