



Mark Scheme (Results)

June 2019

Pearson BTEC Level 3 – Equine
Management

Unit 1: 20108K

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Unit 1: Equine Structure, Form and Function – sample marking grid

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.
- Marking grids 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 marking grid, not according to their perception of where the grade boundaries may lie.
- All marks on the marking grid should be used appropriately.
- All the marks on the marking grid are designed to be awarded. Examiners should always award full marks if deserved. Examiners should also be prepared to award zero marks, if the learner's response is not rewardable according to the marking grid.
- Where judgement is required, a marking grid will provide the principles by which marks will be awarded.
- When examiners are in doubt regarding the application of the marking grid to a learner's response, a senior examiner should be consulted.

Specific marking guidance

The marking grids have been designed to assess learner work holistically. Rows in the grids identify the assessment focus/outcome being targeted. When using a marking grid, the 'best fit' approach should be used.

- Examiners should first make a holistic judgement on which band most closely matches the learner's 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 assessment focus/outcome and will be modified according to how securely all bullet points are displayed at that band.
- Marks will be awarded towards the top or bottom of that band, depending on how they have evidenced each of the descriptor bullet points.

Question Number	Answer	Mark
1a	<ul style="list-style-type: none"> • A – Radius • B – Cannon bone / Cannon 	2

Question Number	Answer	Mark
1b	<ul style="list-style-type: none"> • A 	1

Question Number	Answer	Mark
1c	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Fibrous cord (1) which attaches muscle to bone (1) • Ends spread out (1) to allow maximum surface areas for attachment (1) • Crimped structure (1) allows limited movement (1) to prevent damage (1) • Made of collagen (1) which provides strength (1) • Can have a sheath (1) for further protection (1) <p>Accept any other appropriate wording.</p>	4

Question Number	Answer	Mark
1d	<p>Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Connecting bone to muscle (1) in the fetlock joint (1) • Supporting / suspending fetlock joint (1) preventing it from over extending / preventing straining of flexor tendons (1) • Part of the stay apparatus(1) provides link between extensor and flexor systems (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2a	<ul style="list-style-type: none"> • A – Testes / Testicle • B - Retractor penis muscle 	2

Question Number	Answer	Mark
2b	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Sheath contains smegma (1) for lubrication (1) • Composed of erectile tissue (1) to access vagina (1) • Glans penis swells (1) helps dilate the cervix (1) • Length doubles in size when erect (1) to allow complete penetration / accurate ejaculation (1) <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
2c	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <p>Released at ovulation (1) from ovary (1) travels down fallopian tube (1) aided / moved by cilia (1) fertilised in fallopian tube (1) fertilised egg implants in uterus (1) unfertilised egg is expelled (1)</p> <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
3a	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Protects the eye (1) by blocking out direct light (1) • Keeps eye moist (1) by spreading the tear across the surface of the eye (1) • Prevents debris entering eye (1) by having eyelashes attached (1) 	2

Question Number	Answer	Mark
3b	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks</p> <ul style="list-style-type: none"> • Contain a tapetum lucidum (1) to reflect light (1) • Large eyes relative to head size (1) maximise light detecting cells (1) • Retina contains more rods than cones (1) activated in low light levels (1) • Pupils dilate (1) to allow maximum light into the eye (1) <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
3c	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • The eyes are positioned on opposite sides of the animal's head (1), giving it a wider field of vision (1) <p>Accept any other wording or appropriate examples.</p>	2

Question Number	Answer	Mark
3d	<p data-bbox="488 264 1102 376">Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <ul data-bbox="539 416 1123 696" style="list-style-type: none"><li data-bbox="539 416 1086 490">• Lens held by muscles (1) to allow lens to change shape (1)<li data-bbox="539 499 1123 573">• Cornea bends light as it enters the eye (1) aiming it onto the retina (1)<li data-bbox="539 582 1123 696">• Pupil can expand / contract (1) to control the amount of light entering the eye (1) <p data-bbox="488 728 1075 763">Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
4a	<p>Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks.</p> <ul style="list-style-type: none"> • Hormone (1) stimulates contraction of uterus / milk secretion (1) • Neurotransmitter (1) regulates social interaction / sexual interaction / bonding (1) <p>Accept any other appropriate wording.</p>	2

Question Number	Answer	Mark
4b	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Secretes catecholamines (epinephrine / norepinephrine / dopamine) (1) which respond to stresses • Produces androgens (1) which are then converted into testosterone (1) • Produces corticosteroids (1) which regulate sleep cycle / suppress inflammation / utilise carbohydrate / regulate blood pressure (1) • Produce mineralocorticoids (1) which regulate fluid and mineral excretion (1) <p>Accept any other appropriate answers.</p>	4

Question Number	Answer	Mark
4c	<p>Award up to a maximum of 4 marks.</p> <p>The beta cells (1) in the pancreas (1) are signalled to release insulin into the bloodstream (1). Insulin causes cells to absorb sugar / glucose from the bloodstream (1) which can be used for energy (1) therefore lowers blood sugar / glucose levels (1)</p> <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
5	<p>Answers will be credited according to the learners' demonstration of knowledge and understanding of the material, using indicative content and levels descriptors below. The indicative content that follows is not prescriptive.</p> <p>Answers may cover some / all of the indicative content but should be rewarded for other relevant answers.</p> <p>Answers may be supplemented by drawings of conformation faults which impact balance.</p> <ul style="list-style-type: none"> • Wither and hip height / Hindquarters • Forelimbs / hindlimbs • Head and neck carriage (Topline / underline) • Back structure / spinal problems • Heel height and how it affects the landing of the hoof / hoof balance • Frog and sole conformation • Stress / injury and badly fitting tack impacting on conformation • Specific conditions may be named and discussed in detail 	8
<p>Mark scheme (Award up to 8 marks) Refer to the guidance on the cover of this document for how to apply Levels Based Mark Schemes*.</p>		

Level	Mark	Descriptor
Level 0		No rewardable material.
Level 1	1-2	<ul style="list-style-type: none"> • Demonstrates isolated elements of knowledge and understanding, there will be major gaps or omissions. • Few of the points made will be relevant to the context in the question. • Limited discussion which contains generic assertions rather than considering different aspects and the relationship between them.
Level 2	3-5	<ul style="list-style-type: none"> • Demonstrates some accurate knowledge and understanding, with only minor gaps or omissions. • Some of the points made will be relevant to the context in the question, but the link will not always be clear. • Displays a partially developed discussion which considers some different aspects and some consideration of how they interrelate, but not always in a sustained way.
Level 3	6-8	<ul style="list-style-type: none"> • Demonstrates mostly accurate and detailed knowledge and understanding. • Most of the points made will be relevant to the context in the question, and there will be clear links. • Displays a well-developed and logical discussion which clearly considers a range of different aspects and considers how they interrelate, in a sustained way.

Question Number	Answer	Mark
6a	<ul style="list-style-type: none"> • Carries oxygenated blood (1) • Carries blood from the heart (1) <p>Accept any other appropriate answer.</p>	1

Question Number	Answer	Mark
6b	<p>Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Using a stethoscope and stopwatch (1) listen directly to heart beat for 1 minute / 15 seconds and then multiply by 4 / measure in beats per minute (1) • Heart rate monitor attached to horse (1) records heart rate through a range of activities (1) <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
6c	<p>Award up to a maximum of 4 marks.</p> <p>Activation of sympathetic nervous system (1) increases electrical activity of sinoatrial node (SAN) (1) causes heart to beat faster (1) resulting in increased blood supply through right atrium (1) which is detected by nerve cells (1) and impulse / feedback sent (1) back to brain (medulla) (1)</p> <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
6d	<p>Award one mark per comparative statement up to a maximum of 4 marks.</p> <ul style="list-style-type: none"> • Red blood cells carry oxygen, while white blood cells are involved in immunity (1) • Red blood cells carry iron, white blood cells do not(1) • One type of red blood cell, many types of white blood cell (1) • Red blood cells biconcave, white blood cells vary in shape (1) • Red blood cells have no nucleus, white blood cells generally have a nucleus (1) • Both produced in bone marrow (1) <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
7a	<p>Award up to a maximum of 2 marks.</p> <p>Rhomboideus (1) Trapezius (1) Splenius (1) Serratus (1)</p> <p>Accept any other appropriate answer.</p>	2

Question Number	Answer	Mark
7b	<p>Award up to a maximum of 4 marks.</p> <p>Highly branched with cells (1) connected by overlapping projections of the sarcolemma / intercalated discs (1). Discs contain desmosomes (1) and gap junctions (1). One nucleus per cell (1) muscle tissue sandwiched between endocardium and epicardium (1)</p> <p>Accept any other appropriate wording.</p>	4

Question Number	Answer	Mark
7c	<p>Award up to a maximum of 4 marks.</p> <p>Consists of a body (diaphysis) (1) and two terminal parts (epiphyses) (1) Periosteum (1) is a thin layer of dense connective tissue (1) which provides a blood supply / allows a point for muscular attachment (1) Central cavity of the bone containing the bone marrow (1) Spongy bone (1) is porous (1) and irregular (1) providing maximum strength (1) Bone marrow (1) produced in medullary cavity (1)</p> <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
8	<p>Answers will be credited according to the learners' demonstration of knowledge and understanding of the material, using indicative content and levels descriptors below. The indicative content that follows is not prescriptive.</p> <p>Answers may cover some / all of the indicative content but should be rewarded for other relevant answers.</p> <p>Answers may contain drawings of chemical structures or graphs.</p> <p>Answers must make reference to the effect carbon dioxide has on the affinity of haemoglobin for oxygen.</p> <p>Haemoglobin's oxygen binding affinity is inversely related both to acidity and to the concentration of carbon dioxide</p> <ul style="list-style-type: none"> • Oxygen needed for respiration and CO₂ is a waste product • CO₂ levels higher at respiring tissues • Blood with high levels CO₂ is less efficient in oxygen uptake but better at releasing oxygen. • Blood with high levels CO₂ sees the oxygen released to tissues where there is a high concentration of CO₂ • Reference to acidity • Oxyhaemoglobin is formed in the lungs • Returns back to haemoglobin in tissues • Shape of haemoglobin changes <p>Produces an s shape graph</p>	8

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Ofqual



Llywodraeth Cymru
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