Mark Scheme (Results)

January 2019

Pearson BTEC Level 3 – Equine

Unit 1: Equine Structure, Form and Function

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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	• A – Keratinocyte • B – Merkel cell	2

Question Number	Answer	Mark
1b	• B	1

Question Number	Answer	Mark
1c	Award up to a maximum of 4 marks. • Conserves body heat (1) by trapping a layer of air (1) • Detect objects (sensory) (1) located close to nerve endings (1) • Provides warmth (1) by having a thicker winter coat (1) • Protects (1) skin from sun damage (1)/ forms a barrier (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
1d	Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks. • Provides insulating layer (1) to maintain body temperature (1) • Cushions muscles /nerves (1) protecting them from damage (1) Accept any other appropriate response.	2

Question Number	Answer	Mark
2a	A – Glomerulus B – Collecting duct	2

Question Number	Answer	Mark
2b	Award 1 up to a maximum of 4 marks. • Loop of Henle (1) is where the reabsorption of water occurs (1) • Reabsorption of electrolytes (1) to prevent against too much reabsorption of water (1) • Triggers release of hormones/ADH / changes level of reabsorption (1)resulting in concentrated urine (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
2c	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. Carries blood from the heart (1) containing oxygen/nutrients/waste products (1) to the kidney (1) for filtering (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
3a	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks. Monitor/detects the temperature of the blood passing though (1) elicits physiological response (1) Sends feedback to body (1) causing shivering/sweating (Named response) (1)	2

Question Number	Answer	Mark
3b	Award up to a maximum of 4 marks. Arteries and veins run close to each other (1) in limbs (1) in opposite directions (1) warm blood in artery (1) flows past cold blood in veins (1) heat is exchanged from one to the other (1) allowing blood temperature to be maintained (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
3c	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks. Body temperature rises (1) body/ hypothalamus detects change (1) implements changes to ensure set levels are maintained (1) Accept any other wording or appropriate examples.	2

Question Number	Answer	Mark
3di	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks. Hormones produced (1) resulting in shivering/piloerection (1) Accept any other appropriate response.	2

Question Number	Answer	Mark
3dii	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 2 marks. • Vasodilation (1) increases heat dissipation (1) Accept any other appropriate response.	2

Question Number	Answer	Mark
4a	Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks. • Coordinates the body's activity (1) by sending/receiving information from the peripheral nervous system (1) Accept any other appropriate response.	2

Question Number	Answer	Mark
4b	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. • Accelerates heartbeat /constricts arteries (1) to increase blood flow around body (1) • Dilates pupils (1)/to allow maximum light into the eye (1) • Slows gut movement (1) to redirect energy for fight or flight (1) • Relaxes bladder and anal sphincters (1) to prevent non-essential activities (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
4c	Award up to a maximum of 4 marks. • Many dendrons (1) increase surface area (1) • Ending in dendrites (1) which make contact with neighbouring neurons (1) • Contain neurotransmitters (1) to pass information across synapses (1) • Myelin sheath (1) to increase speed of impulse (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
5	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. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers. • Structure of the heart including valves and chambers • Movement of oxygenated and deoxygenated blood through the heart • Atrial and ventricular systole and diastole • Changes to blood pressure as the heart beats • Control of cardiac cycle by sympathetic nervous system • Beats per minute	8

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*.

Level	Mark	Descriptor
Level 0	**0**	No rewardable material.
Level 1	**1–2**	Demonstrates isolated elements of knowledge and understanding. Generic statements may be presented rather than linkages being made. Lines of reasoning are unsupported.
Level 2	**3–5**	Demonstrates mostly accurate knowledge and understanding. Answer evidences occasional linkages between the elements in the context of the question. Lines of reasoning occasionally supported through the application of relevant evidence.
Level 3	**6–8**	Demonstrates accurate and thorough knowledge and understanding. Answer evidences comprehensive linkages between the elements in the context of the question. Lines of reasoning supported throughout by sustained application of relevant evidence.

Question Number	Answer	Mark
6a	• Hoof/foot	1

Question Number	Answer	Mark
6b	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. • Biceps femoris (1) maintains the hip joint in extension (1) • Gastrocnemius (1) extends hock joint /flexing stifle (1) • Semitendinosus (1) extends the hip and hock joint • Superficial gluteal (1) flexes and extends the hip, pulls hind leg toward the body Accept any other appropriate response.	4

Question Number	Answer	Mark
6c	Award up to a maximum of 4 marks. Found between the ribs (1) expand when equine breaths in (1) contract when equine breaths out (1) causing the ribs to expand and move upwards (1) drawing air into the lungs (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
6d	Award up to a maximum of 4 marks. Top jaw contains sinuses (1) lower jaw is solid bone (1) Top and bottom jaw contain the same number of teeth (1) Both contain an interdental space (1) Both are irregular bones (1) Both are symmetrical (1) Top jaw is fixed (1) bottom jaw is mobile (1) to allow chewing (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
7a	Award up to a maximum of 2 marks. Provides stability Provides balance Provides protection Absorbs concussion Supports weight Accept any other appropriate response.	2

Question Number	Answer	Mark
7b	Award up to a maximum of 4 marks. Supplied by blood (1) via the digital artery (1) Contains pedal bone (1) coffin bone (1) navicular bone (1) laminae (1) and pastern bone (1) held in place by ligaments (1) Digital cushion (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
7c	Award up to a maximum of 4 marks. Cover the exterior body surfaces (1) to protect from damage (1) Cover the lining of the body tracts (1) to protect from chemical damage (1) Maintains shape (1) by linking to other tissue layers (1) Accept any other appropriate response.	4

Question Number	Answer	Mark
8	Answers will be credited according to the learner's demonstration of knowledge and understanding of the material, using indicative content and levels descriptors below. The indicative content that follows is not prescriptive. Answers may cover some/all of the indicative content but should be rewarded for other relevant answers. Answers may contain drawings. Answers may discuss the production of eggs (oogenesis) or sperm (spermatogenesis) or both. Spermatogenesis: spermatogonia reproduce through mitosis resulting in primary spermatocytes. Primary spermatocytes reproduce by meiosis and contain half the genetic information known as secondary spermatocytes. Secondary spermatocytes divide by mitosis resulting in spermatids. End cell must contain half the genetic information. Process of meiosis: first and second meiotic division containing interphase I, prophase I, metaphase I, anaphase I, telophase I, interphase II, prophase II, metaphase II, anaphase II, telophase II. Processes differ in the number of cells produced: oogenesis – 1 egg, spermatogenesis – 4 sperm. Hormonal changes. Hormones produced by the pituitary gland.	8

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