



Mark Scheme (Results)

June 2018

Pearson BTEC Level 3 – Equine

Unit 1: Equine Structure, Form and
Function 20108K

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Unit 1: Equine Structure, Form and Function

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 – Mandible / jaw • B – Humerus 	2

Question Number	Answer	Mark
1b	<ul style="list-style-type: none"> • B 	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"> • Supports body (1) by providing structural strength/shape (1) • Protects organs (1) hard covering to stop damage (1) • Produces blood cells (red/white)(1) to ensure adequate supply/ replace dead cells / to allow effective immune response / ensure adequate oxygen transport (1) • Allows movement (1) through use of joints (1) • Stores minerals (1) to be used during muscle contraction / nerve conduction (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"> • Smooth area of bone (1) covered with cartilage (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
2a	A – Retina B – Optic nerve	2

Question Number	Answer	Mark
2b	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. <ul style="list-style-type: none"> • Horizontal shape (1) maximise light intake (1) • Can change in size (1) to adapt to dark conditions (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. <p>Improved night vision (1) reflects light (1) around the eye onto the retina (1) to amplify the light available for (1) for detection by the photoreceptors (1) reduces glare from sunlight (1)</p> Accept any other appropriate response.	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 4 marks.</p> <ul style="list-style-type: none"> • Restlessness / hyperactivity (1) looking for a stallion(1) • Squatting posture (1) preparation for being mounted (1) • Winking / squirting / elevated tail (1) to indicate receptivity / attract stallion (1) <p>Accept any other appropriate response.</p>	2

Question Number	Answer	Mark
3b	<p>Award up to a maximum of 4 marks.</p> <p>Mating occurs (1) sperm released (1) sperm moves through reproductive tract (1) Egg is released by the ovary (1) moves down fallopian tube (1) is penetrated by sperm head (1) through enzyme actions (1) Egg changes to prevent further entry of sperm (1) forms zygote (1) formation of diploid cell (1)</p> <p>Accept any other appropriate response.</p>	4

Question Number	Answer	Mark
3c	<ul style="list-style-type: none"> • Day 0/1 • Day 21/22 	2

Question Number	Answer	Mark
3d	<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"> • Increased levels of FSH (1) as not inhibited by oestrogen (1) • Horse enters dioestrus phase (1) Uterine lining breaks down (1) as not needed to support foetal growth (1) <p>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"> In the brain (1) at the base / behind brain stem (1) / below the hypothalamus (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"> Oxytocin is released by the pituitary gland (1) oxytocin stimulates labour contractions / parturition (1) Oxytocin causes the "let down" of milk (1) as a result of suckling (1) Luteinising hormone (LH) produced in the pituitary gland (1) causes ovulation (1) / causes development of corpus luteum (1) Follicle stimulating hormone (FSH) produced in the pituitary gland (1) controls the production of eggs / stimulates follicles (1) Prolactin produced in the pituitary gland (1) stimulates milk production (1) <p>Accept any other appropriate wording.</p>	4

Question Number	Answer	Mark
4c	<p>Award up to a maximum of 4 marks.</p> <p>Produced when water content of blood is lowered (1) ADH acts on kidneys (1) to reduce fluids excreted in urine (1) by increasing blood pressure (1) which signals for increased absorption of water by the kidneys (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>Anaerobic respiration = production of energy without the need for oxygen.</p> <p>Glucose is partially broken down into lactic acid, releasing energy resulting in the build-up of lactic acid.</p> <p>Anaerobic respiration is less effective / produces less energy than aerobic respiration. However, it is essential in times of high demand of energy/ low oxygen availability.</p> <p>Lactic acid must then be oxidised to carbon dioxide resulting in an oxygen debt causing the equine to continue to breathe heavily after exercise stops.</p>	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	<p>Demonstrates isolated elements of knowledge and understanding.</p> <p>Generic statements may be presented rather than linkages being made.</p> <p>Lines of reasoning are unsupported.</p>
Level 2	3-5	<p>Demonstrates mostly accurate knowledge and understanding.</p> <p>Answer evidences occasional linkages between the elements in the context of the question.</p> <p>Lines of reasoning occasionally supported through the application of relevant evidence.</p>
Level 3	6-8	<p>Demonstrates accurate and thorough knowledge and understanding.</p> <p>Answer evidences comprehensive linkages between the elements in the context of the question.</p> <p>Lines of reasoning supported throughout by sustained application of relevant evidence.</p>

Question Number	Answer	Mark
6a	<ul style="list-style-type: none"> • Patella (knee) / carpus (1) • Hock / tarsus (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> <p>Bones joined by cartilage (1) which has some flexibility (1) resulting in a cushioning structure (1) bones have smooth ends (1) to prevent friction (1) presence of synovial fluids (1) protects /lubricates joint (1)</p> <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
6c	<p>Award up to a maximum of 4 marks.</p> <p>Work in pairs (1) Agonist muscle contracts (1) becoming shorter (1) antagonist relaxes (1) and returns to original length (1) allowing movement towards contracted muscle (1)</p> <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
6d	<p>Award up to a maximum of 4 marks.</p> <p>Both maintain stability (1) both flexible/connective tissue (1).</p> <p>Tendons attach muscle to structures (i.e. eyeball) or to bone and ligaments attaches bone to bone only (1) only tendons allow movement of bone (1),ligaments, (while allowing some flexibility) stabilize joints</p> <p>Accept any other appropriate answer.</p>	4

Question Number	Answer	Mark
7a	<p>Award up to a maximum of 2 marks.</p> <p>Huddle together/shelter/ move to a warm place (1) Move about (1) Shiver (1) Piloerection (1)</p>	2

Question Number	Answer	Mark
7b	<p>Award up to a maximum of 4 marks.</p> <p>Blood vessels / capillaries widen (1) warm blood flows near the surface of the skin (1) where the heat can be lost to the air (1) to decrease temperature (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>Piloerection / causes hair to stand upright (1) trapping a layer of air (1) which warms due to proximity to blood (1) insulates equine (1).</p> <p>Winter coat thicker/denser/longer (1) increases insulation in winter (1).</p> <p>Award mark for only one side of each argument.</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.</p> <p>Structure of identified tissue types and how they impact function.</p> <p>Learners may look at the structure of tissue types or the structure of individual cells.</p> <p>"Simple" tissue in only one layer of cells, deep "stratified" tissue contains multiple layers of cells.</p> <p>Simple squamous – flat and irregular shaped. Thin layer to allow exchange of nutrients, wastes and gases. Lines blood vessels and air sacs.</p> <p>Simple cuboidal – cube like to increase surface area. Secretes and reabsorbs water and small molecules. Found in kidneys and glands.</p> <p>Simple columnar – rectangular for maximum surface area. Absorption of nutrients, and production of mucus by goblet cells. Found in digestive organs.</p> <p>Stratified squamous – thick layer of flat cells for protection against drying out / abrasions. Outer layer of skin / internal orifice.</p> <p>Stratified cuboidal – thick layer of cube-shaped cells to produce enough sweat. Lines sweat glands.</p> <p>Stratified columnar – secretes mucus. Lines mammary glands / larynx.</p> <p>Pseudostratified – cells appear to be stratified due to varied height of nuclei however the basal surface is in contact with each cell.</p>	8

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Pearson Education Limited. Registered company number 872828
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