Mark Scheme (Results)

Series: 2001

Pearson BTEC Level 3 – Equine Management

Unit 1: Equine Structure, Form and Function

BTEC Qualifications

BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.btec.co.uk for our BTEC qualifications.

Pearson: helping people progress, everywhere

Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

January 2020
Publications Code 20108K_2001_MS

Question Number	Answer	Mark
1a	• A – Ureter • B – Bladder	2

Question Number	Answer	Mark
1b	• A	1

Question Number	Answer	Mark
1c	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. • Cool animal down (1) by evaporation (1) • Remove waste (1) by secreting electrolytes / water (1) **Accept any other appropriate wording.**	4

Question Number	Answer	Mark
1d	Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks. Controls volume of urine produced / produces concentrated urine / prevents dehydration (1) by causing the body / nephron to reabsorb more water (1) **Accept any other appropriate response**.	2

Question Number	Answer	Mark
2a	• 3 – Camped under • 4 – Knee sprung **Accept any other appropriate response**.	2

Question Number	Answer	Mark
2b	Award 1 mark for each joint identified and 1 mark for each description up to a maximum of 4 marks. • Hinge / named joint (1) allows a back / forward movement / flexion and extension (1) • Ball and socket / named joint (1) allows rotational movement / adduction and abduction (1) **Accept any other appropriate response.**	4

Question Number	Answer	Mark
2c	Award up to 4 marks for a logical description that references: • The trot – work in diagonal pairs/the opposite hind foot and fore foot hit the ground simultaneously (1) • Trot pace is a two-beat (1) • Weight balanced in pairs. (1) • Canter has three beats (1) • Canter – in which the non-leading forelimb and the opposite hind limb strike the ground at the same time/resulting in weight on the leading (1) • Includes a period of suspension (1) **Accept any other appropriate wording.**	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. • Send nerve impulses (1) to the cells in the ventricles of the heart (1) • Cause contractions (1) resulting in blood pumped to the lungs / rest of the body	2

Question Number	Answer	Mark
3b	Award up to 4 marks for a logical description that references: • A muscle / organ comprising four chambers (1) • Blood leaves the heart through vessels from ventricles (pulmonary artery and aorta) (1) • Superior vena cava leads into the right atrium (1). The right atrium links to the right ventricle (1) by the tricuspid valve (1) Preventing backflow (1) • Pulmonary vein leads into the left atrium (1). The left atrium links to the left ventricle (1) by the bicuspid / mitral valve (1) Stronger muscle to push blood out into the body (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. • Phase of the cardiac cycle (1) when the parts of the heart relax between contractions (1) **Accept any other wording or appropriate examples.**	2

Question Number	Answer	Mark
3d	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. • Thin walls comprising endothelial cells (1) for easy diffusion / delivering oxygen from the blood to the tissues and carbon dioxide from the tissues back into the blood (1) • Form a network around the body (1) to allow effective transport (1) • Small enough to penetrate body tissues (1) to allow effective exchange of materials (1) • Form a capillary bed (1) large surface area for gaseous exchange (1) **Accept any other appropriate response.**	4

Question Number	Answer	Mark
4a	Award 1 mark for identification and 1 mark for linked expansion up to a maximum of 2 marks. • One layer thick (1) to allow faster absorption / diffusion (1) • Protective lining / barrier (1) against damage / dehydration (1) **Accept any other appropriate wording.**	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. • Connects muscle to bone (1) to allow movement (1) • Provides strength / stability (1) to restrict / control joint movement (protecting against injury) (1) • Regulates forces between muscle tissues during movement (1) so the body remains stable (1) Accept any other appropriate answers.	4

Question Number	Answer	Mark
4c	Award up to 4 marks for a logical description that references: • Dark and light bands (1) actin and myosin filaments (1) connective tissue covering (1) made up of many muscle fibres (1) • Cells are long (1) cylindrical in shape (1) with nuclei at the end (1) and are unbranched (1) **Accept any other appropriate response.**	4

Question Number	Answer	Mark
5	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. Structure • Lymphatic system covers the whole body in a system of lymphatic capillaries / vessels • Lymph moves by pressure of muscle movement and is not actively propelled. • Lymphatic tissue contains lymphocytes and macrophages • Lymphatic tissue forms lymph nodes (e.g. neck, base of bronchi) Function • Drainage of tissue fluids, forming lymph, which passes through lymphatic tissue before moving into blood. Particularly important in equine legs due to impact of gravity • Immune function: lymphocytes destroy bacteria and toxins. Causes lymph nodes to become enlarged when fighting infection • Transports fatty acids and glycerol	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		**No rewardable material**
Level 1	**1–2**	• 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**	• 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**	• 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	In the neck / throat / either side of the voice box / larynx (1) **Accept any other appropriate answer.**	1

Question Number	Answer	Mark
6b	Award 1 marks for each named hormone and 1 mark for each function up to a maximum of 4 marks. • Calcitonin (1) maintains blood calcium / phosphate levels (1) • T4 / thyroxine (1) regulates metabolism/influences sensitivity to epinephrine (adrenalin) / norepinephrine. (1) • T3 / triiodothyronine (1) normal development of the nervous system in foetus / young horse (1) **Accept any other appropriate answer.** **Actions for T3 and T4 are interchangeable.**	4

Question Number	Answer	Mark
6c	Award up to a maximum of 4 marks. Ovarian follicles mature (1) causing increased oestrogen levels (1) which stimulates secretions of FSH (1) and LH peaks (1) oestrogen levels continue to rise until ovulation (1) **Accept any other appropriate wording.**	4

Question Number	Answer	Mark
6d	Award 1 mark for each identification and 1 mark for each linked expansion up to a maximum of 4 marks. • Insulin regulates blood glucose levels (1) by reducing blood sugar (1) • Insulin promotes the storage of glucose (1) by synthesising glycogen (1) • Insulin regulates fat metabolism (1) by inhibiting fat breakdown (1) • Insulin regulates carbohydrate metabolism, (1) by stimulating uptake / use of glucose (1) **Accept any other appropriate answer.**	4

Question Number	Answer	Mark
7a	Award up to a maximum of 2 marks. Cervical (1) Thoracic/Dorsal (1) Lumbar (1) Sacral (1) Coccygeal (1) **Accept any other appropriate answer.**	2

Question Number	Answer	Mark
7b	Award up to 4 marks for a logical description of two named bones. • Cannon bone (1) large / weight-bearing bone (1) • Splints (1) two bones at either side of the cannon bone (1) • Sesamoid bones (1) two bones behind the fetlock joint (1) • Pastern (1) two bones above the hoof (1) **Accept any other appropriate wording.**	4

Question Number	Answer	Mark
7c	Award up to 4 marks for a logical description that references: Concentric bone layers (1) called lamellae (1) which surround a long hollow passageway (1) called the Haversian canal (1) which contains small blood vessels / nerves (1) **Accept any other appropriate response.**	4

Question Number	Answer	Mark
8	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. Level 2 answers must make reference to maintaining stability. Answers may contain drawings of both the internal and external structures of the hoof, identifying structures that provide strength and absorb shock. Internal anatomy: coffin bone, navicular bone, navicular bursa, digital cushion, primary and secondary laminae External structures: sole, frog, wall, white line, coronet Learners may discuss specific hoof conditions that result in imbalances and specific shoes to address each problem	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		**No rewardable material**
Level 1	**1–2**	• 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**	• 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**	• 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.

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government