2023 VCE VET Equine Studies external assessment report

General comments

The 2023 VCE VET Equine Studies written examination covered content from the following units of competency:

* VU22682 Implement and monitor horse health and welfare practices
* VU22683 Implement and monitor horse feeding programs
* VU22684 Relate equine form and function
* VU22686 Identify and describe equine physiology.

Students overall performed very well in the multiple-choice section of the examination. In section B most students attempted all questions and demonstrated a good understanding across all units. In questions relating to health issues and physiology functions some student responses were too general or did not give clear explanations in descriptive or extended responses to demonstrate their understanding and application.

Students could identify conformation features and horse management strategies, and understood different feed processes; however, students did not always address all the components of the question, which impacted their marks. It was evident many students did not bring a calculator to the examination, this is a reminder to students that the calculation of feed quantities is a required numeracy skill in the horse nutrition unit.

Specific information

Note: This report provides sample answers, or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

The statistics in this report may be subject to rounding, resulting in a total of more or less than 100 percent.

Section A –Multiple-choice questions

Correct answers in the following table are in bold type with cell shading.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Question | Correct answer | % A | % B | % C | % D | Comments |
| 1 | C | 0 | 0 | 100 | 0 |  |
| 2 | C | 6 | 2 | 41 | 51 | While 56 bpm is above the resting range common in industry of 30–40 bpm, students needed to know the difference between high and dangerously high. This was a discriminator question. |
| 3 | B | 5 | 65 | 28 | 2 |  |
| 4 | D | 11 | 8 | 45 | 36 | It is common practice for horses suffering RER to be fed pasture hay in preference of lucerne hay. This was a discriminator question. |
| 5 | B | 10 | 72 | 7 | 11 |  |
| 6 | A | 54 | 24 | 8 | 13 |  |
| 7 | C | 24 | 5 | 69 | 2 |  |
| 8 | B | 0 | 57 | 14 | 29 |  |
| 9 | D | 0 | 7 | 4 | 89 |  |
| 10 | B | 5 | 88 | 7 | 0 |  |
| 11 | C | 5 | 29 | 58 | 8 |  |
| 12 | A | 99 | 1 | 0 | 0 |  |
| 13 | D | 2 | 5 | 5 | 88 |  |
| 14 | A | 96 | 2 | 1 | 0 |  |
| 15 | B | 18 | 71 | 7 | 4 |  |
| 16 | C | 4 | 29 | 61 | 6 |  |
| 17 | A | 86 | 1 | 13 | 0 |  |
| 18 | D | 19 | 7 | 16 | 58 |  |
| 19 | D | 1 | 10 | 0 | 89 |  |
| 20 | A | 90 | 0 | 8 | 1 |  |

Section B

Question 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 16 | 15 | 42 | 27 | 1.8 |

Any three of the following:

* intake of oxygen
* gas exchange
* removal of CO2
* produce the sounds associated with communication.

Overall students understood the intake of oxygen and removal of CO2, although some students confused responses with the cardiovascular system function of blood circulating oxygen around the body.

Question 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 40 | 12 | 48 | 1.1 |

In trotting diagonal pairs of legs move together. In pacing, lateral pairs of legs move together.

Overall students understood the difference, but some students had difficulty explaining it.

Question 3a.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 8 | 31 | 47 | 14 | 1.7 |

Signs of dehydration (any three of the following):

* weaker pulse
* sunken/dull eyes
* dry mucous membranes
* darker red mucous membrane
* decreased sign of skin elasticity
* tucked up or sunken flank
* dark coloured urine
* dry manure – hard balls
* slow capillary refill

Students were not awarded a mark for ‘lethargy’ as this was too general.

Question 3b.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 0.6 | 22 | 59 | 18 | 1.9 |

Management of dehydration:

* electrolytes
* breaks to allow regular access to water
* time to cool down after competing before travel
* time to rehydrate before travelling
* close monitoring of horse while travelling
* adding molasses (or equivalent/salt block) to make the water tasty and encourage drinking.

Many students could identify electrolyte requirements and breaks to allow regular access to water.

Question 4a.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 47 | 53 | 0.5 |

431 kg

It was evident that many students did not bring a calculator to the exam; this is outlined in the exam requirements.

Question 4b.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | Average |
| % | 4 | 18 | 40 | 26 | 12 | 2.2 |

Any four of the following:

* increase the amount of hay given – more hay, round bale
* feed little and often
* add lucerne hay
* feed them more often
* give it a feed that is suitable for older horses – more frequent feeding (suitable premix)
* feed crushed/micronised/rolled oats to increase digestibility
* add oil to the feed.

Students had a generalised understanding of this question, but only a few students demonstrated a comprehensive knowledge of changes that would aid horses to gain weight.

Question 5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 28 | 45 | 27 | 1.0 |

Any two of the following:

* decreased/smaller lung capacity
* foreleg conformation – too close together / foreleg angle out / foreleg base wide
* decreased agility
* difficulty carrying a rider’s weight due to balance and frame build
* difficult to saddle fit
* increased risk of foreleg injury.

Question 6a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 32 | 16 | 52 | 1.2 |

‘Choke’ is blockage in the oesophagus that the horse can’t clear or swallow; the feed can’t get down to the stomach.

Some students confused this with a blockage in the respiratory system rather than the oesophagus.

Question 6b.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 9 | 22 | 51 | 19 | 1.8 |

Any three of the following:

* Horse eats too quickly (bolting feed).
* Horse doesn’t chew properly before swallowing
* Poor dental care causing inappropriate chewing.
* Very dry / dusty feed.
* Horse eats incorrect feed / dry feed that is meant to be soaked.

Question 6c.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 23 | 54 | 23 | 1.0 |

Any two of the following:

* increased salivation
* difficulty swallowing
* nasal discharge such as food and water
* visible swelling along the oesophagus
* coughing
* horse stretching neck out, attempting to swallow.

Some students associated choke with the respiratory system and identified difficulty breathing instead of swallowing.

Question 6d.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 17 | 41 | 41 | 1.2 |

Any two of the following:

* regular dentals to ensure proper chewing of food
* feed wet food
* feed hay and water 30 minutes prior to grain feed
* use methods to slow down horse’s eating
* always have access to fresh water.

Question 7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 37 | 36 | 28 | 0.9 |

The leading leg is the last leg to touch the ground and bears weight while stretched.

When galloping, the leading leg is subject to the most concussion.

Overall students understood gallop as a four-beat gait; however, some confused the order with foreleg first.

Question 8a.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | Average |
| % | 0 | 14 | 28 | 31 | 18 | 10 | 2.8 |

Any five of the following:

* Isolate and quarantine any suspected sick horses from other horses.
* Inform clients and visitors.
* Restrict employees/staff; only nominated staff to handle sick horse.
* New horse arrivals not accepted until the outbreak is over.
* Ensure proper hygiene measures i.e. wash hands, use PPE (clothes, gloves etc.).
* Do not use buckets or materials/equipment used with sick horses for healthy horses.
* Clean and disinfect all gear equipment.
* Handle healthy horses first and sick horses last.
* Monitor other horses for signs or symptoms.

Very few students were able to explain the management approach for this scenario for full marks. Many students’ responses were limited to undertaking isolation and quarantine procedures.

Question 8b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 14 | 43 | 43 | 1.3 |

Any two of the following:

* vaccinate horses
* quarantine new horses arriving to the property
* minimise exposure to other horses off site.

Question 9

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 70 | 25 | 4 | 0.3 |

* dark, round lumps
* hard in texture.

‘Raised bump’ was too general and not awarded a mark.

A majority of students were unable to identify melanomas – the colour was not known nor the fact that it was a hard lump.

Question 10a.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 64 | 36 | 0.4 |

Gamete production is production of reproductive/sex cells.

Question 10b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 30 | 18 | 52 | 1.2 |

* sperm production in the testes
* eggs / ova in the ovaries

Question 11a.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 77 | 23 | 0.2 |

A hunter’s bump is a bony bump at the point of croup, where the point of croup sticks out.

Students needed to be able to identify point of croup area. A large number of students identified other areas of the body.

Question 11b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 95 | 3 | 1 | 0.1 |

The bump on a horse’s rump is actually the bony prominence of the pelvis which becomes more visible after subluxation happens.

It is a tearing of the fibrous attachment that holds the pelvis and spine of the horse together. Once the attachment is loosened, the pelvis of the horse actually shifts out of place causing the characteristic bump on the horse’s rump.

The majority of students could not explain Hunter’s bump in this context.

Question 12

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 4 | 32 | 65 | 1.6 |

Any one of the following advantages and disadvantages:

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| * routine * staffing * schedule | * lead to stereotypes while waiting * hanging at gates at feed times * impatient at feed times * difficult to ride at these times * difficult to maintain – staff work schedule – pressures / incidents / external activities i.e. competitions, travelling |

Overall students demonstrated a sound understanding of the principles of feeding times.

Question 13a.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 19 | 33 | 28 | 20 | 1.5 |

Initial signs of laminitis (any three of the following):

* rocking back on heels, shifting weight either from front to back hooves or front to front
* digital pulse
* reluctance to move
* lying down
* pain in hoof
* hot feet
* severe lameness

‘Lameness’ on its own was not awarded a mark as it was too general.

Question 13b.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | Average |
| % | 50 | 26 | 12 | 9 | 2 | 0.9 |

The response needed to include four of the following five, and include ‘inflammation’ for full marks.

* inflammation in laminae
* restriction of blood supply in the hoof
* breakdown of the bond between the sensitive and insensitive laminae
* extra pressure on the tendon
* resulting in the deep digital flexor tendon pulling down/rotating the pedal bone.

Question 13c.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 2 | 11 | 42 | 45 | 2.3 |

Any three of the following:

* remove from pasture
* use a grazing muzzle
* limit intake of grain
* provide a low sugar hay / soaking hay to reduce sugars
* put in deep bedding to allow softer on the feet
* light exercise to help reduce weight
* corrective shoeing / farrier assessment

Although students overall had an understanding of laminitis signs and management strategies, many had difficulty explaining how laminitis develops structurally.

Question 14a.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 1 | 37 | 42 | 20 | 1.8 |

Any three of the following.

* Restrain the horse adequately: have someone hold the horse or alternatively tie it up.
* Have all the materials ready to avoid going backward and forward, or have an assistant to pass you things.
* Bend your knees; do not kneel or sit down on the ground next to the horse so that you can quickly get up if needed.
* Have a safe area, clear of hazards.
* Do not place hand on ground.

Students could identify restraint in a safe area; however, few students could identify other factors for full marks.

Question 14b.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Average |
| % | 15 | 26 | 19 | 9 | 20 | 9 | 2 | 2.3 |

Must have the first three in this order:

* Place a non-stick dressing / gauze to cover the wound.
* Use cotton wool or Soffban to bandage around the limb as a padding layer.
* Use conforming bandage, such as VetFlex/Vetwrap, to reduce swelling and keep the wrap in place.

Must have any three out of the following four:

* Go down the leg and finish at the top (to support blood flow in the leg).
* Overlap the layers with the wrapping
* Make sure the bandage is firm but not too tight.
* Secure with Elastoplast bandage at top to stop slipping.

Many students did not identify the correct order, often missing applying gauze first, or focused on restraining the horse and cleaning the wound instead of the bandaging process.

Question 15

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | Average |
| % | 39 | 29 | 25 | 4 | 2 | 1.0 |

* Micronising
* is a method of processing grains using infrared technology
* to heat and vibrate the starch molecule followed by a rolling or flaking process.
* Extrusion:
* feed mixed, cooked through high temperature steam and increasing pressure, pellet form

Advantages of both feeds: improved palatability / easier to digest / less wastage / easier on hind gut / low dust content – less dust content – less airway irritation

Students could describe micronised and extruded feeds; however, many students did not relate to the advantages over whole grains.

Question 16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 49 | 36 | 13 | 2 | 0.7 |

Sidebone is a bony growth on the side of the coffin / pedal bone OR ossification of the collateral cartilages of the coffin bone.

Upright hoof, flat foot, underrun heels, base narrow, upright pastern, toed in / pigeon toed or toed out.

Question 17

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Average |
| % | 4 | 6 | 15 | 14 | 20 | 15 | 17 | 6 | 4 | 4.0 |

Horse 1 is more suited to elite level eventing.

Conformation relating to soundness for eventing

Horse 1

* Sloping shoulder – open stride – better distribution of concussion throughout forelimbs
* Uphill build – ability to transfer weight to hind quarters – off the forehand
* Sloping pasterns – matching shoulder angle – more shock absorption

Horse 2

* Upright shoulder – concussive forces in movement more prone to arthritis, sidebone, ringbone etc.
* Downhill build – more prone to carry weight on forehand – putting more strain/concussion on forelegs
* Shorter – upright pasterns – more concussive force on forelegs
* Camped under in front – putting more weight on back of forelegs – strain to tendons

Conformation influencing movement for this purpose

Horse 1

* Sloping shoulder – open stride – more absorption in movement
* Hind quarter – muscular hindquarter, strong gaskins and good-sized hock joint for power in jumping and cross-country
* Uphill build – ability to transfer weight to hindquarter to perform dressage movements such as engagement and elevation in front.

Horse 2

* Upright shoulder – shorter choppier stride – not ground covering for dressage movements and cross-country
* Hind legs are straighter – good for galloping – however can lead to post-leg issues such as locking stifle
* Small hindquarter – weak gaskin and thin hock joint – lacks power in hind quarter for jumping and cross-country
* Downhill build – more weight on forehand – difficulty transferring weight to hindquarter for engagement and elevation

Ability to perform at this level based on conformation features

Horse 1

* Well defined jowl/ throat latch / gullet with good length of rein through neck allowing flexion through poll and quality airway for intense aerobic activity on cross country
* Sloping shoulder (matching pastern angle) allows good length of stride for ground covering in cross-country, extension in dressage and lift of forelegs for jumping

Horse 2

* Thick-set gullet, short neck, overdeveloped under neck / ewe neck – difficulty with flexion at poll and breathing with intensive aerobic ability on cross-country
* Upright shoulder – limits stride length and ground covering ability for making time on cross-country

Overall balance

Horse 1

* Overall even in body thirds fore – back – hind
* Uphill build – has ability to transfer weight to hindquarters for dressage movements and jumping

Horse 2

* Overall – shorter through back – not even – longer through legs – more leg interference likely
* Downhill build – more weight on forehand – more difficult to transfer weight to hind quarters for dressage and jumping
* Camped under in front – putting more weight on the forehand

Overall students could correctly identify the conformation features of both horses; however, many students missed addressing all components of the question in their explanation, in particular relating the conformation features to movement, purpose and soundness for elite eventing.