2022 VCE VET Equine Studies external assessment report

General comments

The 2022 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.

Overall, students performed better in the multiple-choice section of the examination than in Section B. Students displayed a good general understanding across both sections; however, in Section B, students were often unable to demonstrate specific understanding of the question and practical application in their responses. Some answers were too general, which reflected a lack of understanding and/or ability to clearly outline responses, and could not be awarded marks.

Students could identify health indicators and daily care requirements for horses. However, they lacked understanding of health issues, the impact on the horse, and management practices such as parasite control. Different conformation features were well identified by students, but the connection to movement and way of going were not well understood. Students demonstrated knowledge of nutritional requirements for horses, but lacked understanding of the difference between simple and complex carbohydrates.

Specific information

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 more or less than 100 per cent.

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. Shading indicates the correct answers.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Question | Correct answer | % A | % B | % C | % D | % N/A | Comments |
| 1 | D | 12 | 1 | 1 | 86 | 0 |  |
| 2 | C and D | 4 | 5 | 45 | **46** | 0 | Both 1 week and 2 weeks are acceptable industry practice for quarantine of new horses on properties. |
| 3 | B | 0 | 92 | 6 | 1 | 0 |  |
| 4 | A | 76 | 0 | 4 | 21 | 0 |  |
| 5 | B | 37 | 53 | 1 | 9 | 0 |  |
| 6 | A | 42 | 22 | 17 | 19 | 0 | Lack of knowledge of the relationship between hoof conformation and impact on leg structures was evident in student responses. |
| 7 | C and D | 19 | 14 | **31** | 36 | 0 | Cushings can cause weight loss and also increase fat deposits to give weight gain appearance so both C and D are correct. |
| 8 | D | 1 | 1 | 8 | 90 | 0 |  |
| 9 | C | 18 | 46 | 32 | 4 | 0 | Lack of knowledge of energy requirements for pregnant mares was evident in student responses. |
| 10 | C | 31 | 5 | 55 | 9 | 0 |  |
| 11 | B and D | 28 | **19** | 26 | 27 | 0 | Knowledge of relationship between conformation feature and abnormal movements was lacking with student responses in this question |
| 12 | D | 53 | 1 | 8 | 38 | 0 | A cryptorchid is a stallion with only one descended testicle, a rig relates to a gelding with one undescended testicle |
| 13 | A | 78 | 0 | 18 | 3 | 1 |  |
| 14 | B | 1 | 95 | 1 | 3 | 0 |  |
| 15 | A | 35 | 4 | 62 | 0 | 0 | Students incorrectly responded to this question as an excess of energy rather than an excess of minerals |
| 16 | B and C | 0 | **77** | 15 | 8 | 0 | While B (Position 2) was the correct response, C (Position 2, next to hard feed) is an industry-accepted practice - both positions are away from the water source and the gate. |
| 17 | C | 6 | 4 | 83 | 6 | 0 |  |
| 18 | B | 15 | 29 | 0 | 55 | 0 | Student lack of knowledge about active ingredients for treating parasites was evident. |
| 19 | A | 99 | 0 | 1 | 0 | 0 |  |
| 20 | B | 3 | 85 | 0 | 13 | 0 |  |

Section B

Question 1

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 51 | 49 | 0.5 |

Generally, students could identify the conformation fault from the image as base wide.

Question 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 19 | 47 | 30 | 4 | 1.2 |

All of the following were required for three marks:

* Have the horse restrained safely / stand close to the horse to the side. Prepare the thermometer with lubricant (horse must stay restrained).
* Lift the horse’s tail and gently insert the thermometer into the rectum up to 5cm or halfway.
* When it beeps, or after approximately 1 minute, remove the thermometer and read the measurement.

While students understood the practical application of taking the temperature of a horse, they overlooked the safety aspect in their explanation by not including the necessity to restrain the horse. Many students did not describe what to do after inserting thermometer.

Question 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 4 | 46 | 44 | 6 | 1.5 |

Any three of the following advantages:

* palatable
* convenient / simple to prepare / takes less time
* nutrient-balanced
* specialised diets
* contains additives
* easier to store than multiple bags
* designed for different life stages
* easy for horse to sift through feed.

The majority of students could identify one to two advantages; however, often students listed the same advantage in two different ways. Some students detailed cheaper cost as an advantage, which was not accepted as a response.

Question 4

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 75 | 25 | 0.3 |

Uterine prolapse occurs when the uterus turns inside out and protrudes out of the vagina.

Most students could not describe a prolapse after foaling.

‘Pro’ means forward, and ‘lapse’ means to fall or slide.

Question 5

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Average |
| % | 1 | 1 | 3 | 7 | 23 | 29 | 36 | 4.8 |

Students needed to identify one advantage and one disadvantage for each water source.

|  |  |  |
| --- | --- | --- |
| Water source | Advantage | Disadvantage |
| self-filling water trough | * constant source of water * easy to use | * can’t measure how much has been drunk * small amount of water that is constantly refreshed |
| dam | * large body of water * surrounded by natural vegetation * multiple access points | * contaminates running into the water * shared water source among numerous horses * water quality * danger to horses on dam bank / waterways |
| bucket | * portable * can measure what is consumed | * horse can run out of water * bucket can be knocked over or damaged, meaning horse could go without water * can be heavy to lift * requires frequent manual filling |

Overall, students had a sound understanding of water sources and the advantages and disadvantages of each.

Question 6

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 53 | 19 | 13 | 15 | 1.0 |

Fault (any one of the following):

* The vertical line of the hind legs will be further behind the horse than they should be.
* The cannon bone is not perpendicular to the ground.
* The hind legs are behind the plumb line, behind the line of the buttocks.

Impact (any two of the following):

* The horse will struggle to engage its hind quarters and to get its hind legs to come under itself to collect properly.
* Lacks swing through from behind and upwards thrusting power for higher end dressage movements.
* Inability to track up.

Many students interpreted ‘camped behind’ as ‘standing under behind’. Students needed to have a better understanding of the definition of ‘conformation fault’ to avoid confusion.

Question 7

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 14 | 35 | 32 | 19 | 1.6 |

All of the following functions of the equine nervous system:

* control of all functions
* movement
* sensation.

Many students could list only one or two functions.

Question 8

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | Average |
| % | 50 | 6 | 35 | 3 | 7 | 1.1 |

Draft horse (any one of the following):

* a short, sloping croup to provide power (feature) to push into the collar and pull heavy loads (explanation)
* camped out behind / camped behind (feature) assists the horse to push from its hind legs for pulling power and traction (explanation)
* strong boned (feature) for strength to work (explanation)
* large flat feet (feature) for traction on the ground (explanation)
* large elastic heels (feature) to act as shock absorbers when under work pressure (explanation)
* cow hock / close behind (feature) allows for increased push when in collar/harness (explanation).

No marks were awarded for well-muscled or strong hind quarters (features).

Riding pony (any one of the following):

* well-rounded hindquarters (feature) to enable collection and engagement, pony can push hind legs under itself (explanation)
* fine, strong legs (feature) for elegance in the show ring (explanation)
* flat bone and short cannons (feature) for strength and agility (explanation)
* straight vertical line from buttock to back of hock and cannon bone (feature) to allow for straight movement and/or engagement in show ring/dressage (explanation).

Many students identified strong hindquarters as a feature, but the question was specific to hind legs. Students either did not read the question thoroughly or did not understand the connection between conformation and purpose of different horse types.

Question 9

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Average |
| % | 14 | 23 | 19 | 22 | 14 | 5 | 3 | 2.3 |

Clinical signs (any two of the following):

* hair loss in circular areas that get bigger
* hair loss up to 3cm in diameter
* scaly, dry skin, circular raised scabs

Hygiene measures (any two of the following):

* practise appropriate hand hygiene (wash hands after dealing with the horse) as this is a zoonotic disease
* keep horse separate from other horses
* use disinfectants in environment to prevent spread / disinfect grooming equipment, rugs and other tack.

Treatment methods (any two of the following):

* scrub affected areas, remove scabs and hair
* wash and scrub the area with iodine/betadine-based wash/anti-fungal
* use an antifungal cream.

While students could identify the clinical signs of ringworm, they wrote about general hygiene procedures not specific to disinfecting and proposed treatment methods related to bacterial rather than fungal applications.

Question 10a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 10 | 32 | 58 | 1.5 |

Mucous membrane: pale/salmon pink.

Capillary refill: less than 2 seconds / must detail less than or 1–2 seconds.

Question 10b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 41 | 39 | 20 | 0.8 |

Determine the colour of the mucous membrane by lifting the horse’s lip and look at the gums. They should be a nice pale pink colour.

Capillary refill time is measured by pressing with your finger on the gum and release. The colour should refill within two seconds.

Some students did not clearly identify how to check mucous membrane colour and capillary refill time.

Question 10c.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | Average |
| % | 9 | 37 | 37 | 17 | 1.6 |

* blue membrane colour: hypoxia / lack of oxygen perfusion, serious circulatory problems, severe shock
* pale or white membrane colour: anaemia, shock
* slow capillary refill time: if prolonged it indicates dehydration, anaemia or shock.

Overall, students understood the mucous membrane and capillary refill’s relationship to horse health.

Question 11a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 67 | 25 | 9 | 0.4 |

* Forging: toe of hind foot strikes the sole of the front foot on the same side in trot, making a clicking noise
* Scalping: toe of forefoot hits the coronet of the hind foot on the same side in trot and gallop, or during pacing hits the diagonally opposite pair.

Overall students did not understand the differences between forging and scalping.

Question 11b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 58 | 34 | 8 | 0.5 |

One each from the following:

* Forging: pulling shoe or sprung shoe / hoof injuries / bruised sole
* Scalping: soundness – abrasions / bruised coronet / lameness / injury

Only a small percentage of students provided correct responses for full marks.

Question 12a.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 76 | 24 | 0.3 |

Pneumonia / pleuropneumonia.

The majority of students did not understand this disease. Travel sickness was too general and not awarded a mark.

Question 12b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 50 | 43 | 8 | 0.6 |

Short-term impact (one of the following):

* illness
* death
* loss of weight and condition.

Long-term impact (one of the following):

* can never fully recover
* lung damage
* reduced athletic capacity.

Many students provided ‘unable to compete’ as a short-term impact, not understanding the impacts of a life-threatening disease.

Question 13

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | Average |
| % | 31 | 23 | 23 | 13 | 6 | 3 | 0 | 1.5 |

Hindgut acidosis is an increased production of lactic acid in the lower intestinal tract/hindgut/cecum.

Suitable feeding program (any two of the following):

* high fibre
* limited grain and/or low sugar feeds and grass
* supplements such as equisure / hind gut buffer

Antacid was not accepted as it was too general.

Suitable management practices (any two of the following):

* minimise stress
* small feeds more often / roughage
* limit access to high sugar pasture
* supplements such as equisure/ hindgut buffer (this was only counted once if also listed under both feeding and management).

The majority of students confused hindgut acidosis with gastric ulcer feeding program and management practice. Only a small percentage of students obtained 3 or more marks for this question; their responses were clearly and concisely detailed explanations.

Question 14

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | Average |
| % | 61 | 23 | 5 | 5 | 4 | 3 | 0.8 |

1. A horse ingests pasture/soil with infective larvae.
2. The larvae enters the stomach and migrates into the artery walls.
3. Adult worms are released in the small intestines where they lay eggs.
4. Eggs are passed with faeces and contaminates pasture.
5. The eggs hatch into larvae that attach to soil or pasture, which in turn is ingested by a horse.

Overall students did not understand the life cycle in this question. Many detailed the horse ingesting eggs and not larvae. These are a component of applying parasite control measures and pasture management practices, and students need to know the different parasite life cycles.

Question 15a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 55 | 31 | 13 | 0.6 |

Any two of the following developmental orthopedic disease (DOD) clinical signs:

* lameness
* swelling of joints
* stiffness of joint
* pain when joint is bent.

Limb deformities were not awarded a mark as they are not a clinical sign.

Question 15b.

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 29 | 71 | 0.7 |

Any one of the following:

* young horses
* growing horses
* foals
* weanlings
* yearlings.

Question 15c.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 26 | 40 | 34 | 1.1 |

Any two of the following:

* mineral excess, protein excess, mineral deficiency, overfeeding zinc interferes with the absorption of copper creating a mineral deficiency.
* high calcium diets also lead to a deficiency in other essential minerals.
* horses that are overfed high grain diet to promote rapid growth are at risk of DOD.
* calcium to phosphorous ratio should be 1:1 to 2:1.

Overall students had a general understanding of DOD and feeding practices.

Question 16

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 62 | 3 | 34 | 0.8 |

* Complex – long chains of sugar (3 or more), takes longer to break down and longer source of energy, takes longer to digestion and absorb.
* Simple – mono or disaccharides (1 or 2) chain, quicker and easier digestion, quicker source of energy.

Most students could not identify the difference between simple and complex carbohydrates.

Question 17a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 11 | 21 | 68 | 1.6 |

Any two of the following clinical signs of colic:

* flank watching
* excessive or frequent rolling
* sweating
* pawing
* dog sitting
* stretching of abdominal region
* kicking at stomach
* lying down
* backing into a corner
* curling lip up
* restlessness (getting up and down)
* agitated
* little or no passing of manure.

Question 17b.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | Average |
| % | 3 | 7 | 31 | 17 | 43 | 2.9 |

Any two of the following health checks:

* rectal temperature: expected to be high (fever); elevated temperature could indicate there is a problem or stress
* heart rate: would be elevated; could indicate pain, stress, shock
* listen for gut noise: excess could indicate (spasmodic) colic, gut doing too much; no gut noise could indicate lack of movement of bowl/obstruction
* capillary refill / skin tenting: possible dehydration, impaction
* respiration: elevated over 20 breaths/minute.

Question 17c.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 19 | 38 | 43 | 1.2 |

Any two of the following checks:

* in the paddock/surroundings to check if the horse has passed any faeces recently; examine the amount and consistency
* signs of spoiled food
* excess intake of feed
* any poisonous plants
* any new food items
* that the water is fresh and available
* whether the horse has not eaten
* if there is sand in paddock
* if the horse has been chewing bark, trees, fences or rubber bins.

Question 17d.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | Average |
| % | 21 | 52 | 27 | 1.1 |

Any two of the following factors:

* if the signs persist for more than 30 minutes
* if the horse’s condition worsens
* if the symptoms are very severe (high heart rate, fever or known access to toxins, increased intake of grain etc.).

Overall, the majority of students had a clear understanding of colic and the health impacts and management practices.

Question 18

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Average |
| % | 9 | 10 | 16 | 20 | 15 | 12 | 10 | 4 | 5 | 3.5 |

To achieve full marks responses needed to include:

* overall balance, i.e. length of leg is in proportion to barrel (balance) / long through barrel / small head / short neck in comparison to body / downhill build, creating more weight on forehand
* desirable conformation features – neck joins into chest well / shoulder angle is okay / openness through jowl / well-sprung ribs / hock correct / well-defined wither / clean straight legs / good or ample bone / cannon well-proportioned / well-muscled hindquarters
* undesirable conformation features – croup high / pasterns upright / tied in at the knee / shoulder angle is upright or steep / long back / weak coupling
* how these features would impact this horse’s way of going, for example:
* upright could lead to the horse having a short, choppy stride
* long in the back means that the horse will find it harder to bring its hind legs under itself and to collect
* tied in at the knee or back at the knee will increase stress on tendon
* upright pastern will mean a more concussive force during movement
* hock, for power and engagement, impulsion
* croup high on forehand, harder for engagement
* straight legs will mean less interference.

Overall students could identify desirable and undesirable conformation features; however, many had difficulty with this extended-response question. For full marks students were required to address all aspects of the question; they would benefit from point form and subheadings to ensure they have clearly addressed all elements of the question. This would also avoid going off topic and having contradictions within the response.

Following is a high scoring response.

Horse has clean straight legs reducing probability of lameness and allowing for clean movement. The angle of the shoulder is a little steep slightly limiting length of stride and range of movement. The hindquarters slope well although the tail is set high possibly interfering with collection and roundness. The horse is slightly bum high as seen in the image and has an overall downhill balance interfering with elevation and collection work. The horse also has a long back making collection work difficult.