2016 VCE VET Equine Studies examination report

General comments

In general students performed well on the 2016 VET Equine Studies examination, with the majority of students attempting all questions. Some students demonstrated a high level of underpinning knowledge across all units of competency. However, there were many students who lacked a thorough understanding of horse health and welfare practices, which was highlighted in both sections of the examination.

Students and facilitators need to be mindful that the content of the examination is based on the standards of practice for the industry, with an understanding that the industry adapts the standards for practical application. It was apparent that many students understood the practical applications; however, lacked knowledge on the standards of practice.

In Section B, many students gave generalised answers, in particular with responses that required specific terminology. Answers that were too generalised or insufficient to demonstrate understanding of the question were not awarded any marks.

Students need to take care to read questions carefully, in particular scenario and relationship-style questions, to maximise marks, paying attention to wording in the question. Many students lacked understanding when addressing equine form and function questions, and gave answers that addressed only part of the question.

The VCAA website provides past examinations and examination reports with answers. These are valuable resources for preparation for undertaking the end-of-year examination. Students are advised and strongly recommended to use these resources to gain understanding of question types and appropriate answers.

The 2016 written examination covered the following units of competency:

- VU21402 Implement horse health and welfare practices
- VU21403 Implement and monitor a horse feeding program
- VU21404 Relate equine form and function
- VU21406 Equine physiology.

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. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	% No Answer	Comments
1	98	1	1	0	0	
2	6	59	32	3	0	
3	93	4	0	2	0	
4	1	1	91	6	1	
5	7	2	74	16	0	
6	19	6	2	73	0	
7	46	19	23	12	0	Homeostasis is the balance of water, pH and electrolytes. Some students chose blood, water and electrolytes, but the key factor is the pH level of the internal environment.
8	1	1	13	84	0	
9	59	20	15	6	0	
10	11	60	1	28	0	
11	90	1	7	1	0	
12	2	8	5	84	1	
13	56	43	1	0	0	The standard practice is a minimum of two hours between feeding and working a performance horse. While there are industry practices of one hour, this is not a standard practice. It is important that students are familiar with the standards of practice for the industry and understand that there are adaptations within the industry on a practical level.
14	10	16	51	22	0	
15	6	7	39	48	0	Transporting horses over long distances without a break can seriously impact a horse's respiratory system, due to its inability to stretch its neck down to remove mucus, containing bacteria and debris, away from the lungs. Failure to remove the mucus enables the entry of the bacteria via gravity from the upper respiratory tract into the lungs and predisposes travelling horses to respiratory conditions such as pneumonia and pleuropneumonia.
16	4	93	2	0	0	
17	69	7	11	11	1	
18	17	5	27	51	0	
19	13	4	43	40	0	Mud fever, greasy heel and rain scald are examples of infection of the skin that give the appearance of scabs, caused by a microorganism in conjunction with a constant damp environment and in some cases humidity. Dermatitis is an inflammation of the skin.
20	11	13	73	2	0	

Section B

Question 1

Marks	0	1	Average
%	35	65	0.7

A blemish is an acquired mark or scar that is considered unattractive, but it has no impact on the soundness or performance of a horse. Whereas an unsoundness may be the result of an injury, accident or conformation fault that has a negative impact on the horse's performance or ability to work.

Students needed to identify the difference – that an unsoundness affects performance of the horse, whereas a blemish does not.

Question 2

Marks	0	1	2	3	4	Average
%	16	2	16	14	53	2.9

Any two of:

- adequate roughage in diet/minimum 50% – required for proper gut function
- feed in relation to age/condition/workload – to avoid overfeeding or underfeeding
- feed little and often – horse has small stomach and is used to constant grazing
- reduce grain on days off in working horses – prevents azoturia
- use good-quality feed, not dusty/mouldy – to avoid respiratory or digestive upsets
- change diet gradually over a period of 7–10 days – sudden changes can kill off gut bacteria and cause colic/diarrhoea
- clean fresh water available at all times – prevents dehydration and problems like choke and impaction colic
- feed at the same time/place each day – horses like routine and can become stressed
- regular dental care – to avoid feeding/digestive problems like choke and to ensure teeth can break down grains sufficiently
- regular worming – to prevent problems with health and digestion
- segregate paddock-fed horses by age, body type, condition – to minimise pecking order effects
- spread bins out and put out extra feeds with paddocked horses – to allow less dominant horses to feed
- ensure feed is kept in an airtight container – to prevent vermin and mould.

Students were required to identify two practices and give a reason for each.

Question 3a.

Marks	0	1	2	Average
%	3	20	77	1.8

Any two of the following signs, for the selected condition:

- colic – rolling, pawing, biting/looking at flanks, kicking at belly, getting up and down excessively, sweating, abdominal pain, distress, loss of appetite, depression, elevated pulse rate, no gut sounds, reluctance to eat
- acute diarrhoea – very loose watery bowel motion, elevated temperature with colic-like signs, foul-smelling loose droppings, blood/mucus in loose droppings, dehydration, lethargy, loss of appetite

- gastric ulcers – poor appetite, picky eater, decreased performance, reluctance to train, weight loss, poor or dull coat, lying down a lot, loose faeces.

Question 3b.

Marks	0	1	Average
%	22	78	**0.8**

Any one of the following causes, for the selected condition:

- colic – overfeeding, sudden change of feed, contaminated feed, impaction through dehydration/lack of water, twisted or strangulated bowel, ingestion of sand, stress
- acute diarrhoea – bacterial infection, viruses, overuse of antibiotics, sudden change in feed especially grain, excessive consumption of lush pasture, sand in large intestine, heavy infestation of small strongyles, stress, ingestion or overload of weeds (toxicity), insufficient fibre in diet
- gastric ulcers – high grain diet, stress, insufficient access to roughage.

Question 3c.

Marks	0	1	2	Average
%	23	30	46	**1.2**

Any one of the following parts of the digestive system, for the selected condition:

- colic
  - stomach – can become distended by large amounts of grain and cause pain
  - small intestine – severe contractions cause pain
  - small intestine – can become twisted and cause severe pain
  - small intestine – heavy parasite burden can damage blood supply and decrease motility of the digestive tract and cause pain
  - large intestine – can become displaced/distended by excessive gas build-up produced by bacteria and cause pain
- acute diarrhoea **–** mucous membrane of caecum or colon – absorption or secretion of water is disturbed and results in substantial loss of water through diarrhoea
- gastric ulcers – upper part of stomach – it has little protection from gastric acid, and the acid causes ulcers and associated pain and discomfort, often during eating or through ‘acid splash’ during exercise.

If the selected condition was colic, students needed to identify the small or large intestine, not just the intestine, as the question asked for the specific part of the digestive system. The choice of either small or large intestine affected the impact of the condition.

Question 3d.

Marks	0	1	Average
%	32	68	**0.7**

- colic – walk, monitor vital signs, let horse rest not roll; if no improvement in 20 minutes, call vet
- acute diarrhoea – give good-quality roughage and plenty of fresh water; call vet
- gastric ulcers – frequent feeding of antacids for immediate relief, 500 grams of lucerne chaff before exercise to buffer acid and reduce acid splash, reduce grain component and continual access to good quality hay; consultation with vet for scoping.

Many students identified ‘call the vet’ as the initial treatment. ‘Initial’ means occurring in the beginning as the first step or process. A vet might be called later; however, the initial treatment relates to the treatments detailed above for each condition.

Question 3e.

Marks	0	1	Average
%	27	73	**0.7**

Responses needed to be related to the cause specified in Question 3b.

- colic – do not overfeed, with grain particularly; feed little and often; feed adequate roughage, with minimum of 50% of diet via hay or pasture; give access to clean, fresh water at all times; regularly worm; change feed gradually
- acute diarrhoea – use antibiotics only when necessary; ensure uncontaminated source of fresh water; change feed gradually, especially grains; regularly worm to control parasites; feed sufficient fibre
- gastric ulcers – do not stable horse 24/7; give free access to good-quality lucerne hay to mimic natural grazing; reduce grain component by adding fat; feed little and often; reduce stress by allowing horses social contact

Question 4

Marks	0	1	Average
%	55	45	**0.5**

One of: severe internal or external bleeding, extensive wounds, severe burns, traumatic accidents (such as being hit by a car).

Many students did not answer this question correctly. Trauma as an answer on its own was not awarded a mark. Shock is in response to a severe physical impact to the horse; students needed to identify a circumstance that would trigger this reaction.

Question 5a.

Marks	0	1	2	3	4	Average
%	15	3	15	11	56	**2.9**

Conformation feature 1 – A sloping shoulder and 45-degree hoof-pastern axis – sloping shoulder allows a greater length of stride and free forward motion and pastern angles means better concussion absorption, which means the rider has a smoother ride.

Conformation feature 2 – A straight shoulder and upright pasterns – straight shoulder means shorter, choppier strides and upright pastern reduces concussion absorption, so rider has a bumpy, jolting or jarring experience.

Question 5b.

Marks	0	1	2	Average
%	13	38	49	**1.4**

Conformation feature 1

One of:

- thoroughbred
- warm blood
- Arabian

- Australian stockhorse.

Conformation feature 2

One of:

- Shetland
- Clydesdale
- Percheron
- draught horse.

Many students did not give a correct breed for conformation feature 2. Detailing quarter horse as an example of this did not receive a mark, as this breed does not have straight shoulder characteristics.

Question 6

Marks	0	1	2	3	Average
%	1	7	36	56	**2.5**

- Individual rations are detailed on a whiteboard or in a feeding record book that is easily accessed and understood.
- Feed components are clearly labelled.
- Whiteboard is used in feed room, and it has a map of stables, yards and paddocks that is labelled with numbers that correspond to those on the stable doors, yard and paddock gates.
- Feeding containers are also numbered.
- Stabled horses may have names on stable doors and feed bins.
- Weigh feed/use scales.

Question 7

Marks	0	1	Average
%	28	72	**0.7**

Empty out any leftover feed, clean/wash out feed bin, record details and report to supervisor.

Students need to read questions carefully. This question required students to outline a hygiene practice routine, not how to introduce a new feed.

Question 8a.

Marks	0	1	2	Average
%	62	31	7	**0.5**

Any two of:

- heavy/coarse/wavy/long hair coat that fails to shed
- excessive drinking
- pot-bellied appearance
- loss of muscle over topline
- fat deposits on crest/above tail/above and behind eye.

Some students answered this question correctly; however, many students lacked familiarity with the disease. Detailing ‘long hair’ did not receive a mark, as the answer needed to include ‘fails to shed’. ‘Sway back’ as a visible indicator did not receive a mark, as this is a distinctive conformation fault and not indicative of Cushing’s disease.

Question 8b.

Marks	0	1	Average
%	74	26	0.3

Tumour on/dysfunction of pituitary gland, which affects production of cortisol

Many students did not understand the cause of Cushing's disease. Students who responded with 'tumour' as an answer did not receive a mark; the answer required the location of the tumour.

Question 8c.

Marks	0	1	Average
%	41	59	0.6

Endocrine system

Question 8d.

Marks	0	1	Average
%	90	10	0.1

One of:

- recurrent dental/skin/respiratory infections
- tendon sheath or joint infections due to compromised immune system
- chronic laminitis
- head tilting/blindness.

Many students made a number of generalisations that were not specifically linked to Cushing's disease.

Question 9a.

Marks	0	1	Average
%	9	91	0.9

One of:

- the horse is cast/has cast itself
- the horse is stuck against the stable wall
- the horse is unable to reposition/roll over, as it is too close to the wall.

Question 9b.

Marks	0	1	Average
%	66	34	0.3

- Building up/ramping up the straw or shavings around the walls to prevent horse from getting stuck.
- Fit horse with an anti-cast roller.

Many students did not answer this question correctly. Although most students could identify that the horse was cast in Question 9a., few students could detail the preventive procedure or routine.

Question 9c.

Marks	0	1	2	3	Average
%	18	34	40	9	**1.4**

- Minimum two-person job (don't attempt this on own).
  Ropes attached around pasterns of fore and hind limbs closest to the ground and then horse pulled or rolled over to regain its feet.
- Hazards – wear PPE helmets/gloves/boots, as horse may struggle/thrash/panic/kick out.

Question 10a.

Marks	0	1	2	Average
%	38	31	31	**1**

Poll – flexion at the poll creates a rounding of the back to enable engagement of hindquarters, which in turn creates elevation of the forehand.

Hock – flexion necessary in weight-bearing phase of engaged hindquarters, which leads to elevation of forehand/centre of gravity shifts back, which means greater weight on hock joints so flexion is necessary to bear this. Post-legged/straight hocks will limit hock flexion ability.

Question 10b.

Marks	0	1	Average
%	29	71	**0.7**

Poll

One of:

- short/thick/ewe/swan neck – makes it very difficult to round the neck
- thick throatlatch – blood and airflow restricted when horse tries to flex at the poll.

Hock

One of:

- Cow hocks or camped out will limit capacity to step under body and bear sufficient weight to allow elevation of forehand.
- Sickle hocks lack support of lower leg and compromise the hind legs' ability to weight-bear and engage hind quarters.

Overall students answered this question very well, with a clear understanding of flexion, engagement and elevation, and could identify the conformation faults that would impact on good flexion.

Question 11a.

Marks	0	1	Average
%	47	53	**0.6**

Sweating

Question 11b.

Marks	0	1	Average
%	64	36	**0.4**

Integumentary/skin system

Many students did not answer Question 11a. correctly, and as a result identified the incorrect physiological system in Question 11b.

Question 11c.

Marks	0	1	2	3	Average
%	63	10	10	17	**0.8**

Any three of:

- sodium
- potassium
- chloride
- magnesium
- calcium
- glucose.

Many students did not read the question correctly. The question was asking for components, and generalised responses such as ‘water’ and ‘feed’ did not receive a mark.

Question 11d.

Marks	0	1	2	Average
%	15	42	43	**1.3**

Any two of:

- dehydration
- poor recovery
- failure to perform/lacking energy to perform
- tying up/azoturia
- thumps/synchronous diaphragmatic flutters/hiccups
- fatigue
- kidney/renal failure
- colic.

Question 12a.

Marks	0	1	Average
%	25	75	**0.8**

Choke/oesophageal obstruction

Question 12b.

Marks	0	1	Average
%	43	57	**0.6**

Oesophagus

Many students did not answer this question correctly. A response of 'throat' was considered too generalised and did not receive a mark.

Question 12c.

Marks	0	1	2	Average
%	23	38	38	1.2

Any two of:

- poor teeth/food not chewed sufficiently/dental problems
- dehydration/inadequate water supply leading to inadequate production of saliva to moisten food
- bolting food
- contamination such as dust or particles
- obstruction/food lodged in the oesophagus.

Students gave varied responses for this question. Overall, students could identify at least one cause of this condition.

Question 13a.

Marks	0	1	2	3	4	5	6	Average
%	1	1	8	25	27	30	7	4

- Clean the wound – trim hair around the wound to prevent irritation, wash/hose the wound to remove any debris, pat dry.
- Dress the wound – apply topical application of antibacterial/antiseptic spray/lotion/ointment to prevent infection/apply non-stick dressing/pad/gauze.
- Bandage the wound – apply support bandage to lower limb to prevent knee bandage from slipping; must use a wrap under bandage then apply bandage over non-stick dressing/pad/gauze to wound and bandage in a figure-eight pattern to allow knee to flex.

Question 13b.

Marks	0	1	2	Average
%	10	41	48	1.4

Any two of:

- properly dispose of any biohazards
- clean all the equipment and medications and return to the first aid cupboard
- record information about injury and treatment
- report to supervisor
- check on horse a short while later to check for heat, swelling and tightness of bandages.

This question was generally well answered.

Question 14a.

Marks	0	1	2	Average
%	37	32	32	1

Any two of:

- hind legs step well under the body
- croup lower then forehand
- horse has an 'uphill' appearance

- increased flexion of hind limb joints/hock/fetlock in weight-bearing phase
- flexion at poll.

Question 14b.

Marks	0	1	2	Average
%	49	26	24	**0.8**

- The ability to show extension – to extend, the horse needs increased thrust/weight-bearing of hindquarters/impulsion from the engaged hindquarters.
- The ability to show elevation – to elevate, the horse shifts its balance back and takes more weight on the hindquarters, which allows the forehand to elevate/lift/raise.

Overall, students had a good comprehension of Question 14a., but many students lacked an understanding of how engagement linked to extension and elevation in their responses for Question 14b.

Question 15

Marks	0	1	Average
%	40	60	**0.6**

Metabolism

Question 16a.

Marks	0	1	2	3	4	Average
%	37	34	21	7	1	**1**

Any three of the specifics and one reason:

- tips of ears/ears
- eyelids
- muzzle/lips/nose
- white leg markings.

Reason: lack of pigmentation/white/pink skin.

Many students lacked understanding in their knowledge of St John's wort and the impact it would have on a cremello horse.

Question 16b.

Marks	0	1	2	Average
%	18	48	34	**1.2**

- Remove horse from paddock.
- Keep out of sun/use sunscreen.

Overall, students showed a good understanding of how to manage this scenario.

Question 17a.

Marks	0	1	2	Average
%	29	39	32	**1.1**

- Problem – bone spavin/ arthritis/calcification/ bog spavin.
- Joint affected – hock.

Most students could name the joint; however, many lacked understanding of possible problems associated with the joint detailed in the image.

Question 17b.

Marks	0	1	2	Average
%	21	48	31	**1.1**

Any two of:

- affected hindquarter carried lower
- drags/carries toe lower
- decreased hock action/stiffness
- shortened forward flight/track up/shorter stride.

Overall, students demonstrated a good understanding of this question. Generalised answers such as ‘lameness’ were not awarded a mark, as the question asked for ways the movement would be affected.

Question 18

Marks	0	1	2	3	4	Average
%	33	16	21	19	11	**1.6**

- starch
- fibre
- protein
- fat

Students must read questions carefully. The question specifically noted that students should ‘not’ name individual feedstuffs.

Question 19

Marks	0	1	2	3	Average
%	58	25	12	6	**0.7**

Students needed to identify one example of unsoundness related to the conformation fault sickle hocks to be awarded a mark. For two marks, students were required to explain why the unsoundness occurs. If the unsoundness example was not related to sickle hocks, students were not awarded any marks.

- Curb – due to excessive strain on the plantar ligament through reduced angle of the hock.
- Bone spavin – uneven loading of the hocks producing greater compressive stress/concussion on the joint, resulting in overgrowth of bone.
- Back sprain – due to concussion, excessive strain due to being unbalanced.
- Hock sprain – excessive stresses placed on the hock joint due to uneven weight causing inflammation.
- Navicular-related problem – due to stress on ligament below point of hock causing uneven loading on hoof.
- Heel problems – increased concussion as heel hits ground first can increase issues with heel and lameness depending on degree of angulation.

Question 20

Marks	0	1	2	3	Average
%	15	25	33	27	**1.7**

The explanation needed to include an example of one type of horse for each:

- hot-blooded – thoroughbred/Arabian/Akhal-Teke/Barb/Anglo-Arabian
- warm-blooded – Danish/Dutch/Hanoverian/Holsteiner/warm blood/Irish Draft/Lipizzaner/Trakehner/Andalusian/Cleveland Bay/quarter horse
- cold-blooded – draught/Shire/Percheron/Friesian/Clydesdale/Suffolk Punch/Shetland/Icelandic.

Explanation of differences should have made reference to temperament, metabolism, stamina, speed, athleticism, coat quality (fine/coarse), thin-skinned/thick-skinned/capacity for greater heat loss during exercise and conformational aspects in relation to purpose.

Overall, students had a good understanding of each type of horse; however, many students gave explanations that lacked familiarity with breed characteristics or knowledge of breed origins or purpose.