



2013 VCE VET Equine Industry GA 2: Written examination

GENERAL COMMENTS

The 2013 VCE VET Equine Industry written examination assessed the elements, performance criteria and underpinning knowledge and skills in the following units of competency.

- RTE2014A – Carry out regular horse observation
- VPAU322 – Respond to equine injury and disease
- SROEQ008A – Determine nutritional requirements for horses
- VPAU323 – Relate equine form and function
- VPAM325 – Equine anatomy and physiology

High-scoring students answered questions well and showed sound underpinning knowledge, but few students scored highly across all questions.

Students should be aware that instructions to ‘list’, ‘briefly explain’ and ‘describe’ are all different, and each requires a different approach. A lack of knowledge of physiological systems and basic equine anatomy was evident. Awareness of the required skills and knowledge and how these relate to the elements, performance criteria and range statements listed in each unit of competency is essential. There also appeared to be a lack of clarity among students in understanding the difference between a hazard and a risk in occupational health and safety (OH&S) relevant to the equine industry.

In Section B the general approaches below were followed in allocating marks.

- If three responses were required and five were given, only the first three were considered. Examination techniques require selective processes, thus students should demonstrate their knowledge by selecting what they consider to be the best three responses, rather than listing numerous possibilities.
- If answers were contradictory, or repetitive, full marks could not be awarded. Students needed to consider what they wrote more carefully to avoid negating a previous statement.
- If a response did not address the question, it was not awarded any marks.

Past exams and relevant exam reports with answers are available on the VCAA website. These are valuable resources for practice at exam writing and preparation prior to undertaking the end-of-year examination. Students are advised to use these resources.

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 errors resulting in a total 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	2	1	1	95	1	
2	39	11	37	12	1	Options B and D were acceptable as both marshmallow and ryegrass can cause staggers, although ryegrass staggers in horses is considered rare. These two plants are categorised as causing nervous disorders, whereas St John’s Wort fits into the category of having toxins that produce photosensitivity. The major sign of St John’s Wort poisoning is open skin lesions or sores due to photosensitisation.

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Question	% A	% B	% C	% D	% No Answer	Comments
3	6	62	21	10	1	
4	42	30	15	13	1	An optimum time frame for increased success with the suturing of a wound is widely accepted in the industry as being up to six hours after the injury (option B). Certainly, the sooner the better, but the window of opportunity remains open for six hours after the injury and this is referred to as the 'golden period'.
5	71	7	9	13	0	
6	4	29	66	1	0	
7	1	11	69	20	0	
8	1	1	97	2	0	
9	34	51	7	8	0	Amylase is the enzyme that assists with carbohydrate digestion, lipase is the enzyme that assists with fat digestion, sebum is an oil produced by the sebaceous glands in the skin, keratin is a fibrous protein that makes up hoof wall structure and glucose is sugar, so a process of elimination would have verified that amylase and lipase (option B) was the correct answer.
10	19	4	5	71	1	
11	4	19	9	67	1	
12	86	1	2	10	1	
13	3	6	16	75	1	
14	49	45	1	5	1	Fibre (option A) was correct as fibre can provide energy as well as playing the important role of being a filler, which fats and oils cannot as they do not fill the gut and create bulk, which horses need.
15	36	48	8	7	1	Lamina (option B) refers to the thin layer of sensitive tissue in the horse's hoof; the other three options were bones.
16	9	0	4	87	1	
17	0	1	47	51	1	
18	72	2	17	8	1	
19	37	14	27	22	1	
20	7	8	56	29	1	Crossfiring (option C) is the striking of the opposite foreleg.

Section B

Question 1

Marks	0	1	2	3	4	Average
%	1	3	14	32	50	3.3

Students generally answered this well. However, a number of students did not recognise that visible signs are signs that can be seen and are different to vital signs, which are established by measurements such as heart rate, respiration rate, temperature and capillary refill time. No marks were awarded for vital signs other than respiration rate as this can be determined visually by watching the horse's flanks.

Answers could have included any four of the following.

- dejected appearance
- change in behaviour or abnormal behaviour
- tucked-up stance; head down
- isolated from herd (paddocked horses)

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- lethargic behaviour
- listless, dull expression
- loss of appetite
- reluctance to move
- rolling, pawing or kicking at stomach
- limping or lameness
- resting a foreleg
- leaning back on forelegs
- saw-horse stance (tetanus)
- swelling(s) on leg(s)
- dull coat
- lumps on skin (allergic reaction)
- puncture wound
- sweating
- shivering
- coughing
- dyspnoea/audible breathing
- pale/dark mucous membranes
- dehydration (skin tenting test)
- dark brown/abnormal coloured urine
- excessive/green/yellow nasal discharge (not just 'nasal discharge' as most horses have a small amount of nasal discharge or moisture at any time).

Unusual/abnormal respiration rate was acceptable as it can be determined visibly.

Industry language terms needed to be used, and reference to the horse's 'mood' was not considered acceptable, but 'abnormal attitude' or 'abnormal behaviour' were considered acceptable answers as they were more informative industry terms.

Question 2

Marks	0	1	2	3	4	Average
%	1	2	11	31	55	3.4

Generally this question was answered well, with students identifying common hygiene practices relevant to stable environment workplaces in the industry. Providing clean water is a part of the Code of Practice for the Welfare of Horses requirements; however, clean water is essential for horse health. Several students listed wearing gloves to handle medications as a hygiene measure when it is more of an occupational health and safety measure.

Answers could have included any four practices from, or similar to, those listed below.

- Muck out stables thoroughly and regularly to keep boxes as hygienic as possible.
- Application of lime to neutralise odours.
- Regularly remove collected manure away from immediate stable environment.
- Regularly remove rubbish: empty feed bags/wasted feed to discourage vermin.
- Control vermin.
- Open windows and doors to provide good ventilation as often as possible.
- Keep stables clean by sweeping regularly to minimise dust.
- Ensure cleanliness of buckets and water tubs.
- Air and clean rugs when necessary.
- No sharing of buckets, feed bins, brushes, rugs or saddle blankets.
- Wash hands before entering or exiting stables.
- Isolate/quarantine sick horses.
- Use of specific containers for biohazardous materials (dressings, syringes).
- Handling sick horses last and changing clothes/washing hands afterwards.
- Rinsing bits with water after use.



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Question 3

Marks	0	1	2	Average
%	39	31	30	0.9

Students either answered Question 3 well, explaining that feed stuffs vary in particle size and density resulting in varying amounts of volume so weighing is more accurate, or they gave unclear explanations. The other major factor to consider is that commonly used scoop sizes vary and by weighing it is possible to accurately estimate required amounts according to the horse's weight.

Some students wrote explanations that lacked clarity and did not identify or express the reasons clearly.

Question 4

Marks	0	1	2	Average
%	68	28	4	0.4

Only a small number of students could provide the correct answer, which was the diaphragm and that it assists the thoracic cavity (which contains the lungs). Many did not read the question carefully, and their answers included various respiratory system organs.

Question 5

Marks	0	1	Average
%	52	48	0.5

The angle of the shoulder is the conformation aspect that generally relates to the length of a horse's stride. Many students answered this correctly. This is core knowledge in the anatomy and physiology area of the equine industry. A few students stated this fact and then added more incorrect information, which negated their knowledge. These students could not be awarded the mark as any answer is considered in its entirety.

Question 6

Marks	0	1	2	Average
%	7	48	45	1.4

This question asked students to identify two significant concerns relating to a puncture wound. Answers could have included any two of the following.

- infection
- risk of tetanus bacteria entering
- possibility of infection/penetration to the bone
- wound healing over before the puncture heals

Only a small number of students identified tetanus infection, which is the major risk with a puncture to the sole of a hoof, as tetanus bacteria live in the soil and the hoof is in constant contact with the ground.

Question 7

Marks	0	1	2	3	4	5	Average
%	20	11	11	9	22	27	2.8

Students did not read this question carefully enough. Many did not gain any marks as they merely listed factors, whereas the question asked students to 'Briefly explain five factors to consider when designing an individual feeding regime for a horse'.

Those who did answer this question generally answered well. It should be noted that height alone is not a factor in establishing a feeding regime, and was not accepted unless it was related to measuring a horse's weight. Workload, age, weight, breed, gender, reproductive state (in foal), environmental conditions, health status, metabolism, palatability or individual taste were acceptable factors, as was discipline if explained, and all of these were awarded marks if they were accompanied by an appropriate brief explanation.

Question 8

Marks	0	1	2	3	4	5	6	Average
%	25	23	20	13	12	6	1	1.9

Overall, this question was answered very poorly, with students giving vague general statements rather than facts. Some students referred (in all three stages) to the mare needing 'lots of vitamins' rather than appropriate vitamins in a

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balanced diet. Lots of energy prior to being served or in early stages of gestation was incorrect. ‘Lots of calcium’ or reference to calcium without mentioning phosphorus was also incorrect as these are crucial in a balanced ratio of 2:1. Again, this is essential knowledge.

Students needed to know (as underpinning knowledge) that during the last trimester, and during lactation, there is a higher demand for increased energy and protein, balanced vitamins and minerals – especially calcium and phosphorus – but otherwise basic dietary balance is required.

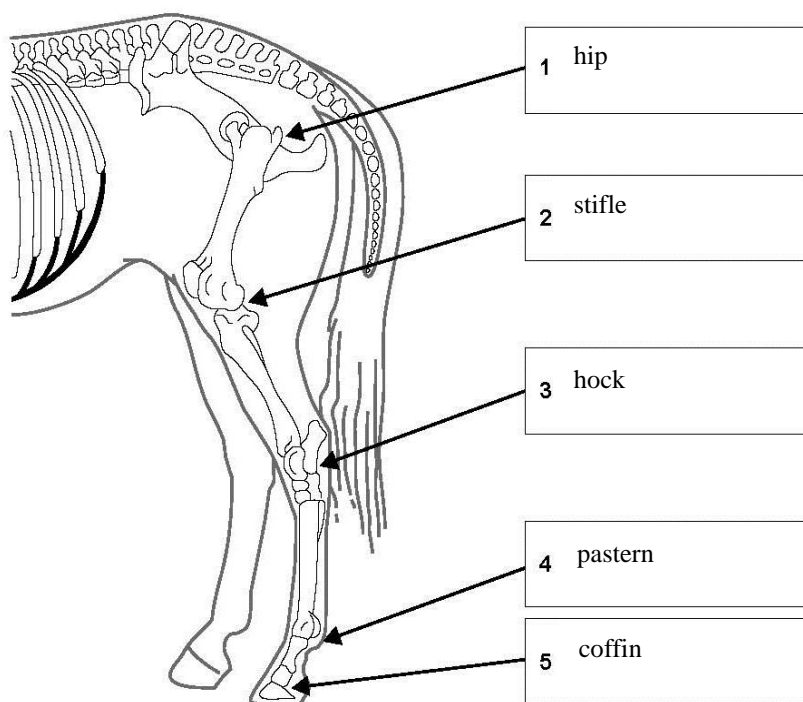
Prior to being served: A balanced diet with appropriate minerals and vitamins; not too much energy or fat (to maximise conception).

During gestation: No major changes needed for the first 6 months, but a balanced diet of minerals and vitamins is essential; increase in the last trimester when the requirements for energy, protein, calcium and phosphorus increase greatly.

During lactation: High protein diet with increased energy and a balanced diet of minerals and vitamins, especially calcium and phosphorus in balanced ratio.

Question 9

Marks	0	1	2	3	4	5	Average
%	15	12	17	25	22	9	2.6



Only a few students were able to identify all hind leg joints correctly. Many students incorrectly named individual bones, when in the instructions it was specifically stated to ‘Name the joint, not any individual bones.’

Question 10a.

Marks	0	1	Average
%	90	10	0.1

The question required students to ‘state the percentage range of weight that the forelegs bear’. The correct answer was 60–65%. A range refers to two figures. Many students gave only one, and many gave incorrect answers. This question

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tested knowledge of a basic anatomy and physiology fact. The forelegs bear more weight and are, therefore, more prone to injury.

Question 10b.

Marks	0	1	2	Average
%	24	24	52	1.3

A common conformation fault of the knee and its negative affect on the joint could have been identified as

- over at the knee – stress on carpal bones/knee joint; prone to arthritis
- calf knee or back at the knee – stress on knee joint, possibility of injury or bone chips, strain on muscles, tendons and ligaments, arthritis
- bench knee – strain on joint, possibility of injury and arthritis
- offset knee – depending on severity, strain on joint, arthritis possibility
- knock knee – strain on bones, tendons, ligaments, possibility of injury or arthritis
- tied in at the knee – poor circulation due to narrowness below the knee, may impact negatively on the horse's performance at speed or endurance

Some students named a knee fault using language other than accepted industry terminology; for example, a 'rolled-in knee' or 'undercut knee'. These lacked clarity and did not score marks.

Question 11a.

Marks	0	1	Average
%	46	54	0.6

The mark given in this question was for answers stating that as the injured off fore touched down, the horse's head was raised or 'bobbed up'. This is an accepted method in the industry of identifying a lame leg when one is suspected.

Question 11b.

Marks	0	1	Average
%	18	82	0.8

A further assessment that could be carried out prior to reporting this to an employer could have been any one of the following.

- Feel the leg for heat or swelling.
- Feel the near fore hoof to compare it to the off fore for comparison of warmth/heat.
- Check the sole for bruising or foreign objects, such as a stone.
- Use hoof testers to locate pain.
- Perform a flexion test.

A few students answered taking vital signs, which was not awarded a mark because this question required an answer relating to a simple check relevant to the leg or hoof as listed.

Question 11c.

Marks	0	1	2	Average
%	13	44	43	1.3

This question required students to show underpinning knowledge of abscess care. 'Lancing the abscess to let the pus out' was not acceptable and may, in fact, introduce more bacteria or cause further injury. Only a professional should do this if required. First-aid treatment is administered before a vet visit, so calling the vet was not an acceptable answer on its own – neither was giving the horse bute to relieve pain at this stage. Bute administered before a vet visit could mask signs, which would hinder a vet's diagnosis of severity.

Correct answers included two of the following procedures.

- cleaning and disinfecting the hoof
- applying a poultice, and attaching it using tape or a bandage
- placing the hoof in a bucket of ice to reduce heat or soaking it in salty water/Epsom salts and bran to draw out the infection
- confining the horse to reduce compression on the hoof/sole by limiting movement of the horse
- monitoring
- changing the bandage daily or as needed



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Question 12a.

Marks	0	1	2	Average
%	34	38	29	1

The major signs of a horse in shock included any two of the following.

- pale or blue mucous membranes
- slow capillary refill time
- a fast, weak pulse
- rapid breathing
- shaking/shivering/trembling
- cold extremities

Temperature was not acceptable, as there are many visible signs before taking a temperature. A large amount of bleeding was also not acceptable as this is not a sign of shock but a cause.

Question 12b.

Marks	0	1	2	3	4	Average
%	4	13	21	33	29	2.7

Successful answers included four of the following initial first-aid procedures to deal with a horse in shock before the vet arrives.

- Call for help.
- Consider personal safety and that of assistant(s).
- Catch/restrain the horse.
- Remove to a safe, secure area if possible.
- Apply pressure to any bleeding.
- Keep the horse warm.
- Keep the horse as still and calm as possible (do not encourage the horse to walk as further damage to unseen or internal injuries may result).
- If prostrate and horse is thrashing or tiring by trying to get up, sit on the horse's neck to prevent floundering and causing further injury or stress.
- Remove dangerous obstacles.
- Treat any injuries.
- Look for behavioural changes.
- Monitor vital signs.
- Unless dehydration is established, or a small sip only is allowed, giving water or food is generally best done after the vet has been. The coldness and sudden intake of a volume of water may cause further complications.

Some students referred to a horse in shock as 'being frightened of something'. Shock in horses is extremely serious and commonly associated with trauma, pain and/or infection, as well as major fluid loss. When a horse goes into shock, its body's response includes shutting down the circulatory system, depriving the body of oxygen and thus leading to major organ failure and eventually death. It is a life-threatening condition and far more critical than a horse being frightened.

Question 13

Marks	0	1	2	3	4	Average
%	15	27	21	23	14	2

This question was poorly answered. Students had to state two benefits of a process chosen from a list of four feed process types. Knowledge of the advantages and disadvantages of a variety of feed processes is a component of the Nutrition unit of competency.

'Releases more nutrients' was unacceptable, as it is incorrect. 'Makes the nutrients more easily available' was correct. Increases digestibility was correct.

Any two (or similar, but clear) of the following points were required.

- pelleted: gelatinises grain starch; increases fibre digestibility; horse can't sift through loose ingredients; cheaper manufacturing; economical; convenient; easy to measure and handle; balanced minerals/vitamins; complete feed



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- extruded: similar ingredients to pellets, ground but cooked with moist heat; starch gelatinisation is greater in extrusion than pelleting, can increase fat; heat can affect vitamins; more digestible physical form may decrease intake of feed; aids hind gut digestion; not cheaper
- crushed: no heat required for this processing; breaks down the hard outer shell of grain, reduces the size of seeds; aids the horse in chewing the feed; allows faster absorption of nutrients; increased digestibility
- micronised: the processing of grains by cooking with infrared heat then rolling or flaking improves gelatinisation of starch and palatability; promotes digestion in small intestine; removes dust from feed

Question 14

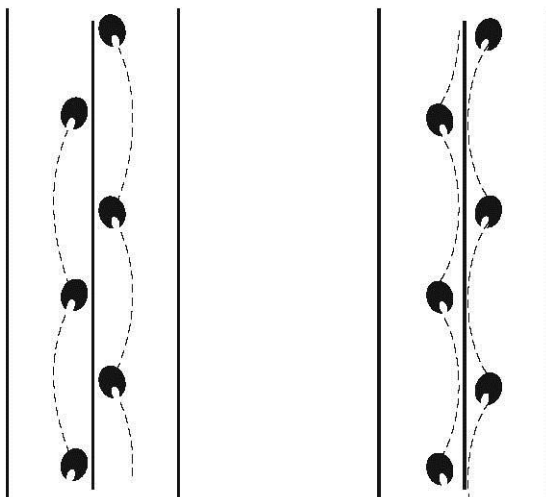
Marks	0	1	2	3	4	5	6	7	8	9	Average
%	1	1	4	9	12	20	20	19	10	5	5.6

This question presented a table of three digestive system organs and required students to complete the table providing two functions of the listed organs, and also state whether the digestive process involved for that organ was mechanical, chemical or microbial. Most students identified the process correctly, but there was a great variation in the identification of two functions for each organ. This is underpinning knowledge of the digestive system in anatomy and physiology. Acceptable answers included responses or close similarity if clear, to those in the table below.

Digestive tract structure	Function	Process
Mouth	Grind food, mix saliva, make a bolus, and swallow	Mechanical
Stomach	Mix stomach acid into food; Initial breakdown of food	Chemical
Caecum	Breaks down fibre and absorbs water	Microbial

Question 15a.

Marks	0	1	2	Average
%	40	29	31	0.9



padding or winging out

winging/winging in

Dishing was acceptable in place of 'padding'.

Question 15b.

Marks	0	1	2	Average
%	11	30	59	1.5

Most students correctly gave answers stating that gait faults are undesirable because they place stress on related tendons and joints, can compromise the horse's soundness and ability to perform its intended purpose long-term, and may cause

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interference or injury. Some students stated that gait faults ‘look unsightly’ or that they ‘create an uncomfortable ride for the rider’, which does not relate to how they affect the horse, as the question asked.

Question 16a.

Marks	0	1	Average
%	79	21	0.2

A zoonotic disease is an infectious disease that can be transmitted from animals to humans.

Question 16a. was poorly answered by many students, with a number stating it was a disease that could be transferred ‘between animals and humans’. This lacked specific reference to transmission to humans from animals. A number of students did not attempt this question.

Question 16b.

Marks	0	1	2	3	4	Average
%	51	4	9	15	20	1.5

Diseases could have included hendra virus, ringworm, brucellosis, leptospirosis and rabies, but no other zoonotic diseases appeared in answers given by students.

Many students incorrectly referred to strangles or EI, neither of which is a zoonotic disease. Those who did answer correctly generally listed hendra virus and gave appropriate signs.

Some students who identified hendra virus in their answer, listed ‘notify DPI’ as one management procedure. However, with a notifiable disease, the responsibility of notifying the DPI is a legal requirement of the vet who makes the diagnosis, not the property owner.

Question 16c.

Marks	0	1	2	3	Average
%	3	7	25	65	2.6

Most students were able to identify three management strategies to minimise the spread of disease on a property. Acceptable answers included any three of (or similar to) those listed below.

- Isolate and quarantine a suspect horse and any other horse that it has come into contact with.
- Isolate feed bins, hay nets and water buckets and any other equipment used on the horse, such as brushes or towels.
- Handle all other horses first.
- Wash hands and change clothes after handling diseased horse.
- Limit human contact to one person if possible.
- Vaccinate all other horses.

Question 16d.

Marks	0	1	2	Average
%	34	34	32	1

Students struggled to identify appropriate strategies required in this part of the question, and many simply listed more on property procedures when the question asked for two strategies for minimising spread from the property. Those who did distinguish between the two situations answered this well. Answers included stopping or limiting movement of horses on or off the property; any that do have to enter must avoid the quarantine area; notifying nearby properties; advising necessary impending visitors; having feed deliveries left at the gate.

Question 17

Marks	0	1	2	3	Average
%	4	10	33	53	2.4

Any three of

- dished face/head
- broad forehead
- deep jowls, deep/large cheeks
- curved through throat, fine gullet
- narrow muzzle, large nostrils

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- large eye
- small/neat/pricked/inwardly curved ears
- elegant neck
- high-set neck
- fine build
- one less rib (17 instead of 18)
- one less lumbar vertebrae (in 30% cases, instead of six)
- 15 tail vertebrae (instead of 18)
- short back
- horizontal croup
- high tail set/carriage
- hardy hooves (considered large for their size in the Arabian standard of excellence)

Most students were successfully able to identify three physical characteristics of the Arabian breed.

Question 18

Marks	0	1	2	3	4	5	6	Average
%	14	10	15	19	14	12	16	3.1

Restraint method	Hazard	Risk
Halter and lead rope	The rope could get caught around the handler's hand.	The handler could get rope burn.
Twitch	The handle of the twitch if the horse throws its head.	The handler could get hit with it, causing injury, possible facial injury.
Crush	Arms put into the crush through metal bars.	Injury to handler's arm, possible broken arm.

Students needed to identify a hazard (the cause of a risk) and a risk (exposure to the chance of injury). There needed to be a possible injury (risk) consequence mentioned, and the risk needed to refer to the handler or assistant specifically, as OH&S is about reducing injury to humans in the industry through awareness of hazards, risks and safe work practices. Possible injuries to horses were commonly mentioned, but injury to humans or the handler scored marks. A link between the hazard and the risk was expected.