

# 2019 VCE VET Equine Studies examination report

## General comments

The 2019 VCE VET Equine Studies written examination contained a variety of questions, covering content from 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

Overall, students performed better in the multiple-choice section of the examination than in Section B. Generally, students displayed a good understanding of equine physiology and health-related issues in the multiple-choice component of the examination. However, in Section B, students were sometimes unable to demonstrate their understanding and practical application in their responses; answers were too generalised or did not relate to the question and could not be awarded marks.

Students could identify a zoonotic disease in Section A but in section B many were unable to identify one equine skin condition that is caused by the papilloma virus and describe a treatment for this condition.

Different conformation features were well identified but breed features and the application of function were not well understood.

## 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	%N/A	Comments
1	5	7	1	87	0	
2	11	6	81	3	0	
3	1	4	94	0	2	
4	38	41	10	10	1	Students appeared confused about the correct footfalls for this question.
5	0	3	1	96	0	
6	6	9	25	60	1	
7	65	3	28	4	0	
8	6	55	4	35	0	
9	6	88	1	6	0	
10	15	6	72	6	0	
11	38	18	12	32	0	Volatile fatty acids are a by-product of the horse digesting and breaking down of cellulose found in foraging, and then fermented in the hindgut. Students may have confused this with the lactic acid that is produced as part of the fermentation process of grain.
12	92	6	3	0	0	
13	4	69	6	21	0	
14	17	23	39	22	0	Students had difficulty identifying two bones (navicular and second phalanx) that make up the coffin bone.
15	6	3	5	86	0	
16	53	5	38	5	0	
17	64	13	11	12	0	
18	3	12	40	45	0	
19	7	58	27	8	0	
20	62	6	17	14	0	

## Section B

### Question 1

Marks	0	1	2	3	Average
%	8	26	28	37	2.0

The correct answers for normal ranges were:

- temperature 37–38 °C (plus or minus 0.5 °C)
- pulse 30–40 beats per minute (bpm) (plus or minus 5 bpm)
- respiration 8–24 breaths per minute.

Students had a mixed understanding of vital signs. While a range was required, many students elected to write a definitive single figure answer.

**Question 2a.**

Marks	0	1	2	Average
%	30	39	31	<b>1.0</b>

Correct answers included the following:

- ill-fitting harness
- poor tack cleaning / dirty gear
- poor grooming causing rubbing on skin.

**Question 2b.**

Marks	0	1	Average
%	29	71	<b>0.7</b>

Correct answers included:

- wash, dry and apply topical medicine
- spell until gall heals
- apply drying agent
- apply hot/cold packs.

**Question 2c.**

Marks	0	1	Average
%	31	69	<b>0.7</b>

Correct answers included:

- clean girths after use
- groom properly
- fit gear properly
- sheepskin cover.

**Question 3**

Marks	0	1	2	Average
%	35	53	13	<b>0.8</b>

While students had a basic concept of the difference between volume and weight, few responses explained the relationship between the weight of the horse, workload and energy requirements.

**Question 4**

Marks	0	1	2	Average
%	67	31	2	<b>0.4</b>

Causes of anaemia in horses include:

- reduced production of red blood cells
- chronic inflammation
- rapid blood loss.

**Question 5**

Marks	0	1	2	Average
%	22	45	33	1.1

Correct answers included:

- angle of shoulder
- angle of pastern.

**Question 6**

Marks	0	1	2	Average
%	59	22	19	0.6

Poll and hock are both parts of a riding horse that need good flexion.

**Question 7a.**

Marks	0	1	2	Average
%	11	40	49	1.4

Marks were allocated for explanations that included:

- bicarbonate and amylase in saliva or saliva – chemical breakdown of food
- the horse chewing food / mechanical breakdown.

**Question 7b.**

Marks	0	1	Average
%	86	14	0.2

Stomach capacity is about 10 per cent of the whole equine digestive system.

**Question 7c.**

Marks	0	1	2	Average
%	84	8	8	0.3

Correct answers included:

- pepsin – breaks down proteins
- lipase – breaks down fat.

**Question 7d.**

Marks	0	1	Average
%	88	12	0.1

The main function of the equine small colon is to reclaim excess water from food processed by the stomach.

**Question 8**

Marks	0	1	2	Average
%	64	10	26	0.6

Correct answers included:

- warts, which can be treated with wart cream from a vet, laser or cryosurgery
- sarcoids, which can be treated with chemotherapy, surgery, laser surgery or heat therapy.

**Question 9**

Marks	0	1	2	3	4	5	Average
%	17	19	38	9	13	4	<b>2.0</b>

For full marks, students were required to describe the five stages in the life cycle of a botfly:

- the fly lays eggs on horse
- the eggs are ingested by horse
- the eggs hatch and larvae attach to stomach lining
- the larvae are passed in faeces in spring
- adult flies emerge and the cycle continues.

**Question 10**

Marks	0	1	2	Average
%	75	15	10	<b>0.4</b>

The two equine systems involved in the regulation of blood pressure and volume are:

- digestive
- urinary.

**Question 11a.**

Marks	0	1	2	Average
%	37	30	34	<b>1.0</b>

Concussion is the force that travels vertically up the leg. It occurs each time the hoof hits the ground.

**Question 11b.**

Marks	0	1	Average
%	59	41	<b>0.4</b>

Correct answers included:

- short/upright position
- flat feet / dropped sole
- incorrect hoof–pastern axis
- contracted heels / club foot
- small weak frog
- calf knee.

**Question 12a.**

Marks	0	1	2	Average
%	19	31	51	<b>1.3</b>

Correct answers were:

- tying up / Monday morning disease
- muscle cramping / reluctance to move.

**Question 12b.**

Marks	0	1	Average
%	69	31	<b>0.3</b>

Correct answers included:

- failure to reduce concentrates or grain the night before the day off
- feeding grain in excess of work requirements
- high grain diet.

**Question 12c.**

Marks	0	1	2	Average
%	86	11	3	<b>0.2</b>

- RER is linked with the inability to process calcium
- PSSM is linked with storage of glycogen/sugar / genetic disorder.

**Question 13a.**

Marks	0	1	Average
%	39	61	<b>0.6</b>

The estimated weight of the horse was 500 / 510 / 515 kg.

**Question 13b.**

Marks	0	1	Average
%	26	74	<b>0.8</b>

The daily feed ration would be 3–4 kg.

**Question 13c.**

Marks	0	1	Average
%	33	67	<b>0.7</b>

Other than water, correct feed components would include sufficient pasture / forage / roughage / hay / chaff.

**Question 13d.**

Marks	0	1	2	Average
%	23	44	32	<b>1.1</b>

To help prevent weight gain:

- increase exercise
- reduce feed intake.

Students mostly accurately interpreted the nomogram for Questions 13a.–b. and could identify the weight and feed requirements for the horse depicted in the stimulus material.

**Question 14**

Marks	0	1	2	3	Average
%	11	27	53	9	1.6

Outlining the correct treatment required for these horses included the following.

- All four horses need to be treated with lice powder/spray.
- The horses must have new/clean rugs.
- The infected horses need to be treated, left for 14 days and retreated in 17 days.
- Use of personal protective equipment is important.

**Question 15**

Marks	0	1	2	3	4	Average
%	3	19	55	20	3	2.0

A correct answer included four of the following.

- providing buckets with lids labelled for individual horses
- providing feeds with additives, separated from regular feeds
- whiteboard/book recording of details of feeds for individual horses
- staff handwashing after each feed
- restricted substances being separated from feed
- all buckets being thoroughly cleaned after use
- labelling all feeds and correlating to whiteboard.

**Question 16**

Marks	0	1	2	3	4	5	6	7	8	Average
%	16	4	32	9	22	2	10	0	5	2.9

Conformation features important in polo ponies include the following.

- for quick acceleration
  - strong, well-muscled hindquarter and strong gaskins with clean hocks for acceleration
  - short back for take-off
- stamina and endurance
  - large nostrils, clean throat/latch/gullet for air intake
  - deep girth / well-sprung ribs for lung capacity /endurance
- for the ability to turn sharply
  - short back / neck / well-muscled hindquarters for quick turns and manoeuvres
  - low-set hocks / short cannons to withstand weight transfer
- for the ability to stop suddenly
  - strong, straight legs with short cannons / strong, compact hooves to withstand concussion / weight transfer
  - low-set hocks / short cannons to withstand weight transfer
  - downhill build
  - short back
  - correct 45-degree angle of pastern

Many answers were too generalised, such as 'strong hindquarter', where 'muscular hindquarter' was required. Only a small number of responses achieved the maximum marks on this question, due to a lack of detail and repetition of conformation features.

**Question 17a.**

Marks	0	1	2	Average
%	31	35	34	1.1

Two factors that can affect how quickly a wound can heal could be drawn from the following.

- The site of the wound (leg wounds heal more slowly)
- The type of the wound (abrasion versus laceration)
- The size of the wound (small wounds heal faster)
- The extent of underlying damage (superficial wounds heal faster)
- The orientation of the wound (vertical wounds heals faster than horizontal)
- Whether infection is present (infected wounds take longer).

**Question 17b.**

Marks	0	1	Average
%	67	33	0.4

The overgrowth of pink, granular tissue in a healing wound is called proud flesh.

**Question 18**

Marks	0	1	2	3	Average
%	52	17	15	16	0.9

The required part of the horse was the cannon bone. Ample bone is determined by the circumference of the cannon measured. Ample bone is desirable because it indicates the ability to carry weight / withstand work / resist injury.

**Question 19**

Marks	0	1	2	3	Average
%	44	9	28	19	1.2

Many students gave urine as an example of a fluids biohazard; it is in fact a waste biohazard. The following biohazards in the equine workplace, and examples, were accepted.

- fluids; for example blood, pus, mucous, saliva, discharges
- waste; for example urine, manure, afterbirth
- refuse; for example hair, hoof trimming, used bandages, dressings, swabs
- sharps; for example used scalpels, needles, syringes.

**Question 20a.**

Marks	0	1	2	3	Average
%	69	20	9	2	0.5

A sudden change in the grain component of a horse's diet could have the following impacts:

- hindgut upsets / hindgut acidosis / lower pH
- microbial population dies, gut flora / microbes are killed off



- produces endotoxins, which negatively impact horse health.

**Question 20b.**

Marks	0	1	Average
%	31	69	<b>0.7</b>

A negative health consequence would be colonic ulceration / colic / laminitis.

**Question 21**

Marks	0	1	2	3	4	5	6	Average
%	62	6	7	8	6	4	9	<b>1.4</b>

The three main types of equine muscle and their functions could be identified as:

- smooth muscle; this involuntarily moves contents of digestive/reproductive tracts / blood vascular system / bladder / bowel
- cardiac muscle (mildly striated); this is specialised muscle found only in the heart, which pumps blood
- skeletal (striated) muscle; this type of muscle voluntarily controls movement and supports the skeleton.

**Question 22**

Marks	0	1	2	3	Average
%	53	21	16	10	<b>1.9</b>

Students were able to identify that the conformation fault known as ‘coon-footed’ could cause soundness issues, but some could not explain the anatomical impact upon the horse. Few students were able to explain what the fault is and the strain it causes on the tendons, ligaments and fetlock joint.