

2020 VCE VET Equine Studies examination report

General comments

The 2020 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 responded well to the examination questions and showed a good understanding of how to apply their knowledge to a range of contexts. Students were able to give accurate and specific responses to questions. Most questions required careful consideration of key words to determine the correct answer.

While students were able to identify common feeding principles and breed characteristics, many students were not able to apply their knowledge to specific nutritional value/sources/components/supplements for specific breeds. In some instances, students responded with pasture management procedures, rather than hygiene procedures, leading to their responses lacking the detail and accuracy required.

While most students answered the question on balance, rhythm and swing with some degree of understanding, the answers varied from comprehensive accurate answers to those that were unable to draw a link between these three features and their relationship in the movement of a horse.

Specific information

Section A – Multiple-choice questions

Question	% A	% B	% C	% D	Comments
1	69	31	0	0	
2	6	25	4	64	The lymphatic system and the endocrine system produce hormones that have anti-inflammatory effects on the immune system. However, the question asks for two physiological systems 'involved' in equine immunity. The cardiovascular system transports blood, which contains white blood cells, which in turn are utilised in the immune response to investigate foreign bodies and potential infections.
3	13	32	54	2	
4	37	17	6	39	
5	6	90	2	2	
6	10	63	25	2	

Question	% A	% B	% C	% D	Comments
7	4	1	3	92	
8	18	51	16	14	A buttress foot is the bulging of the coronary band, involving the coffin bone and the short pastern bone. It is caused by concussion and poor leg confirmation. It is not related to the look of the hoof.
9	4	85	4	7	
10	2	84	13	0	
11	27	13	25	36	
12	25	2	13	60	
13	31	39	14	16	
14	11	30	10	49	
15	83	2	10	6	
16	2	14	82	2	
17	21	74	5	0	
18	15	14	50	21	
19	90	3	2	5	
20	27	4	34	35	

Section B

Question 1

Marks	0	1	2	Average
%	14	39	47	1.3

The correct answers are:

- the skin/integumentary provides a barrier from infection
- the skeleton as it protects organs from damage.

Question 2

Marks	0	1	2	3	4	Average
%	27	2	37	3	31	2.1

Students were required to provide two examples and explanations of hygiene procedures. Students were not awarded marks for pasture management procedures.

Any two of the following procedure-plus-explanation combinations:

- Pick up manure from paddocks and stables– to prevent pasture from becoming burdened with worms.
- Harrow paddock to break up manure, which kills larvae.

- Rotational grazing as sheep and cattle have different worms and minimize worm burden.
- Keeping areas clean to stop parasite spreading.
- Avoid sharing gear and equipment between horses.
- Regularly disinfecting equipment and work areas.
- Quarantine new horses for parasite control.

Question 3

Marks	0	1	2	3	Average
%	94	3	2	1	0.1

Many students focused too heavily on the part of the question mentioning protein as an energy source.

Two marks for any two of following:

- Water requirements increase with increased protein intake. This can have a negative impact on performance.
- Urea levels in the blood increase leading to greater urea excretion into the gut, which may increase the risk of intestinal disturbances.
- Ammonia levels in the blood increase, causing problems such as nerve irritability and disturbances in carbohydrate metabolism. Increased ammonia in the urine may also lead to respiratory problems because of ammonia build-up in the stable.
- Exposure to urea can lead to respiratory issues and lung irritations.

One mark for an appropriate reason why a horse would be fed a higher protein diet.

Question 4a.

Marks	0	1	Average
%	27	73	0.7

The correct answer:

- paddling/dishing/winging out
- toed-in/pigeon toed.

Question 4b.

Marks	0	1	Average
%	22	78	0.8

The correct answer was toed-in/pigeon toed.

Question 5

Marks	0	1	2	3	4	Average
%	3	9	27	25	36	2.8

Appropriate treatment (first aid / initial action) and treatment management procedures (ongoing preventative measures) are two different things and could have led to some confusion with exactly what was required by this question.

Students had to identify any two of the following cough causes and had to outline the appropriate first-aid treatment for each:

- Parasites: Worm horse regularly or have faecal egg count to determine amount of worm burden.
- Infection: Administer antibiotics under veterinary advice.
- Dust: Ensure horse has clean and clear air/environment to breathe. Follow veterinarian advice for recovery.
- Obstruction/compaction: Massage affected airway, use a drenching hose/pipe to remove obstruction. Use oil to help soften the obstruction.
- Allergic reaction: Dampen hay/feed, shavings, use straw bedding, remove horse when cleaning boxes.
- Choke: Call vet who will treat to help dissolve and remove the obstruction. Follow veterinarian on going instructions.

Question 6

Marks	0	1	2	3	4	Average
%	9	8	11	28	44	2.9

Any four of the following answers were correct:

- lethargic/listless demeanour
- not eating
- not drinking
- sweating profusely at rest
- dull eyes
- dull coat
- pot belly appearance
- excessive rolling
- extended periods of lying down
- lameness
- swelling on body
- lacerations / excessive bleeding
- body score condition
- nasal discharges.

Question 7

Marks	0	1	2	3	4	Average
%	6	6	29	14	45	2.9

Two marks for any two of the following:

- slab sided – for shafts of harness to fit
- sloping pasterns – for impact and shock absorbing
- more upright pasterns – due to limited need for concussion as horse is not working at speed, and upright pasterns are more efficient for pulling
- more upright shoulder and limited wither – for leaning his weight into the collar.
- less than a third of body length in hind quarter – for traction/stabilising power and support
- broad and muscular build – strength for pulling
- neck set on high – deeper chest for collar to sit comfortably
- slightly downhill build – increases pulling ability due to equal load spread throughout the collar/breastplate
- broad back/big boned – for strength and ability to pull heavy loads
- deep wide chest and massive crested neck (heavy in front) – great pulling power to allow horse to pull into the collar / allows horse to pull more than its weight
- shorter thick well boned legs – more leverage and power when pulling and increases stability
- well-muscled and well-formed hindquarters – for pulling ability
- longer forearm – for reach within the stride
- humerus more horizontal – to match the sloping pastern
- short through back – for power and pulling ability
- strong or ample boned – for maximum muscle attachment and concussion on hard surfaces
- straight, correct leg conformation – for soundness and longevity
- large head in proportion to neck and body – for balance
- high-set neck – for correct and secure fit of the harness collar
- thick broad neck – for muscle and strength to pull a load length and flexibility is not required in a harness horse used for heavy work
- large flat hooves – good support for larger body for connection to the ground and limit slipping
- low hocks – for digging in with hind legs
- cow hock – more desirable for support to pull loads.

Question 8

Marks	0	1	2	3	4	Average
%	2	14	33	28	23	2.6

The following answers are correct:

- increase quality hay such as lucerne/rye-clover hay for forage/roughage as no grass
- provide additional feed to meet protein/fat-energy requirements
- provide vitamin/minerals due to deficiency of minerals with no grass
- high fibre/high bulk
- easily digestible feeds
- increase oil and fats
- ad-lib hay
- minimum 1.5% body weight in roughage.

Question 9a.

Marks	0	1	2	Average
%	25	20	55	1.3

Two marks for:

- A tear is when muscle fibres are torn and some of the muscle fibres are still intact.
- A rupture is a complete break apart of muscle fibres (can be known as complete tear).

Question 9b.

Marks	0	1	Average
%	4	96	1.0

One mark for an appropriate example of a sign that a performance horse could have a tear:

- tenderness
- inflammation
- swelling
- lameness
- localised pain.

Question 9c.

Marks	0	1	Average
%	15	85	0.9

One mark was awarded for:

- restrain
- test for localised pain
- limit movement
- cold hosing / ice boot
- cold compress
- advise supervisor
- confinement
- remove from other horses.

Question 10a.

Marks	0	1	Average
%	75	26	0.3

Possible correct answers:

- found at the junction between ileum and the cecum, which is where the small intestine connects to the large intestine.
- may be found in small or large intestines and may be also found in the stomach
- can be found in the walls of the intestines
- can be found in the faeces.

Question 10b.

Marks	0	1	Average
%	89	11	0.1

A large percentage of students could not explain the impact of tapeworms on the horse's health:

- ileocaecal valve (junction) or junction between the large and small intestine (1 mark)
- damage and/or blockage between large and small intestine causing colic, weight loss, [poor condition (1 mark)

Any two of the following were correct: slow rotation worming, fecal egg count, remove manure from paddock, harrow paddock to break up manure and destroy eggs/larvae, paddock rotation, cross grazing.

Question 10c.

Marks	0	1	2	Average
%	29	52	19	0.9

Many students were too general and responded with 'worming'. Students needed to respond with explicit reference to tapeworms:

- using a worming paste specifically to control tapeworms
- cross grazing
- paddock resting and rotation
- saliva-testing
- removing manure from paddock.

Question 11

Marks	0	1	2	Average
%	16	55	30	1.1

Students needed to choose any two of the following:

- uncoordinated gaits
- pain and stiffness in neck area
- continual stumbling
- dragging a limb
- swaying in the walk
- lack of awareness of limbs and their placement.

Question 12a.

Marks	0	1	2	Average
%	0	2	98	2.0

Two marks for two appropriate items of PPE when applying lime to a bare stable floor from: boots, gloves, eye protection, and face mask.

Question 12b.

Marks	0	1	Average
%	20	80	0.8

The correct reason for why lime would be applied to a bare stable floor: to eliminate odour, to dry out wet spots, compact dirt, and help kill bacteria.

Question 13

Marks	0	1	2	Average
%	4	36	60	1.6

Marks were awarded for: sharps, bandages, swabs, dressings etc.

Question 14a.

Marks	0	1	2	Average
%	14	42	43	1.3

Many responses were too general rather than specific (e.g. front leg, rather than along the back of the cannon bone).

The following were correct answers:

- bowed tendon symptoms – swelling that resembles an archer's bow / inflammation / pain / lameness
- swelling and bulging of the tendon
- heat
- lameness
- tenderness
- reactive to touch
- localised pain
- location to be between the rear of the knee and fetlock, or back of the cannon, suspensory ligament, deep digital tendon, or superficial.

Question 14b.

Marks	0	1	2	Average
%	17	41	42	1.3

Two marks for two possible causes of the condition from:

- tendon is injured when more force is put on the leg and tendon than can bear
- forced exercise
- heavy exercising with improper conditioning
- fatigue
- repeat missteps
- fast work on poor surfaces (deep sand, mud, rough or hard surfaces)
- working a horse at too young an age
- falls and accidents
- poor conformation
- toes too long adding extra strain on tendons
- kicking the tendon with the hind leg.

Question 14c.

Marks	0	1	2	Average
%	12	25	63	1.5

Two marks for two methods to treat a bowed tendon:

- restrain
- test for localised pain
- limit movement
- cold hosing / ice boot
- cold compress
- advise supervisor
- confinement
- remove from other horses
- bandaging legs / tendons.

Question 15

Marks	0	1	2	3	4	5	6	Average
%	6	10	16	20	21	17	10	3.3

While the majority of responses showed some understanding of these three aspects of a horse's movement, many responses did not make any genuine connection between the elements and quality of movement.

Students received a mark for each element, and one mark for each explanation:

- Balance: Relative distribution of weight of horse and rider upon the fore and hind legs (longitudinal balance) and the left and right legs (lateral balance). The horse is in 'good balance' in dressage/biomechanical terms, when it is in 'unstable' balance when the base of support is both narrowed laterally and shortened longitudinally, thus making it susceptible to small external influences (of the rider) and mobile (especially in the forehand).
- Swing: The way in which the horse's trunk muscles function – with springy tension rather than rigidity of slackness, which creates the impression that the horse's back swings and allows the energy produced by the hind legs to be efficiently transmitted forward through the horse.
- Flexion: Articulation of a joint or joints so that the angle between the bones is decreased. 'longitudinal flexion' commonly refers to the flexion of the head-neck joint (the atlanto-occipital joint). 'Lateral flexion' or 'position' commonly refers to flexion of the second cervical (neck) joint (atlanto-axial joint).

Question 16a.

Marks	0	1	2	Average
%	6	29	65	1.6

The correct answer was overall balance – downhill build, lower set neck, not even thirds of body proportions.

Question 16b.

Marks	0	1	2	3	4	Average
%	10	8	26	11	45	2.8

The following answers were correct:

- body proportions – longer through back, larger hindquarters in comparison to body, small head and short neck, standing under on front limbs
- downhill build – as a riding horse heavy on forehand
- lack of definition in wither – saddle more likely to slip forward harder to fit for riding horse
- sickle hocks – weaker through hock joint more prone to injury
- upright shoulder – choppy stride
- upright short pasterns – more prone to concussion related pastern injuries
- low-set neck – harder for horse to carry self as a riding horse example trail riding terrain
- post legged – predisposed to locking patella injury
- croup high – carry more weight on forehand and creating more strain on front limbs creating less movement and limiting balance.

Question 17a.

Marks	0	1	2	Average
%	6	32	63	1.6

Consequences include colic, choke, diarrhoea, scouring and laminitis.

Question 17b.

Marks	0	1	2	Average
%	4	20	77	1.7

The correct answer: pony yard locked, horse to be separated by two gates for feed shed, feed stored in secure containers with lids fastened securely

Question 17c.

Marks	0	1	2	Average
%	8	32	61	1.5

The correct answer: reluctance to move, no bowel movements, excessive or limited gut sounds, signs of colic.

Question 18

Marks	0	1	2	Average
%	27	49	24	1.0

Students were awarded two marks for any two of the following:

- equine metabolic syndrome
- cushings
- shock
- non-weight-bearing laminitis
- overweight
- high grain diet
- high impact work on hard surfaces
- injury – supporting leg laminitis.

Question 19a.

Marks	0	1	Average
%	63	37	0.4

The correct answer was the distance from the first front footfall to the last hind footfall: how much ground the horse covers in one stride.

Question 19b.

Marks	0	1	Average
%	24	76	0.8

The correct answer was the slope and angle of shoulder.

Question 20

Marks	0	1	2	3	Average
%	29	40	27	4	1.1

Students struggled to identify an injury or condition affecting the coffin joint.

Students were given one mark for each correct answer:

- stifle joint – locking stifle, arthritis, fractures
- hock joint – thoroughpins, capped hock
- coffin joint – osteoarthritis, navicular disease, ligament strain, side bone, ring bone.

Question 21a.

Marks	0	1	Average
%	23	77	0.8

The correct answer: gastric ulcers are lesions in the gastric mucosa (stomach lining) generally in the upper region of the stomach.

Question 21b.

Marks	0	1	Average
%	41	59	0.6

Gastric ulcers are caused by the acid in the horse's stomach from the horse not having enough roughage to neutralise the acid in the stomach through saliva.

Question 21c.

Marks	0	1	Average
%	3	97	1.0

The correct answer was digestive system.

Question 21d.

Marks	0	1	2	Average
%	4	19	76	1.7

The correct answer was dull coat, girthy/resistance under saddle, poor appetite, weight loss, irritability, touchiness around girth area and decreased performance.

Question 21e.

Marks	0	1	2	Average
%	6	37	58	1.5

The correct answer was feed plenty of bulk, give a small amount of a roughage such as hay/chaff before riding, allowing reasonable time in paddocks to graze, more frequent feeding, reduce stressful situations.