



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2022

EQUINE STUDIES
MARKING GUIDELINES

Time: 3 hours

200 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

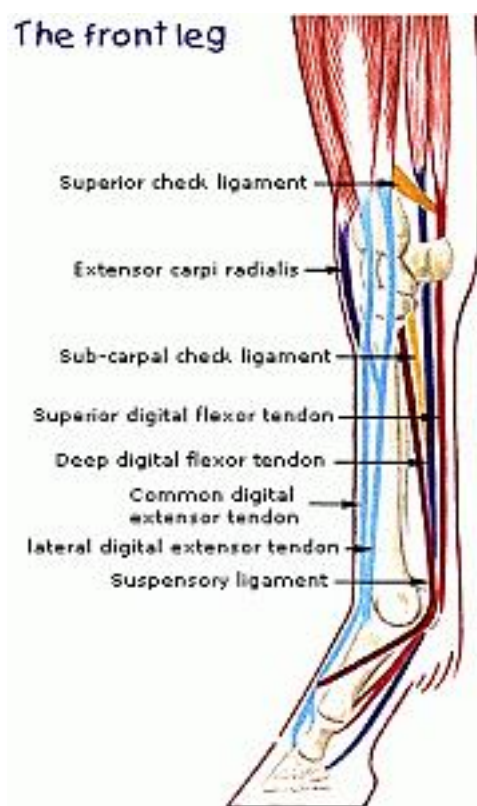
The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

SECTION A**QUESTION 1**

- 1.1
 - 1.1.1 A (IV) c
 - 1.1.2 B (III) e
 - 1.1.3 C (V) a
 - 1.1.4 D (I) g
 - 1.1.5 E (II) f
 - 1.1.6 F (VIII) d
 - 1.1.7 G (VI) h
 - 1.1.8 H (VII) b
- 1.2
 - 1.2.1 Degenerative joint disease/disorder
 - 1.2.2 Osteochondritis/osteochondrosis dissecans
- 1.3
 - 1.3.1 cervical
 - 1.3.2 thoracic
 - 1.3.3 lumbar
 - 1.3.4 sacral
 - 1.3.5 coccygeal
 - 1.3.6 Cranial
 - 1.3.7 Rostral
 - 1.3.8 Dorsal
 - 1.3.9 Ventral
- 1.4 Wobblers Syndrome/Poll Evil
- 1.5 15–22

QUESTION 2

2.1 Each tendon/ligament given 3 marks: correct order label correct insertion.



2.2

	Conformational fault	Condition caused	Corrective Shoe
2.2.1	Long Canon Bone	Strained tendons/ Ligaments	Heart bar shoe/Egg bar shoe elevated heel shoe
2.2.2	Broken back HPA	Navicular syndrome Tendonitis – DDFT, bog spavin/thorough pin	Wedge shoe/Heart bar shoe or Full rocker shoe or Concussion pads
2.2.3	Over straight hind leg	Bone spavin/bog spavin or Suspensory injury	Egg bar shoe or Heel wedge
2.2.4	Pigeon toed	Ring bone or Side Bone Splints	Bar shoe or open heel shoe with pads
2.2.5	Upright pasterns	Ringbone or side bone	Bar shoe or open heel shoe with pads
2.2.6	Sickle hocks	Curb/bog spavin/ thoroughpin	Rocker toe shoe

- 2.3 2.3.1 FSH/Follicle Stimulating Hormone
- 2.3.2 Pituitary Gland
- 2.3.3 Developing Follicle
- 2.3.4 Any 1 of the following: Signs of Estrus, prepares reproductive tract for pregnancy, Stimulates Lh Production
- 2.3.5 Progesterone
- 2.3.6 Uterine Lining

SECTION B**QUESTION 3**

3.1 The Bot fly

- 3.2 A The larvae freshly shed within the faeces of the horse
- B will burrow beneath the soil surface and pupate.
- C Adult flies will emerge from the pupae in 20 to 70 days.
- D Adult flies lay bot eggs on the legs of the horse
- E Horse swallow the eggs when licking the legs

3.3 3.3.1 *option 1: 60 ml turpentine – any 3 below*

- could cause colic
- could cause poisoning
- no research to prove it is safe
- could cause diarrhoea

option 2: 4 ml male fern extract – any 3 below

- could cause colic
- could cause poisoning
- no research to prove it is safe
- could cause diarrhoea

option 3: starving the animal for 24–26 hours – any 3 below

- could cause colic
- no research to prove it is safe
- damage gut bacteria

- 3.3.2
- Weigh the horse using either weigh tape or formula or scale.
 - Administer either or a combination of moxidectin, ivermectin, fenbendazole, pyrantel, Praziquantel.
 - Perform a FCRT (Fecal Egg Count Reduction Test) 2/3 weeks later.

- 3.3.3 Refugia meaning a portion of the parasite population is not exposed to active anthelmintics and therefore won't undergo a genetic change or mutation. This will lead to less resistance active ingredients. This is why we would not deworm horses with lower than approx 300 egg count per gram. Anthelmintics are dewormers. There are not many active ingredients and if resistance continues we will end up with fewer and fewer effective treatments. Therefore it is a game changer to include keeping 'refugia' in the horses system.

- 3.3.4
- The absence of the host (the horse) in a paddock will also break the worm cycle
 - Rotating also prevents over grazing. If a horse does not have access to sufficient grass he will be forced to graze the rough areas near droppings. These areas have a higher concentration of worm eggs increasingly the likelihood of your horse picking up eggs. Rotate with other animal which can pick up larvae/eggs but not continue their cycle.
- 3.3.5 The following points must be given (7):
- Starved horses should be fed at 50% or less of their current (poor body condition) energy requirements. 3,75 kgs a day. (2.5% of body weight = 7.5 kgs/2)
 - Concentrate feeds (pellets and grain) should be avoided for the first 2–3 days.
 - Feedings (hay) should be small and given every 4–6 hours to better allow the digestive tract to adapt to refeeding.
 - Horses can also be turned out onto grazing for 2–3 hours, and grazing time can be gradually increased by an hour every 2–3 days.
 - After 2–3 days of feeding, the horse can be fed to meet the requirements of its present (but low) body weight for another 2–3 days. 7.5kgs of feed a day
 - Once the horse has adjusted to feed intake and its gastrointestinal tract has adapted, the amount of feed can be increased over 7–10 days to meet requirements for its ideal body weight. 10.5 kgs a day
 - The number of meals fed can be gradually reduced to 2–3 per day as the horse is able to eat more.

Any 7 of the following points can be given in addition (7):

- Horses should have access to or be fed mineral and vitamin supplements or balancer pellets.
- Supplemental thiamine (vitamin B1) may be beneficial to prevent refeeding syndrome
- Clean water should be available at all times.
- Probiotics or prebiotics are administered to repopulate the gut and aid digestion.
- Lucerne is an excellent source of protein and minerals, but horses should be gradually transitioned to it.
- The horse can be turned out for a few hours per day. Grazing time can be gradually increased every 2–3 days
- Senior feeds are also commonly used and they typically have adequate fibre and increased vitamin and mineral concentrations.
- Starved horses will lack normal enzymes and the ability to digest fats.

QUESTION 4

- 4.1 Maintain open or maiden mares at a body condition score of **6 or 7** leading up to the breeding season. For pregnant mares that will be lactating in late winter or spring, a condition score of **6/7 or 7/7.5** is ideal. Keeping mares at condition scores higher than **7/7.5** does not enhance fertility and is not wise from an economic standpoint.
- 4.2 Any 5 below:
- Stud mix
 - 14–18% Protein concentrates
 - Balancer
 - Lucerne
 - Good quality teff
 - Full fat soya
 - Soya Bean meal
 - Oils
 - Vitamin & Mineral supplement
 - Vitamin E
 - Linseed/Flaxseed Oil
 - Good quality grazing
 - Oats
 - Barley
 - Berga fat
- 4.3 4.3.1 COIDA
4.3.2 UIF
4.3.3 PAYE
- 4.4 4.4.1 Any 2 of the following points or similar:
- The introduction of a foreign surgical instrument causes an inflammatory reaction due to mucosal damage and to prevent infection
 - All mares will react to the introduction of sperm as the mares immune system sees them as foreign.
 - Inflammatory markers increase to prevent infection
- 4.4.2 Any 2 of the following points (2 marks each):
- The mares had a stronger immune system.
 - The equipment used was better sterilised.
 - Group 1 was administered with a prophylactic antibiotic/ anti-inflammatory before the procedure.
 - The mares received an antibiotic intrauterine before AI.
 - The vet used gloves during the procedure.
 - The stallions sperm used was tested for any infection.
 - group 1 could have been previously foaled mares
 - different stage of Oestrus affecting cervical opening
 - suffering other causes of inflammation e.g. respiratory infection in the other group
 - Different skill levels of the people performing the procedure

- 4.4.3 • Group 1.
- Because less inflammation equals more viable pregnancies.
 - Less inflammation equals more successful parturition (birthing)

4.5 I agree (MUST have justification to gain this mark)

Any 5 below:

- A horse carries most of its weight on its front legs.
- This then becomes an arena prone to injury from concussion.
- Conformation faults causes the horse to move in a way that causes an impact up the leg that the leg is not designed for.
- If the horses' legs are not structurally sound, then the impact will be distributed unevenly.
- This will lead to chronic or acute issues.
- e.g. Splints, ring bone, side bone, bone spavin, bog spavin, thorough pins.

NOTE: Up to 2 marks only avail for examples.

QUESTION 5

5.1

	Category of Teeth	Average Number of Teeth
A	Canines/Tushers	0–4
B	Wolf teeth/tooth/Pre Molar 1	0–4
C	Incisors	12
D	Premolars	12
E	Molars	12

5.2 5.2.1 Enamel ring

5.2.2 Dental Cups or infundibulum

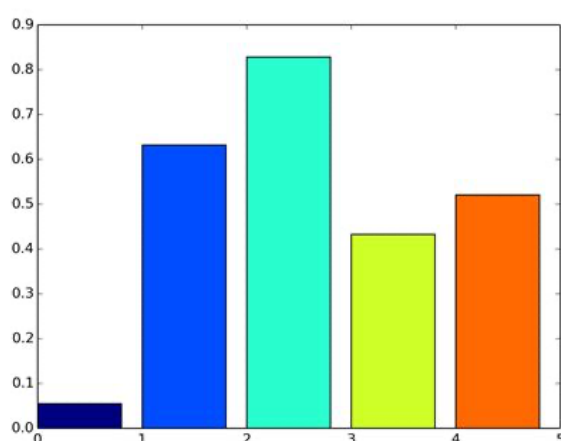
5.2.3 Dental star

5.3 15 years old (accept 12–15 GG unclear in pic)

Any 2 of the following points:

- The lower incisors may appear shorter than the uppers when viewed from the front.
- Galvaynes groove extends halfway down the outer (lip) side of the upper corner incisor.
- The lower centrals and intermediates appear triangular on the chewing surface.
- All incisors show a distinct dark round dental star in their centres.

5.4 5.4.1 Example bar chart



- Suitable heading
- The scale of y-axis
- The heading on the y-axis
- Bars included
- Each bar labelled as nutrient type
- Heading on x-axis
- 4 marks for correct plotting (all correct 4 marks)

5.4.2 Any 4 of the following:

- Soya bean meal
- Full fat Soya
- Lucerne Chaff
- Oats
- Maize
- Canola meal
- Lupins
- beans
- Wheat Germ

5.5 Any 8 below or similar:

1. What brand of food is the horse eating?
2. How many meals does the horse get per day?
3. What is the exact weight of food per meal?
4. What is the exact weight of hay given per haynet?
5. When were the feet last seen to by a farrier?
6. When was the last dental visit for the horse?
7. When last was a fecal egg count done for the horse?
8. Is this horse a high or low egg shedder?
9. When was last dewormer given and which active ingredient was given?
10. Does the horse have any food allergies?
11. When was the last Flu/AHS vac?
12. Are the vaccinations up to date?
13. When was the last Saddle fitting for the horse?
14. How does this horse behave in the herd?
15. Does the horse box, shoe and clip well?
16. Is the horse dominant or submissive in herd?
17. How is the horse if left alone by itself?
18. Does the horse have any vices?
19. Has the horse had previous colic?

2 Marks allocated for question format & quality of the questions

SECTION C**QUESTION 6**

- 6.1 6.1.1 Any 3 appropriate advantages (any 3):
- less time consuming
 - uses less labour
 - less labour expensive
 - accurate feeding per horse using chip
 - less bullying over food than when feeding outside in large herds
- 6.1.2 Any 3 appropriate disadvantages (any 3):
- risk of injury
 - horses not being seen by the 'eye' of the carer at feed times
 - Bully horses controlling the system
 - horses getting stuck inside the pen
 - expensive
 - not creating employment grooms, etc.
 - Break & then horses left unfed
 - risk of incorrect food being fed
 - risk of disease spread/mould toxins if bowls left uncleaned
- 6.2 Supplements
Medicine
- 6.3 Horses needed to be introduced individually to ensure they understood the system.
One on one was used so that rewards could be used for each horse.
Each horse learns at different rate.
- 6.4
- Older horses need more training as they have well established habits.
 - It is harder for older horses to break long term habits.
 - Older horses are not as food sensitive
- 6.5 Any 5 of the below:
- Holds weight well
 - Fat deposits
 - External signs of metabolic issues
 - Loss of toppling
 - Potbelly
 - No sign of ribs
 - Low levels of energy expressed
 - Ribs are hard to feel
 - Cresty neck
 - Well covered withers
 - Condition score of 7 to 9
- 6.6 Any 2 of the following:
- check feet
 - check injury
 - check blankets
 - check the system is working and horses are fed

6.7 Yes: Must give reasons to get this mark

Any 2 of the following:

- Can reduce the cost of labour which is desired
- Easy to set up
- This system could be successful as farms are large in SA and would be easier to use this type of horses with large amounts of livestock.

OR

No: Must give reasons to get this mark

Any 2 of the following:

- Expensive so no one would buy it
- No expertise to run it properly
- Requires training and no one would get the training
- This type of system would not create local employment so the community would not want it.
- This type of system could potentially break and then not get fixed.
- due to load shedding

Total: 200 marks