



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2023

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 D
 1.1.2 D
 1.1.3 D
 1.1.4 B
 1.1.5 D
 1.1.6 B

1.2 1.2.1 Systole

1.2.2 Diastole

1.2.3 Left ventricle propels/pushes blood around the whole body not solely the lungs. Arteries are at higher pressures therefore need higher force to push blood through them – it makes sense that its wall would be a bit thicker and larger.

1.3

AGE OF ERUPTION	0–1 MONTHS	1–3 MONTHS	9 MONTHS	18 MONTHS	2.5 YRS.	3.5 YRS.	4.5 YRS.
CENTRAL INCISORS	M				P		
LATERAL INCISORS		M				P	
CORNER INCISORS			M				P

1.4 1.4.1 Shock absorption/ returning blood back up the leg/ aid to grip the ground/ balance control

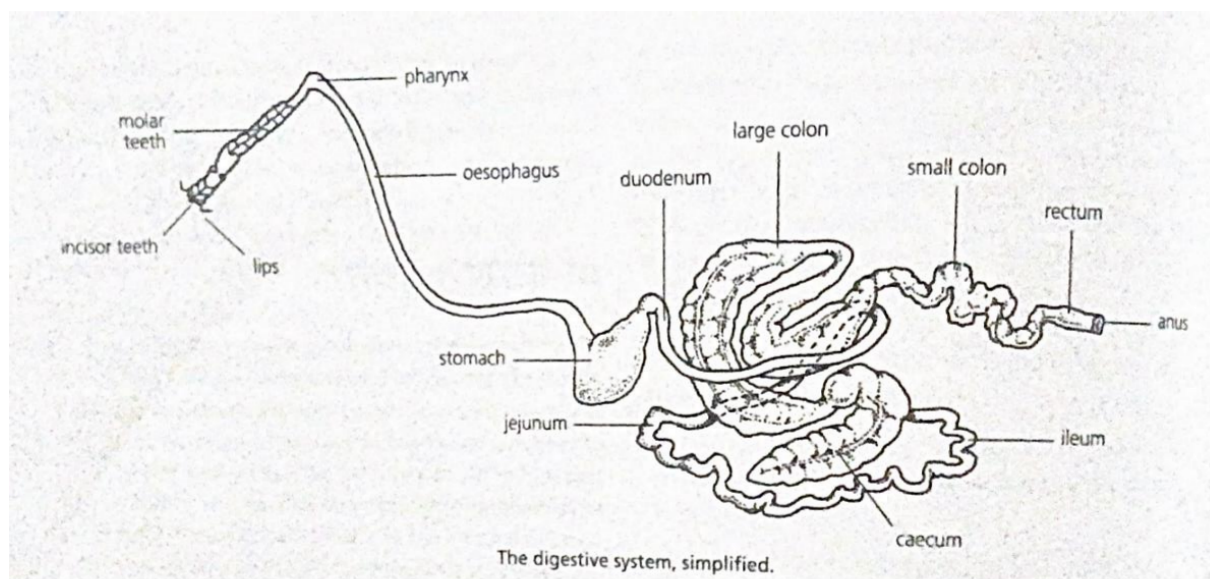
1.4.2 Bear weight/ protect inner structures.

1.4.3 To protect the sensitive structures beneath

1.5 Head and neck extended, nasal discharge, elbows turned out, increased respiratory effort, increased or decreased respiratory rate, respiratory noise, mucous cyanotic, collapse, death.

QUESTION 2

2.1 Correct Scale Neatness



- Scale and accuracy
- lips
- incisor teeth
- molar teeth
- oesophagus
- stomach, cardiac sphincter valve, pyloric sphincter
- small intestine: duodenum, jejunum, ileum
- large intestine: small colon, large colon, rectum
- anus

2.2 Peristalsis

Peristalsis makes digestion possible. It's what moves food and fluids through each stage of the digestive process. The slow but steady progress of peristalsis is also important for digestive health. It gives your body time to break food down for digestion and to absorb nutrients along the way. But it's also responsible for clearing out accumulating bacteria and waste products in a timely manner. Mixing contents so enzymes/ acids reach all contents.

2.3 Digestion in hindgut by microbes/bacteria starts in the caecum.

Microorganisms produce enzyme cellulase.

Roughage is not digested in the small intestine

Fermentation also assists digestion

Fibre digested into volatile fatty acids

These VFAs are used for energy and enterocyte health

Takes time – fibre spends increased time in hindgut to enable fermentation and digestion to take place almost completely.

- 2.4
- Prebiotics are ingredients that promote the health and growth of microorganisms already living in the horse's digestive tract.
 - Prebiotics essentially act as a food source for your horse's existing gut microbes.
 - Unlike probiotics prebiotics for horses do not introduce new bacteria to the digestive tract.
- 2.5
- Feed Body weight 2.5% daily 12.5 kgs daily
 - Fiber % at least 1% of the body weight = 5 kgs absolute minimum
 - Protein 8% – 12% protein feed
 - Balance vitamins and minerals (Ca:P is very important, Ca- Lucerne and limestone flour)
 - Clean fresh water available at all times
 - Primarily feed stuffs can be good-quality forage and a source of vits and minerals – Balancer
 - Rations should be split 100% – 80% roughage to 0 – 20% concentrates
 - Give a salt lick/ mineral block
 - Give lots of roughage for body warmth
 - Soak hay to remove sugars
 - Low starch and sugar concentrate designed for horses prone to laminitis

SECTION B**QUESTION 3****3.1 Sheared heels****3.2 The main points of the paragraphs are summarised.**

1. Landing can affect horse's feet as can conformation and lameness.
2. Poor farrier and lack of care can also cause this.
3. Lack of balance can cause one side of the heel to grow higher.
4. To assess the condition stand horse and look from the back of the hoof.
5. If it is sheared heels then one heel will be higher than the other.

3.3

- Sheared heels can cause a deep fissure in the heel bulb where bacteria can develop into thrush.
- This is also due to sheared heels making it difficult to keep the frog and heel area of the frog clean.
- Sheared heels can require bar shoes and sometimes heel fillers, which also provide the ideal place for thrush to develop.

3.4 The bar shoe (which is a complete shoe and joined at the heels) acts to stabilise the hoof capsule and in effect will reduce the movement at the heels allowing them to begin repairing. Without bar shoes the heels may not repair or recover.**3.5** The prognosis for sheared heels, thrush and quarter cracks is good provided a skilled farrier is involved following the advice of your vet. It may take a number of months for the heels to recover and the use of remedial shoeing will be necessary at this time. The sport horse may be lame with this condition and needs to not be worked during some of the recovery time.**3.6** A constructed argument with relevant points like below:

A shod hoof can't expand or contract as much as a barefoot hoof.

It has previously been proven that horseshoes inhibit the hoof's ability to expand when it lands on the ground, as it does naturally when the horse is barefoot.

The iron shoe locks the so-called hoof mechanism especially when landing after obstacles. The shod hoof can't expand or contract as much as the barefoot hoof because the shoe inhibits lateral movement. It could mean that the blood flow in the shod hoof is inhibited, and this blood flow is important for the hoof to be healthy.

Traditionally, iron horseshoes have been used for protective purposes, but as the new barefoot studies have shown, iron shoes also come with undesirable side effects.

One would like to find alternatives to iron shoes that can handle the shoe's most important functions; wear protection, anti-slip protection and protection against point loads, but at the same time allow a normal function of the hoof. I think that is the future.

As opposed to iron horseshoes, which don't cover the sensitive sole of the hoof, hoof boots cover and protect the entire surface under the hoof, which as a result provide superior point pressure protection. Hoof boots such as

Scoot Boots are lightweight, flexible, and super easy to slip on the horse when needed.

Hoof boots have been made for performance and the tread itself provides extraordinary grip on slippery surfaces. When extra grip is needed, such as in high-speed showjumping on wet, muddy grass, studs can be applied directly under the hoof boot providing the same, enhanced grip as studded horseshoes.

- 3.7 3.7.1 This is an outdoor paddock boot made with neoprene and fastened with Velcro straps. They cover the leg from below the knee to the coronet band.

3.7.2 Mud fever

- 3.7.3 The boots could may fall off when the horse is in the paddock
they could make the leg warm and damage tendons
could keep mud stuck underneath the boot and cause mud fever
horses might not like having them on all day
they might cause chafing.
(Or any other reasonable answer)

QUESTION 4

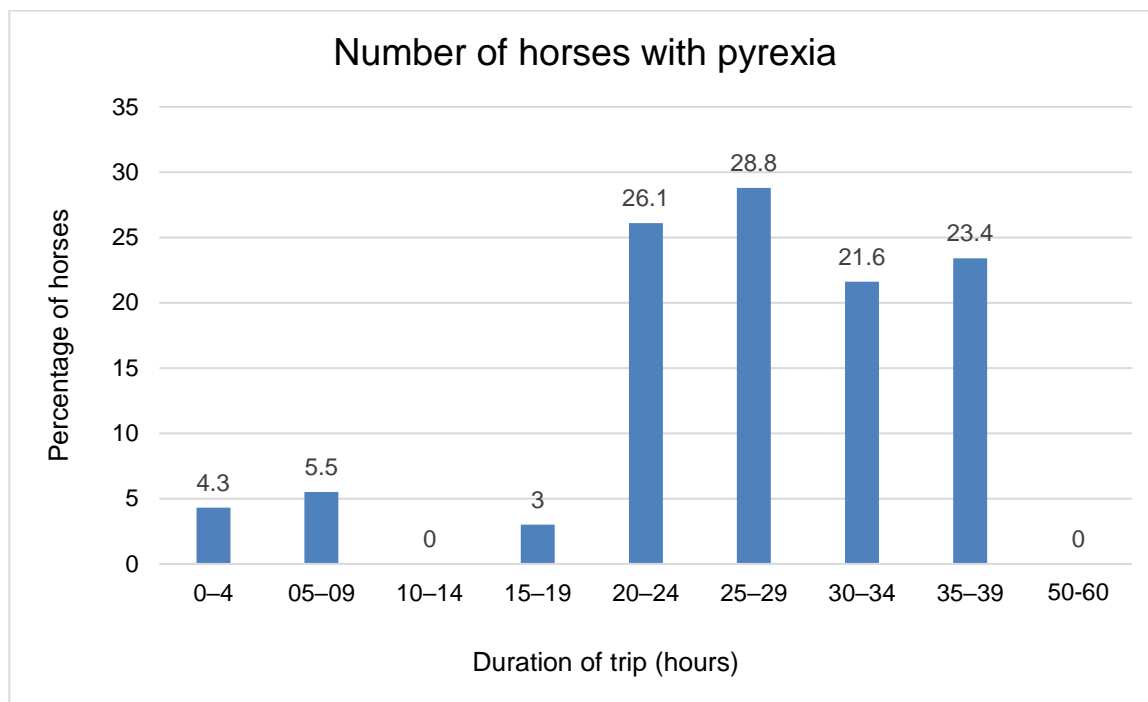
- 4.1 Sweet itch, pin worm infestation, urticaria, mange, ring worm
- 4.2 The saliva of the biting midge causing sweet itch pinworm infestation fungus bacteria any allergic response causing urticaria contact with certain plants, adverse drug reactions, sun sensitivity, neurological conditions, mites, lice
- 4.3 The four elements are a continuous cycle as the cycle does not end Once the horse has tissue damage and then inflammation, they will continue to feel itchy and therefore continue to scratch and the cycle keeps on going. Each component on its own can cause the next.
- 4.4
- vector proofing on windows and doors
 - fans
 - automatic sprays
 - use of fly sheets/boots/masks
 - use of fly spray and products containing DEET
 - keep stables clean
 - manure well managed to prevent worm infestations
 - faecal egg counts
 - deworming
 - allergy-free bedding like paper
 - removal of stinging nettles, etc.
 - regular washing of brushes to kill bacteria
 - washing of blankets, boots and numnahs.
- 4.5
- Inflammation is part of the immune system's response to injury and infection.
 - When tissues are damaged, the inflammatory response is initiated, and the immune system becomes mobilised.
 - Without inflammation wounds would fester and infections become deadly.
 - The immune system secretes pro-inflammatory cytokines, which are chemical messengers.
 - These messenger proteins are important for the biological response to infections or injury and help the body in the acute and sub-acute regenerative stages.
 - Inflammation can be seen externally in the form of swelling.
- 4.6
- Ice can be used
 - This involves icing the area at frequent intervals and monitoring the response Cold water can also be used
 - cooling the area should reduce inflammation
- 4.7
- Inflammation on a non-weight-bearing leg
 - inflammation around the eye
 - Increased inflammation around a recent surgical wound or wound
 - Inflammation in the feet due to laminitis
 - inflammation that is not responding to icing and cold hosing

- 4.8
- Any accident involving a rider at the yard
 - any fall from a horse
 - any kick from a horse
 - any horse-on-horse injury
 - any lameness
 - any high temperature in a horse
 - any wound or injury that required first-aid to horse or rider
 - any incident involving a worker and machinery
 - any incident involving an employee at the yard

QUESTION 5

- 5.1 Travel sickness /shipping fever
- 5.2 25–29 hrs
- 5.3 The horses could have received a pre-travel treatment from the vet.
- They could have been placed on prophylactic antibiotics.
 - The horses could have been healthier before travelling.
 - They could have been allowed more head freedom to place heads down.
 - They could have been fed wet hay instead of dry hay therefore less dust.
 - They could have had a different type of box with different ventilation.
- 5.4 Temperature or fever
- 5.5 Loss of appetite, dehydrated, colic like signs, less manure, hung dog expression, sweating, depression
- 5.6
- Water from home.
 - First-aid kit.
 - Concentrates (make no changes to the food).
 - Roughage if the roughage the horse is used to is not available at destination.
 - Tack.
 - Blankets.
 - Any medication the horse is on.
 - Electrolytes.
 - Passport.
 - Any travel documents required.
- 5.7
- check temperature
 - check no of droppings
 - check water intake
 - check soundness
 - check gut sounds
 - check pulse and other vitals
 - check normal temperament/demeanour
 - respiration
 - mucous membranes
 - hydration pinch test
 - watch for nasal discharge
 - respiratory noises
 - finishing feed/appetite

5.8 Bar chart



- Suitable heading
- The scale of y-axis
- The label on the y-axis
- Bars included
- Each bar labelled
- Label on x-axis
- for correct plotting

SECTION C**QUESTION 6**

- 6.1
- weather
 - temperature
 - season
 - time of the day
 - coat thickness
 - other sheltered areas/trees in paddock
 - herd leader
- 6.2 Yes as some horses may have a preference for either slow feeders or hay bags and that may then become the reason for choosing inside or outside
- 6.3 Horses are stabled for
- convenience
 - ease of access
 - to prevent injury from other horses
 - to individually feed horses
 - to be able to monitor food intake
 - to be able to monitor water intake
 - less movement labour
 - prevent disease – AHS
 - safety from predators
 - abnormal weather conditions
- 6.4
- without criticising present practices there cannot be new developments in horse care
 - it is important to test old theories to see if they are still relevant today
 - it also allows for finding more effective ways to care for horses
- 6.5 This is the conclusion from the study article.

<https://eurodressage.com/2019/09/22/barn-or-yard-when-given-choice-where-does-horse-choose-spend-its-time>

Conclusions:

The study horse lives in a small herd in a large pasture with access to a cozy barn for shelter. The weather conditions varied considerably over the study period with hourly average temperatures including wind chill or humidity ranging from –36 to +30°C. GPS tracking revealed the horse chose to spend the majority of time (79,0%) outside. He tended to spend more time in the barn in the extreme cold or extreme heat, while spending 90,8% of his time outside in the moderate temperature range of –18 to +15°C.

So when given the choice, this horse spent the majority of his time outside rather than in the barn. He tended to spend more time in the barn in temperatures of extreme cold (less than –18°C) or extreme heat (more than 15°C). Time of day was not a predictor of his choice of barn or yard.

- 6.6 Stable yards can use an in-out system where stables have access to a small paddock that can remain open to the stabled horse at night. (Any reasonable answer.)
- 6.7 Yes or no with solid reasoning
- 6.8
- After surgery
 - box rest for soft-tissue injury
 - box rest for other medical reasons
 - when the horse needs to be kept as immobilised as possible

Total: 200 marks