



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2010

EQUINE STUDIES
MARKING GUIDELINES

Time: 3 hours

200 marks

These marking guidelines were used as the basis for the official IEB marking session. They were prepared for use by examiners and sub-examiners, all of whom were required to attend a rigorous standardisation meeting to ensure that the guidelines were consistently and fairly interpreted and applied in the marking of candidates' scripts.

At standardisation meetings, decisions are taken regarding the allocation of marks in the interests of fairness to all candidates in the context of an entirely summative assessment.

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, and different interpretations of the application thereof. Hence, the specific mark allocations have been omitted.

SECTION A**QUESTION 1**

- | | | |
|------|---|-------------|
| 1.1 | Impaction colic | (1) |
| 1.2 | Pulmonary oedema | (1) |
| 1.3 | Kissing spine | (1) |
| 1.4 | Exertional rhabdomyolysis | (1) |
| 1.5 | Recurring obstructive pulmonary disease | (1) |
| 1.6 | Choke | (1) |
| 1.7 | Gastric distension | (1) |
| 1.8 | Laryngeal hemiplegia | (1) |
| 1.9 | Orthopaedic developmental disease | (1) |
| 1.10 | Step mouth | (1) |
| | | [10] |

QUESTION 2

- | | | |
|-----|---|------------|
| 2.1 | E | (1) |
| 2.2 | A | (1) |
| 2.3 | G | (1) |
| 2.4 | C | (1) |
| 2.5 | B | (1) |
| | | [5] |

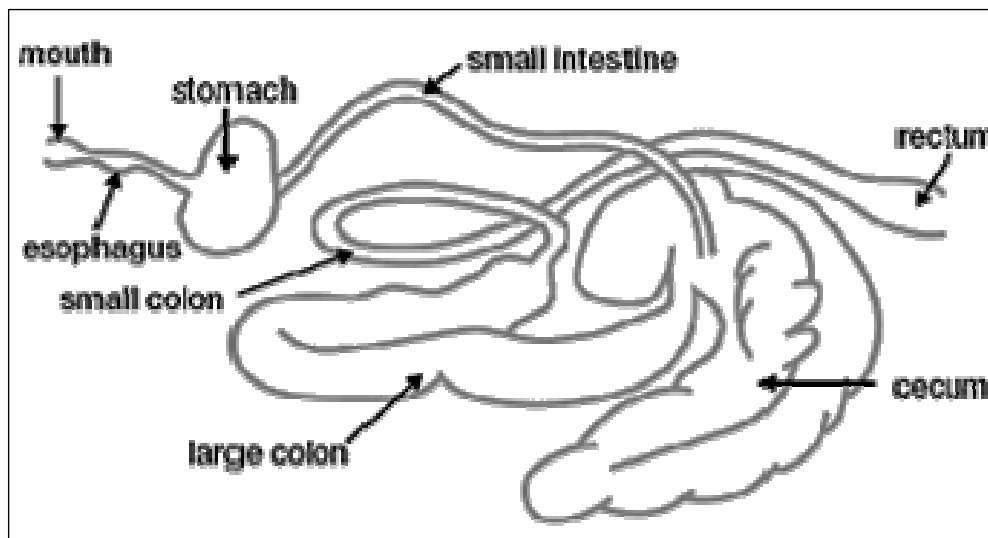
QUESTION 3

Diagram: scale (1) and accuracy (1) (2)

Labels required: Mouth (1) oesophagus (1) stomach (1) (small intestine (1))/ duodenum (1) jejunum (1) ileum (1) caecum (1) (large intestine (1))/ small colon (1) large colon (1) rectum (1) anus (1) (10)

[12]

QUESTION 4

- 4.1 D
- 4.2 B
- 4.3 C
- 4.4 B
- 4.5 A
- 4.6 C
- 4.7 D
- 4.8 B

[8]**QUESTION 5**

- 5.1 Skin – mange
- 5.2 Heart – heart murmur
- 5.3 Lungs – pneumonia
- 5.4 Hoof – laminitis
- 5.5 Cannon bone – splint
- 5.6 Kidneys – nephritis
- 5.7 Brain – wobbler syndrome
- 5.8 Caecum – gas colic
- 5.9 Teeth – shear mouth
- 5.10 Ears – mite infestation
- 5.11 Anus – worms
- 5.12 Large intestine – torsion
- 5.13 Sacrum – broken sacrum
- 5.14 Muscle – torn muscle
- 5.15 Tendon – strained tendon

Note: multiple other answers are acceptable for each part of the horse. Examiners to use their discretion.

[15]**QUESTION 6**

- 6.1 In the product name 'Alzu 12% Maize-free Meal', the 12% refers to **protein** content of the feed.
- 6.2 A race horse does best on a **14 – 16%** feed ration.
- 6.3 A riding school pony **does not need** a high protein diet.
- 6.4 An endurance horse **does need** special attention paid to his feed intake prior to a competition.
- 6.5 An Olympic level show-jumper does best on a **high** quality hay such as **teff and lucerne**.
- 6.6 A medium level dressage horse needs a **lower** feed intake than a medium level eventer.
- 6.7 Before a competition an eventer's feed intake **cannot** be reduced if he is highly strung.
- 6.8 A hack would benefit from a high **fat** diet compared to a high **simple carbohydrate** diet.
- 6.9 A horse with a high concentrate feed intake should receive **3 – 4** feeds per day.
- 6.10 A top western competition horse needs to be worked **5 – 6** times a week.

[10]

QUESTION 7

- 7.1.1 Small colon/large intestine
- 7.1.2 Small intestine
- 7.1.3 Large colon/large intestine
- 7.1.4 Small intestine
- 7.1.5 Small intestine

(5)

- 7.2.1 None
- 7.2.2 None
- 7.2.3 Fat soluble vitamins *or* minerals
- 7.2.4 Water soluble vitamins
- 7.2.5 None

(5)

[10]**QUESTION 8**

- 8.1 False
- 8.2 True
- 8.3 False
- 8.4 False
- 8.5 False
- 8.6 True
- 8.7 True
- 8.8 True
- 8.9 False
- 8.10 False

[10]

80 marks

SECTION B**QUESTION 9**

- 9.1 The horse will have had no food in the hindgut for some time (1) so the microbial population in the caecum and large intestine will be very low (1). Thus any complex carbohydrates entering the hindgut will not be digested effectively (1). To overcome this problem feed small amounts regularly (1) and include a probiotic in the diet (1). (5)
- 9.2 Horse will have access to clean, fresh water at all times (1) It will be given initially low quality grass only (1) which will gradually improve in quality (1) in order to re-establish the workings of its digestive system (1). Grass will initially be fed in small amounts three to five times a day (1) and the quantity at each feed will gradually increase until the horse has grass ad lib (1). (5)
- 9.3 A low protein concentrate (10/12%) (1) will be introduced to the diet gradually (1) as her fitness increases (1). The concentrate will be split evenly over two/three feeds (1). The total concentrate intake should ultimately be approximately 25% of the mare's daily intake (1). (5)
- 9.4 The concentrate intake would increase (1) to be a larger proportion of the daily intake (up to 40%) (1). Additional fat may be included in the diet (1) in order to help the mare gain condition (1). The concentrate can be increased from a 10% to a 12% or a 12% to a 13% (1) in order to keep up with muscle building and repair (1). (5)

[20]**QUESTION 10**

- 10.1 COPD/RAD (1) (1)
- 10.2 Dust/allergens in the environment (1) irritate the airways (1) triggering the natural response of the body to produce mucous and cough (1) in order to expel the irritants (1). (4)
- 10.3 When the horse was at the breeding farm he was on pasture and not groomed (1) and so was not exposed to the dust of bedding (1) or the concentrated ammonia in the stables (1) or the dust from his coat when groomed (1). Thus there were no/less irritants to the horse's airway (1) and the condition did not develop. (any 4)
- 10.4 Put the horse on low dust bedding, e.g. large flake shavings/newspaper (1), wet the horse's hay before feeding it to him (1), groom the horse outside (1), dampen the sand arena to reduce dust/work in grass arena (1), keep the horse in grass paddock (1), ensure good ventilation in the stables (1). If condition persists horse can be treated with cortisones (1) or antihistamines (1) and/or a ventilator (1). (any 6)

[15]

QUESTION 11

- 11.1 Concentrates should be re-introduced gradually (1) only if the temperament allows (1) and if the horse has had normal droppings for one week after the op (1). (any 2)

Horse should be confined to stable for one month (1) with 3 or more brisk hand-walks per day (1). Horse can be turned out into small paddock after 1 month (1). Ridden work can commence after consult with vet (1) approximately 2 months after operation (1). (any 4)

- 11.2 Raised temperature (1) Incisional hernia (1) Increased tenderness around incision (1) Drainage from the wound (1) Change in consistency of droppings (1) Change in volume of droppings (1) Loss of appetite (1) Any signs of colic (1) Any reluctance to walk (1) Thickening or pain in the jugular groove area (1). (any 5)

- 11.3 Yes: emotional attachment (1), possibility of insurance (1) potential value of horse as a sports or breeding horse (1).

No: no guarantee of success (1) pain and discomfort to horse extensive when compared to euthanasia (1) cost of surgery may be more than commercial value of horse (1).

Award marks for a clearly expressed opinion (1) with justification (3) and acknowledgement that there are counter-arguments, i.e. discussion (1) (5)

For example, I would chose to euthanase my horse (1) as there is no guarantee of the operation being successful (1); I would not want my horse to suffer though a painful operation and recovery period (1) and my horse has a low commercial value (1). However, if my horse were an 1.40 m showjumper (1) and he was insured (1); I would definitely have the operation done (1).

[16]

QUESTION 12

12.1

1. Horse starts refusing jumps
2. Horse showing lameness after jumping and hard work
3. Lameness diagnosis by vet at the stable yard
4. Nerve block performed at the clinic to isolate the area causing the lameness
5. X-ray performed on area causing lameness to determine the cause of the pain
6. Identification of bone chip
7. Arthroscopy performed to remove the bone chip
8. Period of light work
9. Return to normal work

(9)

- 12.2 Porous/ weak bone (1) due to overfeeding (1) or imbalance of nutrients (1) during development chips when the joints are stressed during work (1) (4)
[13]

QUESTION 13

Conditions that can be treated through correct management and use of products available at the shops	Conditions that need to be treated by a vet or by vet prescribed products
Urticaria (1) Mud fever (1) Mange (1)	Melanoma (1) Sarcoid (1) Chronic ringworm (1)

[6]

70 marks

SECTION C

Criteria on which breeder could base their selection of the mare and stallion:

Both stallion and mare must be registered with the Thoroughbred Breeders Association (1), have had good to exceptional racing performance (1), have correct conformation (1), have appealing pedigrees (1), have an absence of genital disease or infection seen by lack of smelly discharge by genitalia (1), no blistering or sores on the genitalia (1).

The mare must have good perineal conformation (1), i.e. vulva slopes in towards the abdomen so that faeces do not fall onto the external genitalia (1) and vulva for an airtight seal (1); she must preferably have a calm, maternal temperament and be easy to handle (1); she must be considered fertile by a vet (1).

The stallion must have 2 equally sized testicles (1) and must be psychologically fit to breed and race (1). (10)

Breeding method used in order to produce a registered Thoroughbred foal and justification:

Live cover would have to be used (2) in order to produce a registered foal, as the Thoroughbred Breeders Association (TBA), the registering body of Thoroughbred horses in South Africa does not yet accept artificial insemination (2). Any horse not registered by the TBA is not allowed to participate in registered races (1). (5)

Steps in breeding procedure:

The mare is determined to be in season and ready for mating by use of a teaser stallion (1). When the mare shows she is ready for mating she is prepared for breeding by: her external genitalia being washed with water (1) kick boots and a hood being put on if necessary (1) dependent on the temperament of the mare and the stallion (1). The mare is led to the breeding area to await the breeding stallion (1). For breeding the mare will have a handler at her head (1). All handlers during the breeding procedure will be wearing appropriate clothing and a hard hat for protection (1). The breeding stallion is prepared by his genitalia being washed in water (1). He is led to the breeding area by two handlers at his head (1) and one in attendance to assist penetration if necessary (1). He is allowed to approach the mare slowly at the mare's head (1) and proceed through courtship behaviour (1) to penetration (1). Once ejaculation is achieved the stallion dismounts and is led away from the breeding area (1). Both the mare's and the stallion's genitalia are cleaned with fresh water (1). (10)

Path a sperm would take from its origin in the stallion to its final destination in the mare:

The sperm is produced in the testes (1) and matures in the epididymis (1). It travels up the vas deferens (1) to the urethra (1) during ejaculation. Fluid from the three accessory glands: prostate (1), bulbourethral (1) and seminal vesicles (1) joins the sperm as it passes into the urethra during ejaculation (1). This fluid acts as a transport medium (1) and energy source (1) for the sperm. The fluid and sperm combined is called semen (1). During live cover the penis housing the urethra (1) is inserted through the mare's vulva (1) into her vagina (1). During ejaculation the semen is deposited at the base of the mare's cervix (1). The semen travels through the cervix into the uterus (1) and from the uterus into the fallopian tubes (1) where the egg/ ovum released from the ovary (1) is awaiting fertilisation (1). A single sperm will then fertilise the ovum (1). (20)

Style and structure of the essay:

Presence of introduction and conclusion (1); Succinct sentences (1); Use of paragraphs (1); Correct use of scientific language (1); Evidence of logical flow of thought (1). (5)

50 marks

Total: 200 marks