



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2012

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.

QUESTION 1

- 1.1 T 1.2 T 1.3 F 1.4 T 1.5 F
 1.6 F 1.7 T 1.8 T 1.9 F 1.10 F

[10]

QUESTION 2

- 2.1 Pregnant
 2.2 When vulvar conformation is not ideal and so after mating the vulva is stitched closed to prevent infection getting into the vagina.
 2.3 Head of the testicle where the sperm are stored.
 2.4 The process of producing sperm with half the number of chromosomes (haploid) by meiosis.
 2.5 Sires that don't produce winners but produce daughters that consistently produce superior offspring.
 2.6 Length of pregnancy from conception to birth.
 2.7 Clumps of debris and dead cells found in the allantoic fluid. Light brown in colour and soft.
 2.8 Tube in the foetus umbilical cord from the bladder, opening into the allantoic fluid.
 2.9 Difficulty in giving birth.
 2.10 First milk with antibodies in, thicker and yellower than normal milk with much higher energy content.

[10]

QUESTION 3

- 3.1 24 – 36 bpm
 3.2 12 – 20 bpm
 3.3 37.5 – 38.5 degrees Celcius
 3.4 1 – 3 movements per minute

[4]

QUESTION 4

- 4.1 Sternum (1)
 4.2 Mandible (1)
 4.3 Orbit (1)
 4.4 Occiput (1)
 4.5 atlas (1)
 4.6 axis (1)
 4.7 7 cervical vertebrae (2)
 4.8 18 thoracic vertebrae (2)
 4.9 6 lumbar (2)
 4.10 5 fused sacral (2)
 4.11 15 – 22 coccygeal (2)
 4.12 axial (1)

[17]

QUESTION 5

- 5.1 FSH
 - 5.2 Pituitary
 - 5.3 Oestrogen
 - 5.4 Ovary/follicle
 - 5.5 LH
 - 5.6 Pituitary
 - 5.7 Prosteglandin
 - 5.8 Uterus
 - 5.9 Progesterone
 - 5.10 Corpus luteum
- [10]**

QUESTION 6

- 6.1 Branding (hot or freeze branding) (1) – easy to see from a distance (1) can be changed (1)

OR

Picture I/D (1) – difficult if horse is dirty (1), can be definitive (1)

- 6.2 Microchip (1) – scan is quick, efficient (1) and accurate (1)

OR

DNA blood testing (1) – needs time, no quick answer (1), but accurate (1)

[6]

QUESTION 7

7.1 H 7.2 E 7.3 A 7.4 G 7.5 B

7.6 D 7.7 I 7.8 M 7.9 C

[9]

QUESTION 8

- 8.1 Insensitive or horny sole or frog (1), sensitive vascular sole or frog (1), laminae (1) digital cushion (1), pedal bone (1), navicular joint capsule (1), ligaments (1). Any 4

- 8.2 Poultice bandage (1) to draw any dirt out, keep puncture wound open to drain to avoid abscess forming. (1)

[6]

QUESTION 9

- 9.1 Physitis
- 9.2 Anhidrosis
- 9.3 Cushings / pre-cushings
- 9.4 Laminitis
- 9.5 Metabolic bone disease
- 9.6 HYPP
- 9.7 Thumps
- 9.8 Iron deficiency

[8]

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|-----------------|
| 80 marks |
|-----------------|

SECTION B**QUESTION 10**

- 10.1 Chronic (1) Obstructive (1) Pulmonary (1) Disease (1) and Recurrent (1) Obstructive Airway (1) Disease (6)
- 10.2 Keep horse out (1), use alternate bedding (newspaper, sand, sunflower husk) (1), soak hay and moisten concentrates (1), treat with cortisone. (1) (4)
- 10.3 **Inspiration** requires a vacuum to form within the chest cavity; this is accomplished when the ribs are pulled forward with a slight rotation outward by the intercostal muscles. The diaphragm contracts, it pulls backwards from its relaxed concave shape, causing it to become almost flat. The vacuum that is formed by these two movements, and the increased chest cavity volume, results in the lung pressures being less than that of the atmospheric pressure so air rushes into the lungs down along the pressure gradient. At rest only the diaphragm is used for inspiration, rib movement is used when the air demand is increased. Inspiration uses energy. With **expiration** the diaphragm relaxes and falls forward into its dome shape, the ribs drop back to resting position and the lungs deflate by elastic recoil of the pleura, interstitial and bronchiolar tissue which squeezes most of the air out. Abdominal muscle contraction is used when assistance for expiration is required; this pushes abdominal contents forward onto the diaphragm. (5)
- 10.4 Respiration is not synchronised with the walk and trot but at the canter and gallop normal horses take one breath per stride and this is called **respiratory-locomotor coupling**. Horses may also swallow once or twice during every minute of exercise. In a galloping horse it lifts legs and the head goes up so the gut slides back and the air goes in, this means that inspiration is during the suspension phase of the gait. Then the legs go down and the head goes down so the gut moves forward and the air is pushed out. This shows expiration occurs during the support phase, it begins when the leading hind leg makes support and ends as the leading foreleg lifts off. This all seems mechanically sensible. (5)

[20]

QUESTION 11

- 10.1 13 years old (2)
- 10.2 Galvynes groove 1/3 of way down corner incisor (1), tusher out so older than 6 (1), angle of incidence becoming longer (1), dental stars in all incisor tables (1), infundibulum only left in corner incisor tables (1), 13 year hook (1). (6)
[8]

QUESTION 12

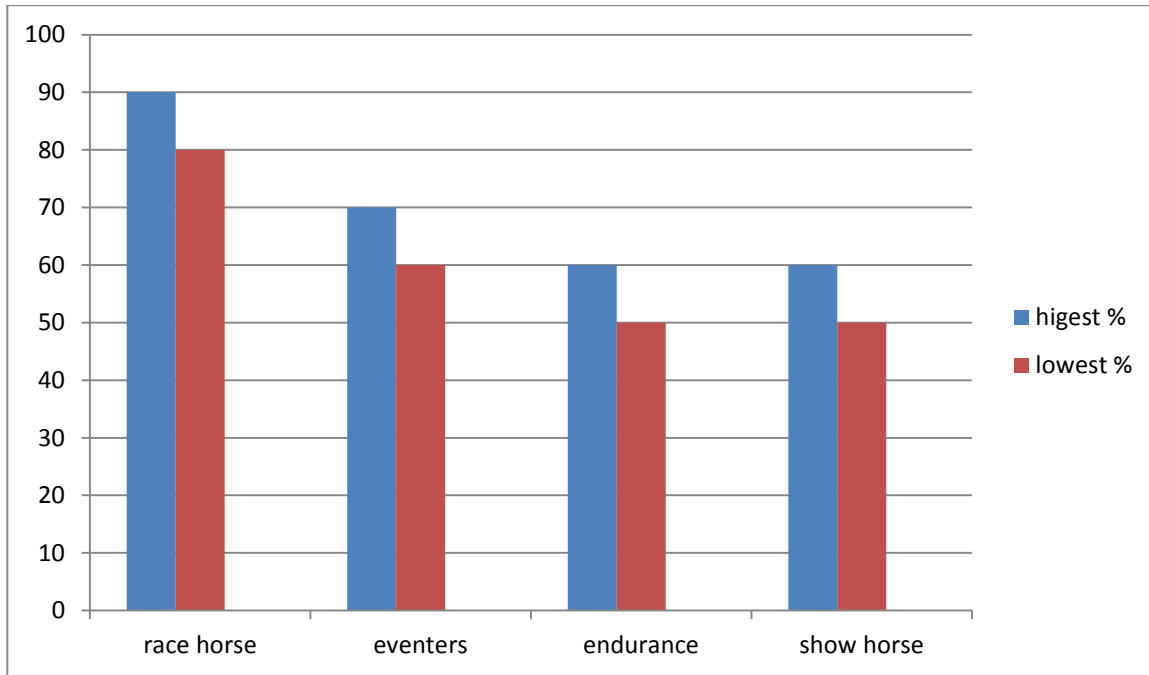
- 12.1 30 kg (2.5% of body weight)
- 12.2 10%
- 12.3 80:20
- 12.4 7 kg
- 12.5 endurance
- 12.6 420 kg
- 12.7 very high
- 12.8 warmblood
- 12.9 12%
- 12.10 70:30
- 12.11 Quarter horse
- 12.12 50:50
- [12]**

QUESTION 13

- 13.1 PU and PD (1), straining to urinate (1), sore back (1), weight loss (1), general depression and lethargy (1), Anorexia (1), mouth ulcers and smelly breath (1). Any 4. (4)
- 13.2 Remove cause which removes strain on kidneys (1), increase water intake to flush urea out the system (1), drench with fluid, soak hay, wet feed i/v fluids (1) and diuretics (1). Yes as this an old horse euthanasia would relieve his suffering from an incurable problem that will continue to get worse with time. (1) Any 4. (4)
- 13.3 Answer missing (2)
- 13.4 Urinating (1), sweating (1), breathing out (1), droppings (1). (4)
- 13.5 Blood becomes concentrated with increased salt content (1), detected by hypothalamus (1) which stimulates the pituitary gland (1) to secrete ADH (anti diuretic hormone) (1) which causes more water to be absorbed back from the kidney (1) so that more water is retained by the body and the urine becomes concentrated (1). (6)
[20]

QUESTION 14

- 14.1 • Y-axis discipline of horses (1)
- X-axis percentage (1)
- Accuracy and correctness of graph (2)



Graph depicting percentage of horses to have gastric ulcers in different disciplines

- 14.2 A gastric is an erosion of the stomach lining (1) due to excessive exposure to acid. (1) (2)
 - 14.3 Race horses (1), because they are living in a high stress environment (1), fed high grain diets (1), confined to stables (1), may be on chronic non-steroidal anti-inflammatory drugs (bute) (1) may not always have access to grass/hay (1) and have a high intensity exercise regime (1). Any 4 – must be for racehorse. (4)
- [10]**

70 marks

SECTION C**QUESTION 15**

See rubric on page 9 – 10 for criteria: The following is to check correctness or soundness of knowledge and if any major sections have been left out.

Knowledge:

Condition score

Condition score of 1

Heneke system 1 – 9

No excess fat on withers or neck and shoulder, ribs clearly visible.

Conformation for lameness**Front and hind legs:**

Should have: Straight down front from shoulder to ground, back point of buttock to ground
 Straight down side (no bench, over or back at knee)
 All joints clean cool and non-puffy
 Good bone (not tied in below knee)
 Long forearm short cannon
 Well-developed thigh and gaskin
 Pastern angle 45 – 50 degrees

Should not have: Pastern other than above angles
 No base wide or narrow
 No splay or pigeon toes, sickle or cow hocks
 No bench, over or back at knee
 Not tied in below knee

Feet / Hooves:

Should have: All identical in shape and size
 Correct hoof pastern axis
 Strong hooves
 Correct balance

Should not have: Boxy feet
 Contracted heels
 Cracks
 Flat feet

Movement:

Should be: Straight
 Correct flight of foot
 Track-up or over track

Should not: Dish
 Plait
 Brush
 Move wide behind

Discipline: Long sloping pastern and shoulder to give fluid, energy conserving gaits
 Long legs, light body
 Conformationally sound all round (as above)
 Strong hind quarters
 Good hooves for distance

17 marks allocated to Anatomy of 40 (see rubric)

Health care plan: deworm – worm burden influences health and amount fed. Every 3 – 4 months. Can faecal float to check burden.
 Check teeth – hooks cause quidding and food loss or stops horse eating effectively. Every 6 months.
 Vet check (heart, kidneys, liver, lungs) ensure all systems running correctly and efficiently.
 Probiotics to help digest food.
 Vaccinations once healthy immune system in place – tetanus, AHS influenza. NB if going to compete at rides.
 Get passport completed so that can compete.

13 marks allocated to Health care of 40 (see rubric)

Feeding plan:

Introducing back to feed

Start small amounts of hay at frequent intervals (very gradually).

Watch gut motility and droppings passed, can easily get colic if overfed.

Water ad lib.

Best quality hay.

Two to three days of one flake (slice) per hour.

Then ad lib.

Slowly increase amount of hay until ad lib or at 2.5% predicted body weight.

After a few more days – gradually introduce grain.

Select high fibre products (soaked sugar beet pulp, soaked lucerne pellets, barley and whole oats).

Add vitamin and mineral supplement with probiotics.

Too much grain can lead to founder.

Aim to regain lost weight slowly.

Limit fresh grazing, add protein supplement.

Once at optimal condition an endurance horse requires a high fat diet for sustained aerobic energy.

Horses require 2.5% body weight dry matter daily. If endurance arab weights 450 kg it requires 11.25 kg dry matter per day. Endurance is hard work, therefore ratio of concentrates to roughage will be about 40:60. Concentrates at 12 – 14% protein.

10 marks allocated to Nutrition out of 40 (see rubric)

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| 50 marks |
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RUBRIC: ESSAY EVALUATION

| Criteria | 5 | 4 | 3 | 2 | 1 | |
|---------------------|--|---|--|---|---|----|
| Introduction | The introduction is clear and interesting. It draws the reader into the essay and contains an effective hook. All information correct. | The introduction effectively previews the content of this essay. It is fairly successful at drawing the reader into it and contains a hook. All information correct. | The introduction is satisfactory as a 'preview' of the essay. It is somewhat successful at drawing the reader into it. Most information correct. | The introduction is distinguishable but is not very successful at previewing the contents of the essay. It does not seem very interesting/appealing to the reader. Most information correct. | The introduction is not present or is part of the body of the essay. It does not invite the reader to keep reading. It may be confusing or unclear. Information missing or incorrect. | /5 |
| Organisation | The essay is very well organised. It exhibits command of focus, coherent organisation, and interesting development. Body paragraphs develop ideas well and the argument flows very well throughout the essay. | The essay is well organised. It exhibits command of focus, coherent organisation, and interesting development. Body paragraphs develop most ideas well and the argument flows throughout the essay. | Organisation is satisfactory. Essay exhibits some command of focus and is developed fairly well. Most body paragraphs develop some ideas well and the argument flows for the most part. | This essay does not have a consistent focus. Some attempt at organisation is visible but the essay is not structured well. The writer 'jumps' from idea to idea and the information seems to lack purpose. | This essay lacks proper organisation. Ideas seem to be thrown together without a consistent sense of development or focus. It reads like a random collection of ideas. | /5 |
| Knowledge | <ul style="list-style-type: none"> • Thorough knowledge of the topics or topic discussed in the essay. • No omission of material significant to the argument. • No significant factual errors. • Names correctly spelled. • Factual knowledge appropriate to the subject and required by the discussion provided. • Fully addresses the assigned question. • All necessary information supplied to reader. Responds precisely to topic, indicating an excellent grasp of the topic. All key concepts, themes, | <ul style="list-style-type: none"> • Good knowledge of the topic or topics discussed. • Only minor omissions of material significant to the argument. • Few factual errors. • Names correctly spelled. • Most factual knowledge appropriate to the subject and required by the discussion provided. • Addresses the assigned question. Most necessary information supplied to reader. Responds precisely to topic, indicating an excellent grasp of the topic. Most key concepts, themes, issues, ideas are identified, | <ul style="list-style-type: none"> • Overall knowledge of the topic or topics sound, but places where that knowledge is not complete. • Some material significant to the argument omitted. • Several factual errors. • Names misspelled. • Does not provide all the necessary factual knowledge required by the discussion. • May wander off the assigned question. <p>Some knowledge assumed on part of the reader. Some key concepts, themes, issues, ideas are identified, explained, and analysed. This response indicates a</p> | <ul style="list-style-type: none"> • Evidence of gaps in the knowledge of the topic or topics, but does have some knowledge. • Material significant to the argument omitted. • Significant factual errors or garbled information. • Names misspelled. • Fails to provide significant factual information required by the discussion. <p>The reader may not be supplied with the information needed to understand the essay. The response does not address many key concepts, themes, issues, or ideas. Some ideas are identified but the</p> | <ul style="list-style-type: none"> • Serious gaps in knowledge. • Multiple factual errors. • Important evidence missing. • Names are misspelled. • Little necessary supporting information. • Off-topic (automatic unsatisfactory, no matter how good the essay otherwise is). <p>Most knowledge on the part of the reader assumed. The response lacks a proper analysis of key concepts, ideas, themes and issues. There is no critical analysis of the material. The response is very vague, general, and/or short.</p> | |

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|----------------------|---|---|--|--|---|-----|
| | issues, ideas are thoroughly identified, explained, and analysed. The essay indicates an exceptional understanding of the material. X6 | explained, and analysed well. This response indicates a good understanding of the material. X5 | satisfactory understanding of the material. X5 | explanation is limited. This response indicates a limited/partial understanding of the material. X4 | X4 | /30 |
| Comprehension | Exhibits excellent command of expression (grammar, sentence structure, sentence variety). <ul style="list-style-type: none"> • Complete sentences. • No to few grammatical/spelling errors. The writer does not make any mistakes and the prose flows exceedingly well. | Exhibits excellent command of expression (grammar, sentence structure, sentence variety). There are only minor errors and they are minor and do not impede the flow of this essay. <ul style="list-style-type: none"> • Complete sentences. • Only minor grammatical/spelling errors. | Exhibits a satisfactory command of expression (grammar, sentence structure, sentence variety). The prose flows relatively well but there are errors and they occasionally impede the flow of this essay. Occasional incomplete or run-on sentences. <ul style="list-style-type: none"> • Grammatical and spelling errors. | Exhibits a weak command of expression (grammar, sentence structure, sentence variety). There are many errors which impede the flow of this essay. Many sentences are awkward and poorly constructed. <ul style="list-style-type: none"> • May have incomplete or run-on sentences. • May contain many spelling and grammatical errors. | There are many grammar or spelling errors that distract the reader from the content. Most sentences are awkward and poorly constructed. The piece does not flow. Many serious writing errors. <ul style="list-style-type: none"> • Major structural deficiencies. • Logic of the essay not clear. | /5 |
| Conclusion | The conclusion effectively summarises the argument, re-states key ideas and the thesis. All information correct. | The conclusion is effective at re-stating the key arguments and the thesis. All information correct. | The conclusion ties up all the loose ends in a satisfactory fashion. The re-statement of thesis and arguments may be cursory or missing. Most information correct. | The conclusion does not tie up all the loose ends. It is short/the essay just ends. Most information correct. | The concluding paragraph is missing. Information missing. | /5 |
| Total | | | | | | /50 |