



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2008

EQUINE STUDIES
MARKING GUIDELINES

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 Intra-articular injection
- 1.2 Nerve block
- 1.3 Flexion testing
- 1.4 Endoscopy
- 1.5 X-ray
- 1.6 Teasing
- 1.7 Rectal palpation
- 1.8 De-worming
- 1.9 Rasping/ floating
- 1.10 Euthanasia

[10]**QUESTION 2**

- 2.1 C
- 2.2 J
- 2.3 B
- 2.4 G
- 2.5 A
- 2.6 I
- 2.7 F
- 2.8 D
- 2.9 H
- 2.10 E

[10]**QUESTION 3**

- 3.1 Testes
- 3.2 Scrotum
- 3.3 Vas deferens
- 3.4 Ampulla gland
- 3.5 Vesicular gland
- 3.6 Prostate gland
- 3.7 Bulbourethral gland
- 3.8 Urethra
- 3.9 Epididymis
- 3.10 Penis

[10]

QUESTION 4

- 4.1 False
- 4.2 True
- 4.3 False
- 4.4 True
- 4.5 True
- 4.6 False
- 4.7 True
- 4.8 False
- 4.9 False
- 4.10 False

[10]**QUESTION 5**

- 5.1 C
- 5.2 B
- 5.3 A
- 5.4 B
- 5.5 D
- 5.6 D
- 5.7 C
- 5.8 A
- 5.9 B
- 5.10 D
- 5.11 D
- 5.12 B
- 5.13 C
- 5.14 A
- 5.15 A

[15]**QUESTION 6**

- 6.1 Erythrocyte
- 6.2 Carry oxygen
- 6.3 White blood cell
- 6.4 Fights infection
- 6.5 Thrombocyte

[5]

QUESTION 7

- 7.1 Sunlight
- 7.2 Swollen joints/ skeletal abnormalities/ lameness
- 7.3 Vitamin B group
- 7.4 Metabolism/ correct functioning of nervous system
- 7.5 Vitamin A
- 7.6 Reduced sight night blindness/ poor hoof growth/ reproductive failure
- 7.7 Green forage/ hay
- 7.8 Blood clotting
- 7.9 Vitamin C
- 7.10 Bleeding, ulcerated gums/ internal bleeding

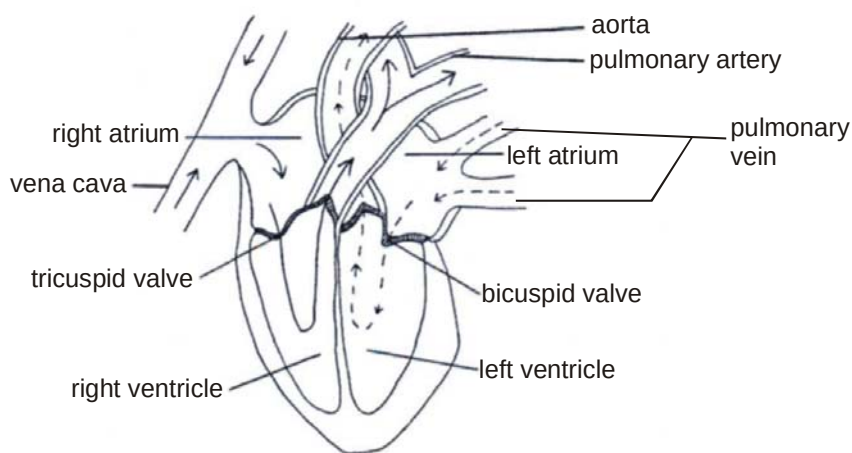
[10]**QUESTION 8**

- 8.1 A only
- 8.2 A and B
- 8.3 A only
- 8.4 A and B
- 8.5 A only
- 8.6 B only
- 8.7 B only
- 8.8 B only
- 8.9 A and B
- 8.10 A only

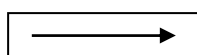
[10]**80 marks****SECTION B****QUESTION 9**

- 9.1 Correct scale ✓
Neatness ✓

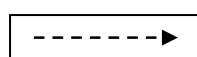
- 9.2 Tricuspid valve
Bicuspid valve
Left atrium
Right atrium
Left ventricle
Right ventricle
Aorta
Vena cava
Pulmonary artery
Pulmonary vein

**(2)****(10)**

- 9.3 and 9.4 (see diagram)

(2)

De-oxygenated blood

(2)

Oxygenated blood

[16]

QUESTION 10

- 10.1 Increased cloud cover will mean reduced light✓ hitting the pineal gland✓ in spring and summer. As a result of this the pineal gland will not release **FSH** in order to start ovulation✓ or maturation of sperm✓ or will only release this hormone much later ✓. This will mean reduced fertility in horses✓ and fewer foals✓. This will impact negatively on the industry✓ and mean reduced revenue✓, and could ultimately lead to the collapse of the industry. (10)
- 10.2 Sports performance must be exceptional✓, conformation must be good to exceptional✓ and his pedigree should be appealing✓ in order for him to be marketable as a sire. Assess the stallion's fertility✓ by external assessment of reproductive organs: testes both present✓ and similar size✓ absence of disease and infection, i.e. no smelly discharge✓, blistering or sores on genitalia✓. Assess the stallion psychologically: must be able to get and maintain an erection✓ must show interest in mares✓, must be manageable in a breeding situation✓.
(any 8) [18]

QUESTION 11

- 11.1 Roaring or whistling on inspiration✓; reduced performance✓. (2)
- 11.2 Roaring occurs due to air passing over the partially paralysed larynx✓ which vibrates and causes noise✓. Reduced performance occurs due to the larynx not opening fully during hard work due to the paralysis✓ which limits oxygen intake✓. (4)
- 11.3 Yes✓, but do a Hobday/ tieback operation immediately✓. (2)
[8]

QUESTION 12

- 12.1 Nerve damage✓; lack of use✓. (2)
- 12.2 If his muscles had atrophied due to nerve damage✓ no✓; if his muscles had atrophied due to lack of use✓ yes✓. (4)
- 12.3 Sweeny✓ due to the frequent collision of the shoulder of one pony with another pony✓. (2)
[8]

QUESTION 13

- 13.1 Horses living in a high stress✓, artificial environment✓ on a high grain diet✓, e.g. racing or competition yard✓. (4)
- 13.2 High stress environment means the horse is not relaxed✓ so is less likely to eat✓. The absence of food in the stomach means that the stomach lining is not protected from the stomach acid✓ which is produced continually✓. High grain diets pass quickly through the stomach✓ leaving the horse with an empty stomach✓ that is attacked by the stomach acid. The artificial environment means the horse does not have access to grazing✓ increases stress levels✓ and means that there is not continually food in the stomach✓. (10)

- 13.3 Physical appearance – horse becomes thin✓, colic symptoms✓, signs of malnutrition✓
 Performance – reduced✓, horse is lethargic✓ and can become depressed✓ due to lack of correct nutrients available to horse.

(6)
 [20]

70 marks

SECTION C

Condition horse is suffering from (1 mark):

Exertional Rhabdomyolysis (ER) ✓

NOTE: accept synonyms Azoturia/ Monday morning Disease/ Tying Up

ER is caused by (6 marks):

A diet too rich in simple carbohydrates✓; Imbalance between diet and work programme✓; Inconsistent work programme (day off on full rations) ✓; Poor conditioning or fitness✓; Electrolyte or mineral imbalances✓; Hormone imbalance especially in fillies✓; Genetic disposition✓.

Accept any 4

These causes result in an inadequate flow of blood to the muscle tissue✓ which results in muscle spasm✓ muscle cells are damaged and can rupture leaking contents into bloodstream✓.

Accept any 2

Immediate treatment (4 marks):

Keep the horse still✓ and warm in his stable✓, can place blanket over hindquarters✓. Call the vet✓ who will administer anti-inflammatories✓. Treat spasm in muscles with heat therapy✓.

Accept any 4

Impact on racing career (3 marks):

Depending on the severity of the attack✓. In this case the attack was severe✓ which increases the likelihood of a recurrence✓. However with correct management the horse should be able to continue racing✓.

Accept any 3

Exercise programme (11 marks):

Day 1 – 7✓ Hand walking✓

Day 7 – 20✓ Walk for 10 – 15 minutes per day✓

Day 21 – 40✓ Walk and trot for 25 – 30 minutes per day✓

Day 41 – 60✓ Walk, trot and canter for 45 – 50 minutes per day✓

Day 60+✓ Walk, trot, canter and gallop for 45 – 50 minutes per day✓

NB. Horse must warm-up at a walk for 20 minutes and cool down at a walk for 20 minutes. These times are included in the exercise times suggested above. ✓

NOTE: allow a 5 day variation in the schedule.

Daily feeding programme (20 marks):

Manage the diet carefully with few simple carbohydrates✓ to limit the glycogen stored in the muscle✓; replace simple carbohydrates with complex carbohydrates✓ and fats✓ as they are absorbed in hindgut as volatile fatty acids✓ and glycerol and three fatty acids✓ to reduce glucose in blood and glycogen stored in muscle tissue✓; feed three small meals a day✓ to optimise digestion and absorption of nutrients✓; feed good quality grass ad lib✓ to increase horse's intake of complex carbohydrates✓ suggested grass to feed would be teff and lucerne✓.

Horse weighs 500 kg, so should be getting a minimum of 12.5 kg of food✓ but will probably need more due to his high work rate✓ keeping in mind that a horse of this size has a capacity of approximately 15 kg's (1). 40% of this should be concentrate feed✓, i.e. 5 kg concentrates (1) and 7.5 kg forage✓ or more depending on appetite – feed ad lib✓. Suggested feeding programme (3 marks awarded as follows: at least three concentrate feeds✓ spaced evenly throughout the day✓, grass given ad lib✓) e.g.:

5.00 am top up grass and water

6.00 am concentrate feed, 1 kg

8.00 am exercise

9.00 am top up grass and water

12.00 pm concentrate feed, 2 kg; top up grass and water

6.00 pm concentrate feed, 2 kg; top up grass and water for evening

Accept any 20

Style and structure: 5 marks awarded as follows:

Grouping of ideas into paragraphs✓

Correct use of language ✓

Correct use of terminology ✓

Flow of essay ✓

Introduction and conclusion present ✓

50 marks

Total: 200 marks