



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2012

EQUINE STUDIES

Time: 3 hours

200 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 8 pages.
 2. You are required to answer **all** the questions.
 3. All answers must be written in the Answer Book provided to you.
 4. Answers must be numbered exactly as the questions are numbered.
 5. Read the questions carefully.
 6. It is recommended that you spend approximately 1 hour on each section.
 7. It is in your own interest to write legibly and present your work neatly.
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SECTION A**QUESTION 1**

State whether the following statements are **True** or **False**.

- 1.1 The horse's heart can get bigger the more it exercises.
- 1.2 The pericardium surrounds the myocardium.
- 1.3 The atrium is a thick walled chamber.
- 1.4 The mitral valve is found on the left, and the tricuspid valve on the right.
- 1.5 Systole is the phase when the heart is relaxing.
- 1.6 Anaemia is when there are increased numbers of red blood cells.
- 1.7 The lymphatic system plays a major role in immune defence in the horse.
- 1.8 The spleen holds extra blood cells, releasing them during exertion to increase blood volume and the amount of oxygen transported to tissues.
- 1.9 The left side of the heart pumps blood to the lungs.
- 1.10 Veins have thick elastic walls that can stretch and withstand the surges of high blood pressure.

[10]

QUESTION 2

Explain the following terms listed below:

- 2.1 Gravid
- 2.2 Caslick's operation
- 2.3 Epididymis
- 2.4 Spermatogenesis
- 2.5 Broodmare Sires
- 2.6 Gestation
- 2.7 Hippomanes
- 2.8 Urachus
- 2.9 Dystocia
- 2.10 Colostrum

[10]

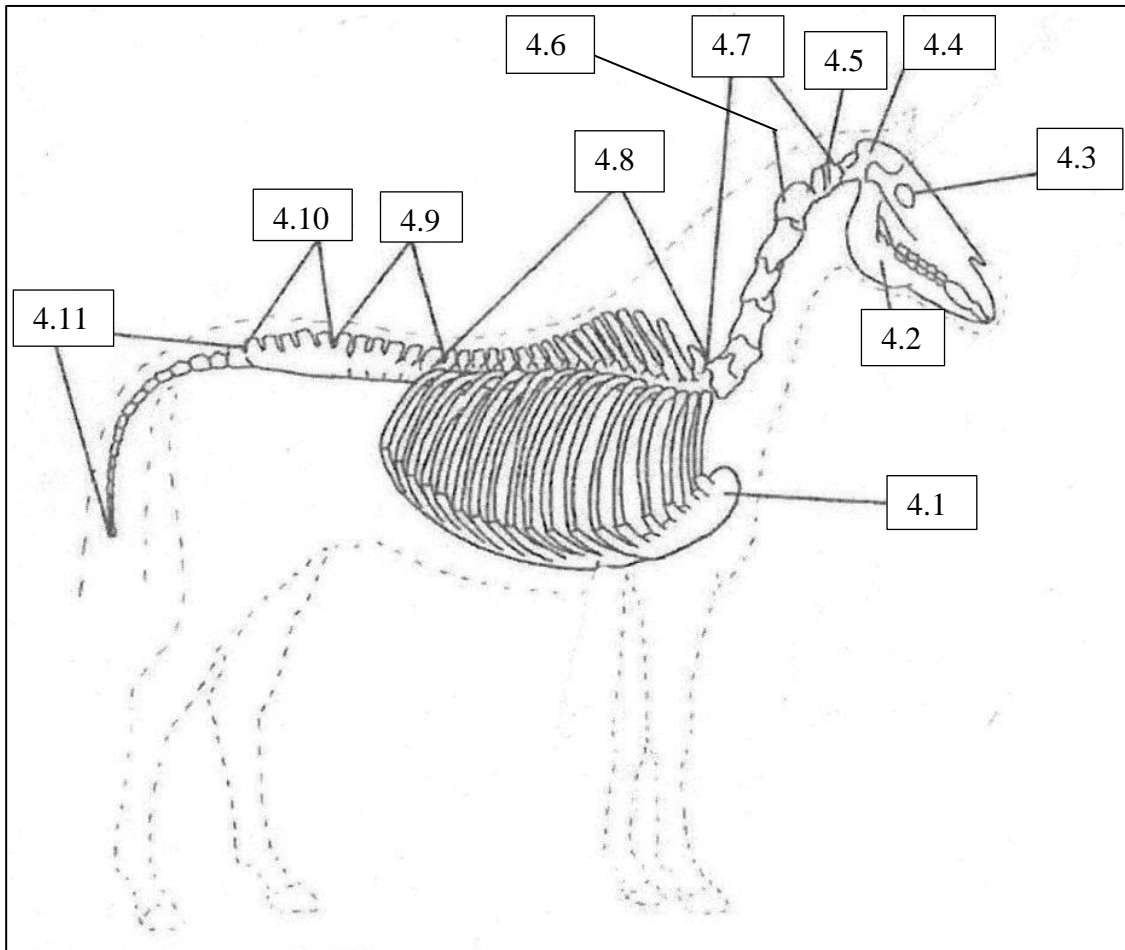
QUESTION 3

Give the parameters for the following in the horse.

- 3.1 Heart rate (1)
 - 3.2 Respiration rate (1)
 - 3.3 Temperature (1)
 - 3.4 Borborygmi (1)
- [4]**

QUESTION 4

- 4.1 – 4.6 Label the following diagram. (6)
- 4.7 – 4.11 Give the name and number of vertebrae. (10)



[Equiz Newcomer, Vanessa Britton, J.A. Allen: 1996 (pg 6)]

- 4.12 Diagram of the skeleton of the horse. (1)
- [17]**

QUESTION 5

Complete the following table on the mare's reproductive cycle:

| Action the hormone is responsible for | Name of the hormone | Gland where the hormone is produced |
|---|---------------------|-------------------------------------|
| Development of follicles | 5.1 | 5.2 |
| Behavioural signs of oestrus | 5.3 | 5.4 |
| Maturation of one follicle | 5.5 | 5.6 |
| Stops the function of the corpus luteum | 5.7 | 5.8 |
| Dominant dioestrus hormone | 5.9 | 5.10 |

[10]

QUESTION 6

NAME the best method of identification of the horse that you would use in the following two scenarios and justify your reasoning with sound knowledge.

6.1 A farmer in the Drakensberg mountains where stock theft is high. (3)

6.2 A race horse going to races that needs to be identified quickly and accurately before and after a race. (3)

[6]

QUESTION 7

Match the disease/condition column to its most common anatomical locality below. Write only the question number and the corresponding letter next to it.

| | Disease/Condition | | Most common Anatomical locality |
|-----|--------------------|---|---------------------------------|
| 7.1 | Ringworm | A | Muscle |
| 7.2 | Recurrent uveitis | B | Small intestine |
| 7.3 | Azoturia | C | Cervical spinal cord |
| 7.4 | Melanoma | D | Lymph nodes |
| 7.5 | Anterior enteritis | E | Eye |
| 7.6 | Strangles | F | Kidney |
| 7.7 | Metritis | G | Perineum |
| 7.8 | Cystitis | H | Dermal layer |
| 7.9 | Wobblers | I | Uterus |
| | | J | Spinal cord |
| | | K | Subcutaneous layer |
| | | L | Brain |
| | | M | Bladder |

[9]

QUESTION 8

A horse stands on a 5 cm long nail in his stable that goes straight up into his foot.

- 8.1 What structures could the nail have penetrated in the foot? (4)
- 8.2 What type of bandage would you use in this situation and why? (2)
- [6]**

QUESTION 9

Give the names of the nutritional disorder that best fit the following description.

- 9.1 Inflammation of the joints and growth plates.
- 9.2 A condition that particularly affects horses that are exported from cool climates to hot humid climates.
- 9.3 Horses with this condition are fed high doses of magnesium to decrease insulin resistance.
- 9.4 A condition managed with a low-GI diet and for which the feed is completely restricted, while the horse is suffering an attack usually brought on by an excess of sugar, but can also have other non-nutritional triggers.
- 9.5 OCD, DJD, OJD are all forms of this disease.
- 9.6 A muscle disorder that traces back to one particular sire.
- 9.7 A dramatic condition caused by a major imbalance of electrolytes in the body.
- 9.8 The cause of slow progressive weakness, loss of co-ordination, weight loss and depression.

[8]

80 marks

SECTION B

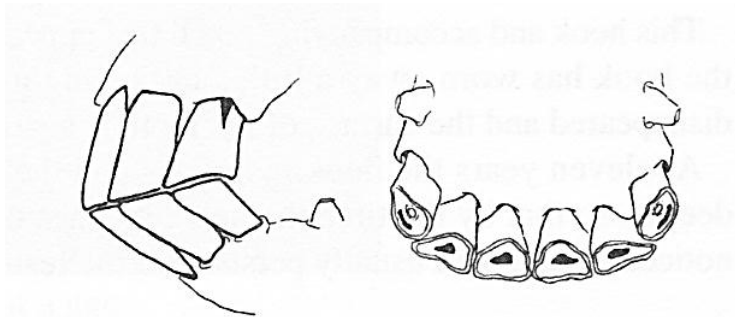
QUESTION 10

The respiratory disease COPD has been renamed as ROAD.

- 10.1 Give the full names of these two abbreviations. (6)
 - 10.2 State 4 ways to prevent this condition in horses. (4)
 - 10.3 Explain how a horse breathes at rest. (5)
 - 10.4 How does this differ to when breathing at the canter or gallop? (5)
- [20]**

QUESTION 11

The diagram below is of the teeth of a horse.



- 11.1 Determine how old this horse is. (2)
 - 11.2 Justify your answer in Question 11.1 by giving 6 reasons why you say this horse is this age. (6)
- [8]**

QUESTION 12

Complete the missing information in the table below. Write only the question number and the answer next to it.

| Breed | Discipline | Weight in kg | Exercise level | Total dry matter intake in kg | Percentage protein of concentrates | Ratio of roughage: concentrates |
|--------------|---------------|--------------|----------------|-------------------------------|------------------------------------|---------------------------------|
| Shire | Parades | 1200 | Low | 12.1 | 12.2 | 12.3 |
| Shetland | Pony rides | 280 | Low | 12.4 | 10% | 90:10 |
| Arab | 12.5 | 12.6 | 12.7 | 10.5 kg | 14% | 40:60 |
| 12.8 | Dressage | 700 | Medium | 17.5 kg | 12.9 | 12.10 |
| 12.11 | Barrel racing | 625 | High | 15.5 kg | 14% | 12.12 |

[12]

QUESTION 13

A 22 year old Boerperd gelding is suffering from chronic renal failure.

- 13.1 What symptoms would you expect to observe? (4)
- 13.2 Give two ways that you could treat this condition, and explain why each treatment would result in an improvement in the condition. (4)
- 13.3 The owner is considering euthanasia. Would you support or oppose euthanasia in this case? Explain your answer. (2)
- 13.4 List the four ways in which horses can lose water. (4)
- 13.5 Explain how the horse's body reacts when it loses too much water. (6)
- [20]**

QUESTION 14

... Studies have shown that 80% – 90% of racehorses in training have gastric ulcers. Performance horses that are stabled on a high grain low roughage diet would be expected to have a high incidence of ulcers as well. Studies have shown that 60% – 70% of eventers, 50% – 60% of endurance horses and 50% – 60% of show horses have ulcers.

[Taken from: Petalia, <www.petalia.com.au>]

- 14.1 Draw a suitable graph to illustrate the information above. (4)
- 14.2 Explain what a gastric ulcer is. (2)
- 14.3 In general, which horses are most at risk and why do you think this is so? (4)
- [10]**

70 marks

SECTION C**QUESTION 15**

The horse pictured below has been bought from the abattoir with an eye to rehabilitating her for endurance competition.



[<www.ckequinehospital.com/blog/80/Dentistry-More-than-Floating-Teeth>]

Write an essay in which you analyse the existing body structure (condition score) of the horse pictured above. Before you bought her you spent some time studying her conformation and movement to see if she was predisposed to lameness in any way. Discuss specifically what you would be looking for in her conformation for lameness and discipline. Based on your observations suggest feeding and health care plans to firstly get the horse into optimum condition before starting work and secondly, once the horse is in optimum condition, to optimise the performance of this horse when competing in endurance.

Knowledge including introduction and conclusion

| | |
|---------------|-------------|
| Nutrition | (10) |
| Anatomy | (17) |
| Health Care | (13) |
| Comprehension | (5) |
| Organisation | (5) |
| | [50] |

50 marks

Total: 200 marks