



NATIONAL SENIOR CERTIFICATE EXAMINATION  
NOVEMBER 2014

**EQUINE STUDIES**

Time: 3 hours

200 marks

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**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 12 pages and 3 sections. Please check that your question paper is complete.
  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 Every grey coloured horse will have at least one grey parent.
- 1.2 When looking at a horse's conformation, the croup should be higher than the withers.
- 1.3 At rest, shallow respiration requires the use of only one muscle, the diaphragm.
- 1.4 The African Horse Sickness 'Free Zone' is found in a small area of the Western Cape.
- 1.5 Vitamin A is important in the optimal functioning of the eye and sight in the horse.
- 1.6 Extended hours of artificial lighting are used to bring horses into season earlier than they would naturally, that is, at the beginning of summer.
- 1.7 The small intestine is so named for its short length.
- 1.8 Undigested starch that flows into the hind gut will be broken down by microbes into lactic acid.
- 1.9 Both kidneys of the horse are bean shaped.
- 1.10 Skeletal muscle is also known as striated muscle.

**[10]**

**QUESTION 2**

**Choose the correct answer for the following multiple choice questions.**

2.1 Most of the water in the digestive tract is reabsorbed from the

- A Stomach.
- B Small intestine.
- C Large colon.
- D Small colon.

2.2 Complex carbohydrates are

- A Starches and sugars.
- B Cellulose and hemicellulose.
- C Lignin and indigestible fibre.
- D None of the above.

2.3 Horses' molar teeth are known as Hypsodont. This means:

- A They are continuously erupting.
- B They have a smooth grinding surface.
- C They are covered in enamel.
- D They have no blood or nerve supply.

2.4 A long curly hair coat called hirsutism is often seen with:

- A Chronic malnutrition.
- B Excess protein consumption.
- C HYPP.
- D Cushing's disease.

2.5 Sweating is an important physiological occurrence because:

- A It tells us the horse has worked hard.
- B Evaporation of that sweat helps cool the horse.
- C They need a way to get rid of excess electrolytes.
- D It helps us to see if a saddle fits correctly.

2.6 Biliary in horses:

- A Causes anaemia.
- B Is a tick borne disease.
- C Is also known as Babesiosis.
- D All of the above.

2.7 Recurrent Airway Obstruction was formally known as:

- A RER
- B COPD
- C HYPP
- D SCID

2.8 A mare requires her highest nutrition:

- A In the first trimester of pregnancy.
- B In the third trimester of pregnancy.
- C During lactation.
- D Before breeding.

2.9 The farrier's tool used to open clinches before removing the nails is called a:

- A Clinching tong.
- B Buffer.
- C Hoof knife.
- D Anvil.

2.10 Capillary refill in a healthy horse should take no more than:

- A 3 seconds.
- B 6 seconds.
- C 9 seconds.
- D 12 seconds.

[10]

### QUESTION 3

Label the diagram of the hoof below. Label 7 is asking for the name of the joint.

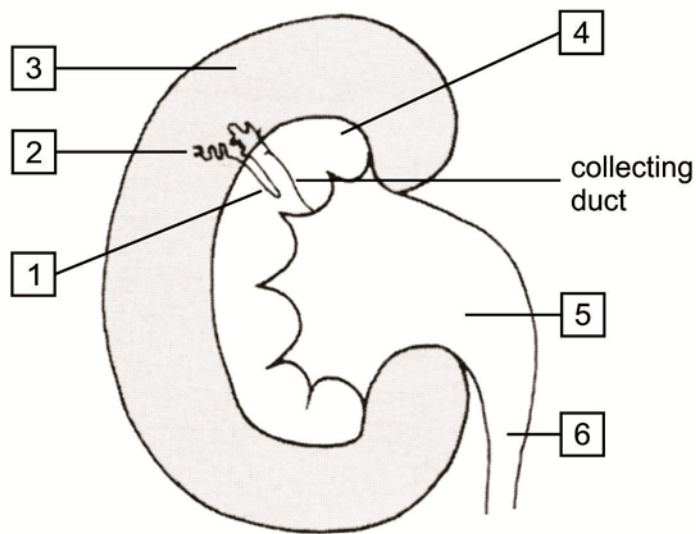


[<[http://en.wikipedia.org/wiki/Horse\\_hoof](http://en.wikipedia.org/wiki/Horse_hoof)>]

[14]

**QUESTION 4**

**Label the diagram of the kidney below:**



[Introduction to Horse Biology by Zoe Davies]

**[6]**

**QUESTION 5**

**Give the equine term used for the descriptions below:**

- 5.1 A condition where the larynx collapses when exercising.
- 5.2 Large fermentation vat that is the first part of the large intestine and hind gut of the horse.
- 5.3 A palatable hay fed to horses that is dark green in colour, with thick stalks and leaves, with a high protein and calcium content.
- 5.4 A small retained tooth that sits in front of the upper molar that can interfere with the bit.
- 5.5 Coloured spots on or near the coronary band of white legs.

**[5]**

**QUESTION 6**

A horse's teeth can be used as a guide for estimating the age of the horse. As horses age they undergo distinct changes in their teeth.

In the table below, give two distinguishing features for each age that the teeth at that age would have. Write out the number and your answer only. Do not repeat any features more than once.

Age of horse	Distinguishing dental features
5 years old	1. 2.
7 years old	3. 4.
10 years old	5. 6.

**[6]****QUESTION 7**

7.1 Name three types of muscles in a horse. (3)

7.2 'Tying up' is a condition of muscles. Give three other names for this condition. (3)  
**[6]**

**QUESTION 8**

Name, in ascending order, the four joints of the leg found between the coffin joint and the hip joint.

**[4]**

**QUESTION 9**

When working with stallions and thoroughbred horses in general, there are times when an anti-rearing bit should be used and times when it should not be used.

- 9.1 Suggest three occasions when an anti-rearing bit should be used. (3)
- 9.2 Suggest three occasions when an anti-rearing bit should not remain on a horse. (3)
- 9.3 What is the other name used for the anti-rearing bit? (1)
- [7]**

**QUESTION 10**

- 10.1 In the table below, complete the missing information in relation to a horse's vital signs. Write out the letter and answer only.

Vital sign	Normal range	Method of measuring
Temperature	A	B
Pulse	C	D
Respiratory rate	E	F

(6)

- 10.2 Why is it important to know an individual horse's normal resting vital signs? (2)
- [8]**

**QUESTION 11**

Describe four different humane methods used to physically restrain horses. Where relevant, include any equipment used.

**[2]****QUESTION 12**

A vet has prescribed a course of medication. Name four methods of administering internal medication to a horse.

**[2]**
**80 marks**

**SECTION B****QUESTION 13**

The following table shows the average values for a number of feed components.

<b>Food</b>	<b>Energy MJ/kg</b>	<b>Protein g/kg</b>	<b>Fibre %</b>	<b>Calcium g/kg</b>	<b>Phosphorus g/kg</b>
Lucerne chaff	9	170	27	13	3
Meadow (grass) chaff	7	85	32	3	4
Oats	12	96	10	1	3
Vegetable oil	38				
Pellets (light to moderate work)	11	110	15	1,2	0,5

A five year old gelding in moderate work has access to some pasture so the owner feeds it oats twice a day. This means the horse might not be getting the desired calcium to phosphorus ratio.

- 13.1 What else could be a concern when feeding oats looking at the above table? (1)
- 13.2 What is the desired Ca : P ratio? (1)
- 13.3 Which feed on the table would be closest to the desired Ca : P ratio? (1)
- 13.4 Give two reasons why the owner might choose to add lucerne chaff to the horses diet. (2)
- 13.5 Give two reasons why replacing the oats with pellets that are designed for light to moderate work would be a sensible nutrition decision. (2)
- 13.6 Describe one health problem linked with the decision in Question 13.5 and explain how it could be overcome. (2)
- 13.7 Give two reasons why the horse owner would replace some oats with a cup (250 ml) of vegetable oil. (2)
- 13.8 If larger amounts of vegetable oil are added to a diet it is recommended that vitamin E should be added as a supplement. Why do you think this is so? (2)



The manufacturers provide the following advice for daily feeding weights when a pelleted feed is used.

Horse weight	Maintenance or light work	Moderate work
400 kg	1,5 kg to 3,0 kg	2,0 kg to 4,0 kg
600 kg	2,0 kg to 4,0 kg	3,0 kg to 5,0 kg

- 13.9 Give two explanations for the variation from 3,0 kg to 5,0 kg for feeding a 600 kg horse in moderate work. (2)
- 13.10 If you were feeding 5,0 kg of feed per day how would you split this up per meal and why? (2)
- 13.11 How much dry matter could a 600 kg horse eat per day? Show your calculations. (2)
- 13.12 Explain why hay is so important in the horse's diet. (3)
- 13.13 What concentrate to roughage ratio should be used for a horse in medium work? (1)
- [23]**

#### QUESTION 14

**For each of the following horses, list two factors which may influence their nutritional requirements.**

- 14.1 A four month old thoroughbred foal. (2)
- 14.2 A four year old thoroughbred racehorse in the middle of a six-week race preparation. (2)
- 14.3 Thoroughbred wet mare. (2)
- [6]**

#### QUESTION 15

There are many different types and causes of colic. Briefly discuss at least 5 types and causes relating to this statement in a paragraph format.

**[10]**

**QUESTION 16**

**Every year we experience outbreaks of different equine diseases and worm infestations in different provinces.**

- 16.1 Explain the difference between contagious and infectious in relation to diseases in the horse. (2)
- 16.2 Name one disease in horses that is infectious and one that is contagious. (2)
- 16.3 Explain the difference between isolating a horse and quarantining a yard. Give an example of a disease where each would be implemented. (2)
- 16.4 Explain the difference between a vector and an intermediate host using examples. (4)
- [10]**

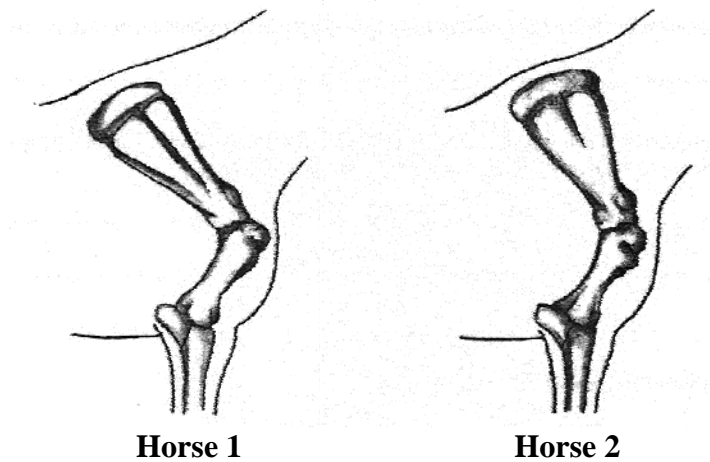
**QUESTION 17**

Bran is often fed when the horse is going on a long journey in the box. Give two advantages and one disadvantage of this practice.

**[3]**

**QUESTION 18**

The following diagrams illustrate the shoulders of two horses.



- 18.1 Describe the visible difference between the two horses' shoulders. (2)
- 18.2 Which horse would have the greater range of shoulder movement? (1)
- 18.3 Explain how this greater range of shoulder movement would be advantageous to a galloping horse. (2)
- 18.4 How would the other horse move in a trot? (2)
- 18.5 Which competition discipline would Horse 2 be good for and why? (2)
- [9]**

**QUESTION 19**

- 19.1 Explain why as a horse starts to exercise, the heart and respiration rate increase. (3)
- 19.2 Explain why as a horse becomes more dehydrated, the urine becomes more concentrated. (6)
- [9]**

<b>70 marks</b>
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**SECTION C****QUESTION 20**

Your friend has a mare that is in foal. Explain to your friend what signs and changes to look out for in the mare that will tell him foaling will take place soon. Tell him about the different stages of foaling so that he can monitor that the birth is progressing well. Lastly include some information on dystocia, red bag and retained placenta that he should be very cautious to look out for and what he must do should any of them occur. It is not necessary to include information on each different presentation of dystocia. However, name and describe two signs that could indicate either maternal or foetal dystocia.

Health care	20
Anatomy	20
Writing skills	10

**[50]**

<b>50 marks</b>
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**Total: 200 marks**