



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2009

EQUINE STUDIES

Time: 3 hours

200 marks

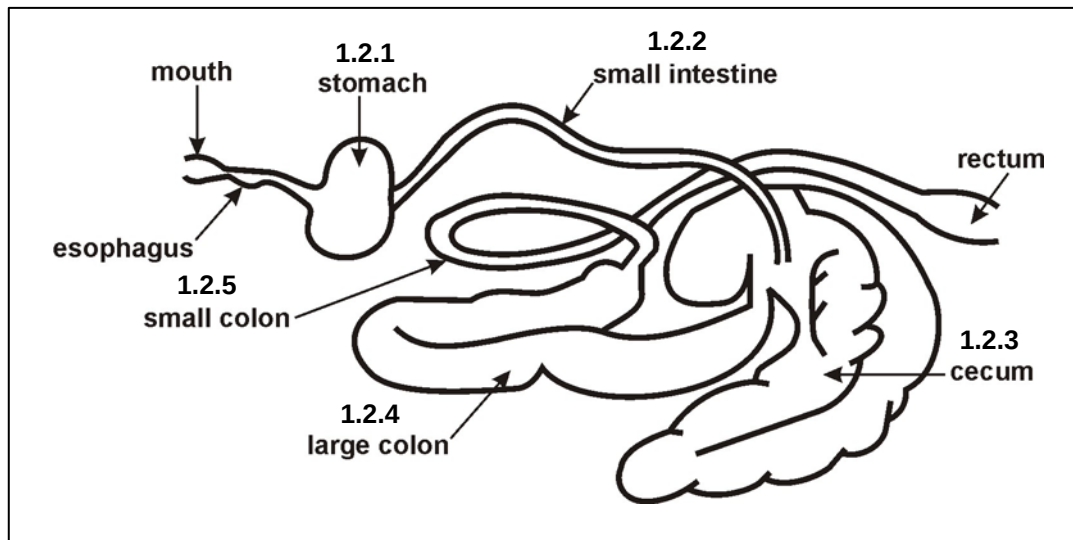
PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper consists of 12 pages.
 2. You are required to answer **all** questions.
 3. All answers are to be written in the Answer Book provided.
 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.
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SECTION A**QUESTION 1**

1.1 List the six main groups of nutrients needed for good health in horses. (6)

1.2 Using your answers from 1.1, name the nutrient/s absorbed at each site numbered in the diagram below. If no nutrient is absorbed at the site, answer 'none'. (5)



[<http://www.biovance.com/bio_i/digestive_tract.jpg>]

1.3 Name the **mineral** that is lacking in the body in each case of deficiency described below.

1.3.1 Foal suffers from orthopaedic developmental disease, mature horse suffers from rhabdomyolysis. (1)

1.3.2 Horse suffers from mental apprehensiveness, excitement and muscular spasm and twitching. (1)

1.3.3 Horse suffers from dehydration, weakness, exhaustion and/or depraved appetite. (1)

1.3.4 Horse suffers from anaemia, weakness and fatigue. (1)

1.3.5 Horse suffers from infertility and goitre. (1)

[16]

QUESTION 2

Explain the following terms listed below.

- | | | |
|------|-----------------------|-------------|
| 2.1 | Dioestrus | (1) |
| 2.2 | Anaestrus | (1) |
| 2.3 | Embryo transfer | (1) |
| 2.4 | Free breeding | (1) |
| 2.5 | Semen extender | (1) |
| 2.6 | Libido | (1) |
| 2.7 | Perineal conformation | (1) |
| 2.8 | Swab | (1) |
| 2.9 | Venereal disease | (1) |
| 2.10 | Abortion | (1) |
| | | [10] |

QUESTION 3

- | | | |
|-----|--|------------|
| 3.1 | List five factors you would consider when selecting a broodmare. | (5) |
| 3.2 | State three visible genital irregularities that would cause you to reject a stallion when selecting one for stud. | (3) |
| | | [8] |

QUESTION 4

Give an example of a condition a **male** horse might be suffering from if the following procedure was performed on him.

- | | | |
|------|---|-------------|
| 4.1 | Ultrasound of the caudal aspect (back) of the front leg | (1) |
| 4.2 | Arthroscopy | (1) |
| 4.3 | Flexion test | (1) |
| 4.4 | Administration of anthelmintics | (1) |
| 4.5 | Penicillin vaccination | (1) |
| 4.6 | Tie-back operation | (1) |
| 4.7 | Stitching | (1) |
| 4.8 | Rectal examination | (1) |
| 4.9 | Teeth floating | (1) |
| 4.10 | Drenching with liquid paraffin | (1) |
| | | [10] |

QUESTION 5

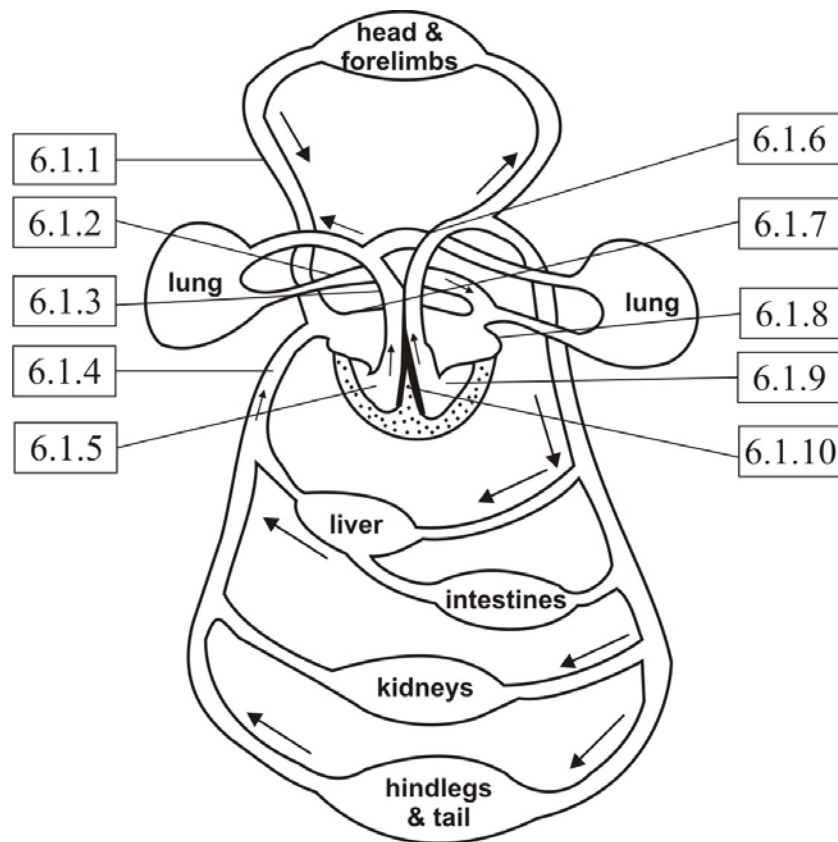
Complete the missing information on health issues that relate to various body systems in the table below. Write only the question number and answer in your answer book.

System affected	Condition	Cause OR infective agent	Prognosis for sports career
5.1	Pneumonia	5.2	Good
Skeletal	5.3	Deficiency or excess of nutrients during development	5.4
5.5	Heart murmur	Ineffective valves	5.6
5.7	Exertional rhabdomyolysis	5.8	Poor
5.9	Ulcers	5.10	Good
Dental	Shear mouth	5.11	5.12

[12]

QUESTION 6

- 6.1 Provide labels for the following diagram (6.1.1 to 6.1.10) of the cardiovascular system. (10)



[<http://upload.wikimedia.org/wikibooks/en/6/65/Anatomy_and_physiology_of_animals_Mammalian_circulatory_sytem.jpg>]

- 6.2 Select the most correct answer from the options below the question. Write the question number and the letter of the correct answer.

6.2.1 The semi-lunar valve prevents back flow of blood from the

- A pulmonary artery to the right ventricle
- B right ventricle to right atrium
- C left ventricle to left atrium
- D aorta to left ventricle

(1)

6.2.2 The tricuspid valve prevents back flow of blood from the

- A pulmonary artery to the right ventricle
- B right ventricle to right atrium
- C left ventricle to left atrium
- D aorta to left ventricle

(1)

6.2.3 The bicuspid valve prevents back flow of blood from the

- A pulmonary artery to the right ventricle
 - B right ventricle to right atrium
 - C left ventricle to left atrium
 - D aorta to left ventricle
- (1)

6.2.4 Arteries do not

- A have thick walls
 - B carry deoxygenated blood
 - C have a narrow lumen
 - D carry blood under high pressure
- (1)

6.2.5 The heart beat is regulated by the

- A hypothalamus
 - B spinal cord
 - C sino-atrial node
 - D brain
- (1)

6.2.6 The resting heart rate of the average horse is

- A 24 – 33 beats per minute
 - B 36 – 42 beats per minute
 - C 45 – 54 beats per minute
 - D 56 – 65 beats per minute
- (1)

[16]

QUESTION 7

Match the picture of the skin condition in column A with the name of the condition in Column B.

COLUMN A: Picture of skin condition	COLUMN B: Name of skin condition
7.1  [<http://imagebank.ipcmedia.com/imageBank/atk/E_F9DB43F-6897-4488-8E6B-1EA339136EB7.jpg>]	Mud fever
7.2  [<http://cp57.hostingshop.com.au>]	Ringworm
7.3  [<http://www.mvol.co.uk>]	Papilloma

COLUMN A: Picture of skin condition	COLUMN B: Name of skin condition
7.4  [<http://www.horsegroomingsupplies.com>]	Sweet itch
7.5  [<http://www.icb.usp.br>]	Rain scald
7.6  [<http://www.tekstotaal.com>]	Mange

COLUMN A: Picture of skin condition	COLUMN B: Name of skin condition
7.7  [<http://www.horseandhound.co.uk>]	Sarcoid
7.8  [<http://img.tfd.com/vet/thumbs/gr135.jpg>]	Urticaria

[8]

80 marks

SECTION B**QUESTION 8**

8.1 Study the information below on the composition of the five types of Alzu horse feeds.

FEED CONTENTS	TYPE OF FEED				
	Maize Free 12%	Riding Horse 10%	Performance Horse 13%	Enduro 13%	Kentucky 15%
Protein	> 12	> 10	> 13	> 13	> 15
Fat	> 2.5			> 4	> 2.5
Fibre	> 12			6 – 20	> 12
Moisture	< 12	< 12	< 12	< 12	< 12
Phosphor	> 0.4	> 0.3	> 0.5	> 0.5	> 0.3
Ca:P Ratio	1.2 – 2:1	1.2 – 2:1	1.2 – 2:1	1.5 – 2:1	1.2 – 2:1

[<<http://www.alzu.co.za/pages/horse2.htm>>]

Select a suitable feed from the table above for each of the horses described below. In your answer give the name of the most suitable feed for the horse described, and justify your selection.

8.1.1 A mature showjumper in hard work. (4)

8.1.2 A riding school pony in moderate work. (4)

8.1.3 A race horse in very hard work. (4)

8.2 Analyse the exercise programme and feeding routine of the horse below.

Horse details: 12 year old Warmblood gelding, weight 600 kg. Competes regularly in Medium level Dressage competition. This horse has a relaxed temperament, and the rider sometimes complains of him feeling lethargic.

Exercise programme

Day	Work	Time spent
Monday	Dressage	1 hour
Tuesday	Dressage	1 hour 20 minutes
Wednesday	Small jumping exercises	1 hour
Thursday	Dressage	1 hour
Friday	Dressage	1 hour 20 minutes
Saturday	Hack out	1 hour
Sunday	Rest	

Feeding routine: This horse is fed 3 meals a day consisting of a 12% concentrate and teff. The ratio of concentrate to hay is 40:60. The total weight of dry matter intake is 12 kg.

Comment on the correct and incorrect elements in the **exercise programme** and **feeding routine** above. For each incorrect element that you identify suggest a correction for this situation.

(7)
[19]

QUESTION 9

- 9.1 Draw a diagram of the mare's reproductive system. (9 marks will be awarded for labels, 1 mark for accuracy and 1 mark for clarity of the drawing.) (11)
- 9.2 Compare two methods of teasing that you are familiar with. Discuss the pro's and con's of each method, and describe a situation in which each method would be appropriately used. (18)
- [29]

QUESTION 10

- 10.1 Give an example of a situation that could cause a tendon injury, and explain why this situation is likely to damage the tendon. (2)
- 10.2 From the two procedures outlined below, choose the correct procedure to follow after a tendon injury. In your answer state whether you have selected Procedure A or Procedure B and explain your selection. (5)
- Procedure A:** Horse box rested for two weeks after injury
Horse then allowed free paddock exercise
Ridden work begins one month after injury
- Procedure B:** Horse confined to the box for one month
Hand walking commences from day 1
Ridden work begins in week seven after injury
- 10.3 If this horse was sold in the future, would you expect the seller to declare this previous injury? Explain your answer. (5)
- [12]

QUESTION 11

11.1 Below is a list of actions a yard manager performs regarding a horse with colic.

The manager: observes the horse
removes the feed and water from the stable
makes the bed deep and comfortable
calls the vet

Prioritise these actions, so that you write down these four actions in your answer book in the order in which they should be performed.

(4)

11.2 Below are six statements, some are true and some are false. Identify the **false** statements and explain why they are false.

Statement A: The amount of pain a horse is in indicates the seriousness of the colic.

Statement B: The pulse is the best guide to the seriousness of the colic; a high pulse indicates a serious colic.

Statement C: A horse with colic must be walked or lunged in order to ease the pain.

Statement D: If a colicking horse is allowed to roll he will twist his bowel.

Statement E: The main risk of a colicking horse rolling in his box is that he will cast himself.

Statement F: A pain killer can mask the symptoms of a colic, and should not be given to the horse until the vet has seen the horse.

(6)

[10]

70 marks

SECTION C

During a hard training session a race horse does not sustain the kind of pace expected of him and his breathing is laboured. After the gallop he shows signs of distress and coughs repeatedly.

The horse's temperature is not elevated, but the manager assumes the horse has a virus. He rests the horse on the following day, and notices some blood around the nostrils. The manager now thinks that the horse may have banged his head and caused trauma to the nostrils. He assumes the situation is not serious and works the horse lightly for the rest of the week. The manager plans to return the horse to hard work the following week.

Write an essay in which you produce an explanation for the symptoms shown by this horse including an explanation for the origin of the blood in the nostrils. Include the structures the blood passes to reach the nostrils, and the mechanisms by which it reached the nostrils and summarise the effect of this condition on the horse's performance. Also include in your essay, your assessment of the manager's handling of the situation and how you would have managed this horse.

Note: 5 marks will be awarded for style and structure of essay.

50 marks

Total: 200 marks