



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2008

EQUINE STUDIES

Time: 3 hours

Marks: 200

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This paper consists of 9 pages.
 2. You are required to answer **all** questions.
 3. Answer questions in the Answer Book provided.
 4. Read the questions carefully.
 5. Plan your time according to marks allocated.
 6. Work neatly and number answers exactly as the questions are numbered.
-

SECTION A**QUESTION 1**

Give the correct term for each of the procedures described below.

- 1.1 An injection into the joint.
- 1.2 The numbing of part of the limb in order to detect the site of lameness.
- 1.3 Hyperflexion of the limb to test for sensitivity.
- 1.4 Insertion of a small camera inside the horse's body.
- 1.5 Images of bone taken to detect fractures.
- 1.6 Use of a non-breeding stallion to detect whether a mare is in oestrus or not.
- 1.7 The manual method of assessing pregnancy status, ovulation status or whether a blockage has occurred in the gastro-intestinal tract.
- 1.8 The process of applying an anthelmintic in order to relieve internal parasite burden.
- 1.9 Use of a serrated tool to file down hooks on a horse's teeth.
- 1.10 Termination of a horse's life in a humane manner by a vet.

[10]**QUESTION 2**

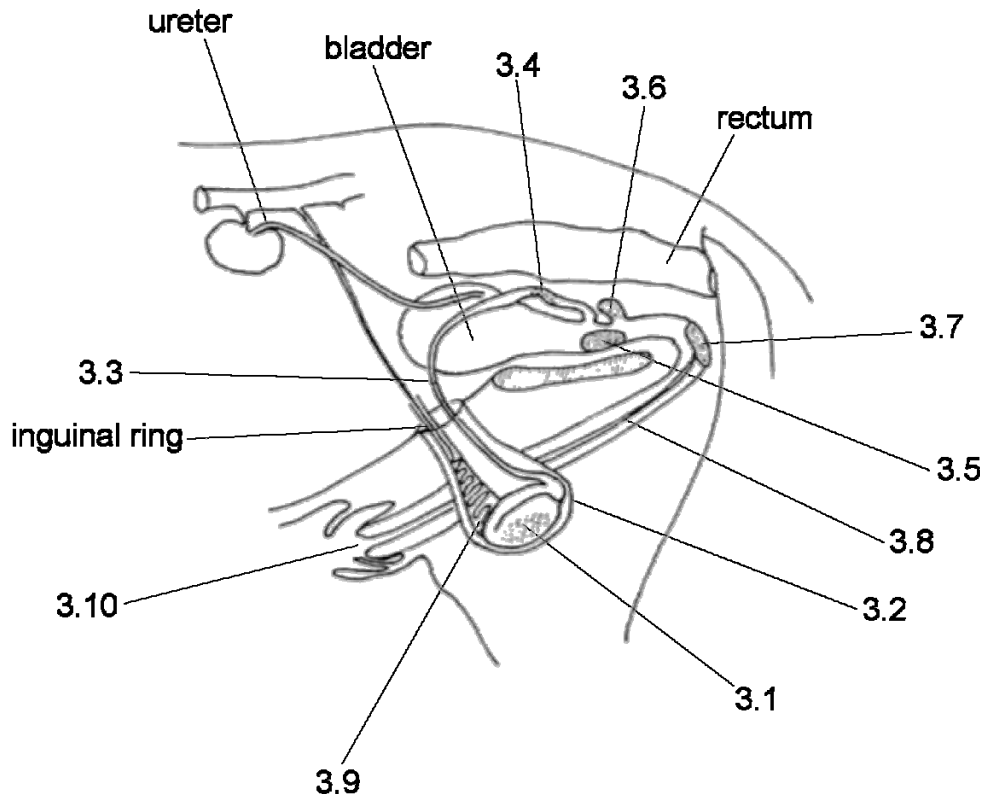
Match the disease on the left with the symptoms described on the right. Write only the question number and the corresponding letter of the correct description.

	Disease name		Symptoms
2.1	Tetanus	A	Yellow mucous membranes, bloody urine
2.2	African Horse Sickness	B	High temperature, clear nasal discharge, cough
2.3	Equine Influenza	C	Closing of the third eyelid across the eye, ears pricked, tail raised
2.4	Strangles	D	Incoordination of hindquarters
2.5	Biliary	E	Bumps on skin
2.6	Epistaxis	F	Anxiety, abdominal pain
2.7	Colic	G	Thick nasal discharge, swollen sub-mandibular lymph glands
2.8	Wobbler	H	Urinating posture
2.9	Acute renal failure	I	Cough after exercise, bloody nasal discharge
2.10	Urticaria	J	Fever, sweating, severe respiratory distress, death within hours

[10]

QUESTION 3

Provide labels for the diagram below.



[10]

QUESTION 4

State whether the following statements are **true or false**:

- 4.1 Most mares remain in oestrus throughout the year.
- 4.2 A cryptorchid may not be used for breeding.
- 4.3 The increasing day length in Spring acts on the ovaries to produce FSH.
- 4.4 Sperm are made in the seminiferous tubules.
- 4.5 The most labour saving method of teasing is to put the teaser in a paddock with the mares.
- 4.6 The safest way of breeding is paddock breeding.
- 4.7 Gestation is around 336 days.
- 4.8 During the first stage of labour the mare is calm and expectant.
- 4.9 Colostrum is not essential for the foal's survival.
- 4.10 The optimum age to wean a foal is at 2 months of age.

[10]

QUESTION 5

Select the most likely answer. Write the question number down and the letter you have selected.

5.1 Low oxidative muscle fibres ...

- A are found in high proportions in cold blooded horses.
- B require energy from fats.
- C are used for fast, explosive work.
- D only function in oxygen-rich conditions.

5.2 Thumps is a result of spastic contractions of the following muscles:

- A intercostal
- B diaphragm
- C abdominal
- D oesophageal

5.3 The most likely place for an impaction colic to occur is the ...

- A pelvic flexure.
- B sternal flexure.
- C diaphragmatic flexure.
- D the region where the large colon becomes the small colon.

5.4 Most nutrients are absorbed in the ...

- A stomach.
- B small intestine.
- C large colon.
- D small colon.

5.5 The non-glandular region of the stomach where ulcers occur is the ...

- A fundic region.
- B pyloric region.
- C cardiac region.
- D oesophageal region.

5.6 The micro-organisms in the hindgut produce ...

- A volatile fatty acids.
- B vitamin B's.
- C vitamin C.
- D all of the above.

5.7 A heave line develops as a result of ...

- A coughing.
- B heavy draft work.
- C double expiration.
- D ill fitting tack.

- 5.8 Spondylitis is commonly known as ...
- A kissing spine.
 - B poll evil.
 - C nettle rash.
 - D girth galls.
- 5.9 Windgalls ...
- A are not considered a blemish.
 - B are only found above the fetlock joint.
 - C are considered an unsoundness in pre-purchase vetting.
 - D are not a result of wear and tear.
- 5.10 Which of the following is not known as degenerative joint disease?
- A osteo-arthritis
 - B arthritis
 - C orthopaedic developmental disease
 - D epiphysitis
- 5.11 The axial skeleton is composed of...
- A front limbs and hind limbs.
 - B head and ribs.
 - C head, ribs and front limbs.
 - D head, ribs and vertebrae.
- 5.12 Which of the following does not accurately describe what could be found in a joint?
- A bones, ligaments, cartilage
 - B blood, bone and cartilage
 - C nutrients, ligaments and cartilage
 - D oxygen, joint fluid and bone
- 5.13 Septic arthritis ...
- A can be handled by the yard manager.
 - B should be handled by the vet.
 - C must be treated with antibiotics immediately.
 - D can be ignored.
- 5.14 Arthritis is a ...
- A breakdown of cartilage in the joint.
 - B breakdown of bone in the joint.
 - C bone chip in the joint.
 - D loss of synovial fluid in the joint.
- 5.15 Within muscle fibre you find ...
- A myofibrils.
 - B endomysium.
 - C muscle bundles.
 - D perimysium.

[15]

QUESTION 6

Complete the table below. Only write the question number and your answer in your Answer Book.

Blood cell	Scientific name	Function
Red blood cell	6.1 _____	6.2 _____
6.3 _____	Leukocyte	6.4 _____
Platelet	6.5 _____	Blood clotting

[5]

QUESTION 7

Complete the table below. Only write the question number and your answer in your Answer Book.

Vitamin	Source	Required for	Signs of deficiency
Vitamin D	7.1	Absorption, uptake and transport of calcium and phosphorous	7.2
7.3	Bacteria in hindgut	7.4	Loss of appetite, reduced growth
7.5	Carrots and natural herbage	Vision, growth, reproduction, tissue formation	7.6
Vitamin K	7.7	7.8	Deficiency is rare
7.9	Hindgut bacteria, green forage	Immune system, structure of skin and connective tissue	7.10

[10]

QUESTION 8

State whether for each of the phrases in Column I it applies to A only, B only, both A and B or neither in Column II. In your Answer Book write down the question number and then either A only, B only, both A and B or none as your answer.

Column I		Column II	
8.1	Production of carbon dioxide	A B	aerobic respiration anaerobic respiration
8.2	Essential component of red blood cells	A B	iron haemoglobin
8.3	'C'-shaped cartilaginous rings	A B	trachea bronchioles
8.4	Ciliated epithelium	A B	nasal cavity trachea
8.5	Detoxifies certain poisonous substances	A B	liver colon
8.6	Digestion of nutrients	A B	colon duodenum
8.7	Does not contain enzymes for the digestion of proteins	A B	pancreatic juice saliva
8.8	Blood leaving the kidneys contains more of this substance than blood entering the kidneys	A B	amino acids carbon dioxide
8.9	Responsible for osmoregulation in kidneys	A B	ADH sodium ions
8.10	Regulates the composition of blood	A B	kidneys hypothalamus

[10]

80 marks

SECTION B**QUESTION 9**

- 9.1 Draw a diagram to show the internal view of a horse's heart. (2)
- 9.2 Label your diagram. (10)
- 9.3 Show the passage of oxygenated blood on your diagram in dotted lines with arrows. (2)
- 9.4 Show the passage of de-oxygenated blood on your diagram in solid lines with arrows. (2)
- [16]**

QUESTION 10

- 10.1 One of the effects of global warming is an increase in the amount of clouds in the atmosphere. Discuss the impact this will have on the breeding season and fertility of mares and stallions, and how this will affect the horse industry as a whole. (10)
- 10.2 You are considering purchasing a stallion as a breeding prospect. Discuss what factors you would consider before investing in this venture. (8)
- [18]**

QUESTION 11

An endurance horse is suffering from laryngeal hemiplegia.

- 11.1 What symptoms would you observe? (2)
- 11.2 Explain why these symptoms occur. (4)
- 11.3 Buyers from Dubai are coming to view endurance horses in 2 months time with a view to exporting them for competition. Would you consider showing this horse to them, and what might you do beforehand? (2)
- [8]**

QUESTION 12

- 12.1 What causes muscle atrophy? (2)
- 12.2 If you were rehabilitating a horse with muscle atrophy would you attempt to build up the muscle again? Explain your answer. (4)
- 12.3 What is the most common type of muscle atrophy seen in polo ponies, and why is this so common amongst them? (2)
- [8]**

QUESTION 13

- 13.1 What conditions would predispose a horse towards suffering from stomach ulcers and in what yard environment would these conditions be found? (4)
- 13.2 Explain why the above conditions cause the formation of gastric ulcers in horses. (10)
- 13.3 Discuss the impact that a gastric ulcer has on a horse's physical appearance and performance. (6)
- [20]**

70 marks

SECTION C

A race horse races on the Saturday, rests on the Sunday and is taken out for a light training session on Monday. The horse is walked from the yard to the track, which is 5 minutes away, and then is put into a training canter. Shortly after being put into a canter the horse starts to shorten his stride and seems reluctant to move forward. The work rider pushes him on until the end of the canter stretch and walks him back to the yard. By the time the horse is back at the yard he is extremely reluctant to move forward, is sweating profusely and showing signs of anxiety.

Write an essay in which you discuss **in full** the condition that the horse is suffering from. In addition to the discussion include a suggested exercise programme for the horse from the day of the attack (day 1) to the return to full work (day 60) and suggest feeding guidelines with justification of each suggestion and a daily feeding programme to suit this horse (assume horse weighs 500 kg).

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

50 marks

Total: 200 marks