



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2010

EQUINE STUDIES

Time: 3 hours

200 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 10 pages.
 2. You are required to answer **all** the questions.
 3. All answers are to 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.
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SECTION A**QUESTION 1**

From the list of terms below, select the appropriate problem in performance and physical condition described in the questions that follow.

Exertional rhabdomyolysis, choke, orthopaedic developmental disease, gastric distension, pulmonary oedema, impaction colic, gastric ulcer, gas colic, step mouth, spasmodic colic, recurring obstructive pulmonary disease, laryngeal hemiplegia, kissing spine.

- 1.1 The condition when a horse has not passed any droppings for a longer time period than normal. (1)
 - 1.2 Swelling of lung tissue through increase of its fluid content. (1)
 - 1.3 Painful articulation of the dorsal processes of the lumbar vertebrae. (1)
 - 1.4 Damage to muscle tissue during exercise due to an increase of lactic acid following excess glycogen deposits after a period of inactivity with no diet change. (1)
 - 1.5 Narrowing of the airways often due to allergens. (1)
 - 1.6 Obstruction within the oesophagus. (1)
 - 1.7 Painful swelling of the stomach due to ingestion of excess food. (1)
 - 1.8 The condition that causes the horse to whistle or roar on intake of air. (1)
 - 1.9 Damage to the growing horse's bones due to incorrect diet. (1)
 - 1.10 The condition when a tooth is lost and the opposing tooth grows too long to accommodate comfortable chewing. (1)
- [10]**

QUESTION 2

The breed characteristics of the Lipizzaner make it ideally suited to high school dressage. Match the breed characteristic in column A with the ability in column B. Write down the question number from column A and the letter of your selection from column B.

Column A	Column B
2.1 Muscular neck	A Able to be schooled repetitively in the same technique
2.2 Willing temperament	B Able to deliver powerful thrust
2.3 Strong back	C Able to maintain the correct bend
2.4 Naturally supple	D Able to perform correct sequence of steps in a pace
2.5 Muscular hindquarters	E Able to elevate the forehand
	F Able to maintain correct rhythm
	G Able to stay in balance

[5]**QUESTION 3**

Draw and label a diagram of the horse's gastro intestinal tract.

2 marks will be awarded for the scale and accuracy of your diagram.

10 marks will be awarded for correct labelling of your diagram.

[12]

QUESTION 4

Select the most correct option from the possible answers listed below the question. Write down only the question number and the letter you have selected.

- 4.1 The appendicular skeleton is linked to the axial skeleton by
- A Skeletal joints
 - B Tendons and ligaments
 - C Tendons, ligaments and muscles
 - D Skeletal joints, tendons, ligaments and muscles
- 4.2 Joints do not contain the following
- A Synovial fluid
 - B Blood vessels
 - C Articular cartilage
 - D Ligaments
- 4.3 The respiratory system contains cilia
- A Throughout
 - B In the trachea
 - C In the trachea, bronchus, bronchioles and alveolar ducts
 - D In the trachea and bronchus
- 4.4 In the alveolus the following gases will be found after inspiration
- A High carbon dioxide, low oxygen
 - B High oxygen, low carbon dioxide
 - C Equal amounts of oxygen and carbon dioxide
 - D High oxygen, high carbon dioxide
- 4.5 The cardiovascular system consists of
- A The heart, blood and blood vessels
 - B The heart
 - C The heart, blood, blood vessels and lungs
 - D The heart and lungs
- 4.6 The right side of the heart
- A Pumps blood to the body
 - B Has thicker walls than the left side
 - C Pumps blood to the lungs
 - D Discharges into the aorta
- 4.7 Urinary tract problems are not indicated by
- A Frequent urination of small volumes
 - B Interrupted stream of urine
 - C Straining to urinate
 - D Strong smelling urine

4.8 Urine is produced by the

- A Bladder
- B Kidneys
- C Liver
- D Spleen

[8]

QUESTION 5

For each of the parts of the horse listed below, name an ailment that will affect performance and physical condition.

- 5.1 Skin
- 5.2 Heart
- 5.3 Lungs
- 5.4 Hoof
- 5.5 Cannon bone
- 5.6 Kidneys
- 5.7 Brain
- 5.8 Caecum
- 5.9 Teeth
- 5.10 Ears
- 5.11 Anus
- 5.12 Large intestine
- 5.13 Sacrum
- 5.14 Muscle
- 5.15 Tendon

[15]

QUESTION 6

Identify and correct the errors in the following statements. In your answer rewrite the statement with the correction.

- 6.1 In the product name 'Alzu 12% Maize-free Meal', the 12% refers to energy content of the feed.
- 6.2 A race horse does best on a 12% feed ration.
- 6.3 A riding school pony needs a high protein diet.
- 6.4 An endurance horse does not need special attention paid to his feed intake prior to a competition.
- 6.5 An Olympic level show-jumper does best on a low quality hay such as meadow mix.
- 6.6 A medium level dressage horse needs a higher feed intake than a medium level eventer.
- 6.7 Before a competition an eventer's feed intake can be reduced if he is highly strung.
- 6.8 A hack would benefit from a high simple carbohydrate diet compared to a high fat diet.
- 6.9 A horse with a high concentrate feed intake should receive 2 feeds per day.
- 6.10 A top western competition horse needs to be worked 3 times a week.

[10]**QUESTION 7**

- 7.1 Give the site of absorption of the following nutrients:
 - 7.1.1 Water
 - 7.1.2 Glucose
 - 7.1.3 Complex carbohydrates
 - 7.1.4 Protein
 - 7.1.5 Fats
- 7.2 Give one nutrient **not found in question 7.1** that is absorbed at the following sites. If none is absorbed, state **none**.
 - 7.2.1 Mouth
 - 7.2.2 Stomach
 - 7.2.3 Ileum
 - 7.2.4 Large colon
 - 7.2.5 Caecum

(5)**(5)**
[10]

QUESTION 8

State whether the following sentences are **true** or **false**.

- 8.1 Anthelmintics are broad spectrum antibiotics.
- 8.2 A puncture wound needs to be treated with care even though there is little skin damage.
- 8.3 Colicing horses can be observed for 2 hours before the vet is called.
- 8.4 An intra-articular injection is done into the artery.
- 8.5 A lacerated wound should be stitched.
- 8.6 Horses are vaccinated for Equine Influenza twice a year.
- 8.7 Vaccinating for Strangles is not compulsory by the sports regulating bodies.
- 8.8 The African Horse Sickness annual vaccine consists of two doses.
- 8.9 A flexion test is performed to determine the suppleness of the horse.
- 8.10 An ultrasound exam is used to determine bone fractures.

[10]

80 marks

SECTION B**QUESTION 9**

A horse is rescued from starvation.

- 9.1 Explain why a horse being rehabilitated from starvation does not initially digest grass effectively, and suggest a way of overcoming this problem. (5)
- 9.2 Explain how you would feed this horse in the first two months of its rehabilitation. (5)
- 9.3 After two months the horse starts light work three times a week. Describe how you would adjust its feeding program and feed in order to cope with its change in condition and exercise levels. (5)
- 9.4 After three months the mare shows increasing energy levels and exercise tolerance and her work is increased to a moderate level, five times a week. Compare the feeding she would need during this phase to the feeding she received when exercising lightly three times a week. (5)

[20]

QUESTION 10

A healthy horse is moved from a breeding farm in which it lived on pasture to a stable yard where it is in his stable for most of the day and night to begin its sporting career. Once in the yard it develops a chronic cough and there is mucus discharge from its nose. However the horse does not have an elevated temperature.

- 10.1 What condition is this horse suffering from? (1)
- 10.2 Summarise the causes of this condition. (4)
- 10.3 Explain why this horse did not show any signs of this condition on the breeding farm. (4)
- 10.4 Produce a plan in order to manage this condition. (6)

[15]

QUESTION 11

A horse has to have a colic operation. After the operation the owner manages the horse in the following way:

Nutrition: High quality grass offered in small amounts at frequent intervals.
Concentrates are fed in the same amount as prior to the operation.
Free access to water at all times.
Regular dental care.

Exercise: Horse turned out into paddock one week after the operation.
Light ridden work to commence 1 month after the operation.

- 11.1 Identify the errors in the management of this horse, and for each error state what should have been done. (6)
- 11.2 Give five symptoms you might observe in a horse after a colic operation that would indicate that the vet needed to be called. (5)
- 11.3 A colic operation is an expensive surgery that has no guarantee of success. If a horse you owned needed a colic operation, discuss whether you would go ahead with the operation or not, and what your decision would be based on. (5)
- [16]**

QUESTION 12

The jumbled phrases below describe the way in which a bone chip of a show jumper would be identified and corrected.

Period of light work; Identification of bone chip; Horse starts refusing jumps; X-ray performed on area causing lameness to determine the cause of the pain; Horse showing lameness after jumping and hard work; Return to normal work; Nerve block performed at the clinic to isolate the area causing the lameness; Arthroscopy performed to remove the bone chip; Lameness diagnosis by vet at the stable yard.

- 12.1 Organise these steps into a flow diagram that describes the correct procedure of identification and correction of a bone chip. (9)
- 12.2 Generalise the reasons why bone chips form. (4)
- [13]**

QUESTION 13

Below is a list of six skin conditions:

Sarcoid; mange; mud fever; melanoma; chronic ringworm; urticaria.

Draw up a table in which you sort the skin conditions below into two groups:

1. Conditions that can be treated through correct management and use of products available at the shops.
2. Conditions that need to be treated by a vet or by vet prescribed products.

[6]

70 marks

SECTION C

A breeder wants to produce a Thoroughbred foal with the hopes that it will be able to compete successfully in official races. Develop suitable criteria on which this breeder could base their selection of the mare and stallion that would produce such a foal, and then recommend a breeding method that could be used in order to produce a registered Thoroughbred foal. Justify your recommendation. Construct the steps that would occur in this breeding procedure and summarise the path a sperm would take from its origin in the stallion to its final destination in the mare.

(45)

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

(5)

50 marks

Total: 200 marks