



NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2015

EQUINE STUDIES

Time: 3 hours

200 marks

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 to present your work neatly.
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SECTION A**QUESTION 1**

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

- 1.1 A horse in medium work should eat 30% concentrates and 70% roughage.
- 1.2 The percentage protein stated on the label of a bag of food is important to note as protein is used as a source of energy in the horse.
- 1.3 Horses cannot breathe through their mouths.
- 1.4 Wobbler disease is a condition of the spinal cord caused by malformed cervical vertebrae.
- 1.5 The strangles vaccination is given I/M.
- 1.6 Deworming drugs are also known as anthelmintic drugs.
- 1.7 The small intestine digests and absorbs protein, simple carbohydrates and fats.
- 1.8 The pancreas produces insulin to lower the blood sugar after a meal.
- 1.9 Bile helps digest protein in the small intestine.
- 1.10 Vitamin A is important for eyesight in the horse.

[10]

QUESTION 2

Select the correct answer in the multiple-choice questions below.

- 2.1 Which one of the following conditions is a contagious disease amongst horses?
 - A Thrush
 - B Ringworm
 - C Stringhalt
 - D Windsucking
- 2.2 Which of the following conditions is most likely to occur if a horse at peak fitness does **not** have its feed reduced on a day off?
 - A Exertional Rhabdomyolysis
 - B Laminitis
 - C Hoof abscess
 - D Navicular disease
- 2.3 The central nervous system of a horse is made up of
 - A Motor neurons
 - B Sensory neurons
 - C Endocrine chemicals
 - D The spinal column and brain

- 2.4 The shoulder joint of a horse is an example of a
- A Hinge joint
 - B Fibrous joint
 - C Cartilaginous joint
 - D Ball and socket joint
- 2.5 If you lead a horse through a very narrow doorway, the horse is most likely to damage
- A Its guttural pouch
 - B Its second metacarpal bones
 - C Its wing of the ilium
 - D Its dorsal spinous process
- 2.6 The spleen contains
- A Growth stimulants
 - B Clusters of white blood cells and red blood cells
 - C Stored digestive enzymes
 - D Hormones such as adrenalin
- 2.7 Semen is produced within the tubules in the testicle. Where is the semen then stored?
- A The ureters
 - B Vas deferens
 - C Seminiferous tubules
 - D The epididymis
- 2.8 Which one of the following is **not** part of the respiratory system?
- A Alveolus
 - B Bronchioles
 - C Carpus
 - D Pharynx
- 2.9 Which statement about the horse's digestive tract is true?
- A The stomach has a larger capacity than the caecum
 - B The oesophagus is where grain digestion takes place
 - C The large intestine is primarily where grain digestion takes place
 - D The mouth contains salivary glands that moisten food so that the horse can swallow it
- 2.10 The nuchal ligament is elastic to allow flexion of the
- A Carpus
 - B Cervical vertebrae
 - C Ilium
 - D Coccygeal vertebrae

- 2.11 When you tie up a horse, which knot should be used?
- A Reef knot
 - B Quick-release knot
 - C Bowline knot
 - D Figure-of-eight knot
- 2.12 Damage to the scapular cartilage can occur when
- A The horse pulls back
 - B Spurs are overused
 - C A saddle is incorrectly fitted
 - D A bandage is applied too tightly
- 2.13 Tetanus can result from
- A A nail prick
 - B Deep wounds
 - C Deep bruising
 - D All of the above
- 2.14 The wolf teeth are also known as
- A Molars
 - B Canines
 - C Bridle teeth
 - D Corner incisors
- 2.15 Which of these colour descriptions is an alternative to buckskin?
- A Dun
 - B Roan
 - C Cremello
 - D Palomino

[15]

QUESTION 3

3.1 Label the following diagram of the bones of the lower leg.



[Source: <http://en.wikipedia.org/wiki/Limbs_of_the_horse>]

(7)

3.2 Name one condition of bone that can occur with each of these bones.

(7)

3.3 Name the ligament that runs from the bones labelled 3.1.1 to 3.1.3.

(1)

3.4 Name the tendon that attaches to the extensor process of the bone labelled 3.1.4.

(1)

3.5 Name the tendon that attaches to the palmer surface of the bone labelled 3.1.4.

(1)

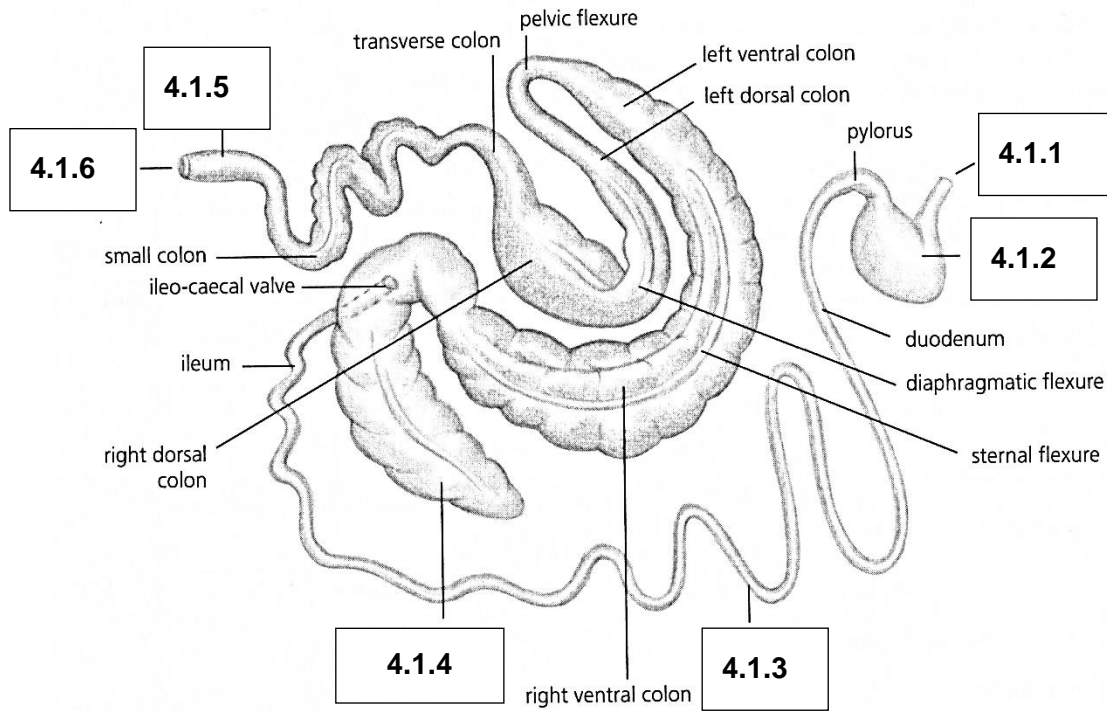
3.6 Name the tendon that attaches to the palmer surface of the bone labelled 3.1.5.

(1)

[18]

QUESTION 4

4.1 Label the following digestive system of the horse.



[P Stewart Hastie MRCVS, *The BHS veterinary manual*, p. 84]

- 4.2 Looking at the flexures or bends in the large intestine (sternal, diaphragmatic and pelvic), where would you expect impaction colic to occur? (6)
- 4.3 Why do you think impaction of food would occur here more than at the other flexures? (1)
- 4.4 Which worm is usually found attached at the ileo-caecal valve? (1)
- 4.5 Using the diagram above, determine on which side of the horse 4.1.4 is positioned. (1)

[10]

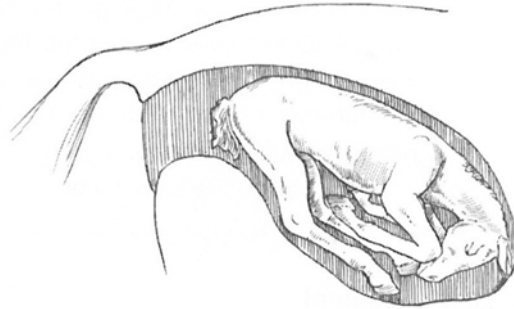
QUESTION 5

Give the term used for the description below:

- 5.1 The cycle of the heart when the muscle is contracted and the heart is pushing blood through the arteries.
- 5.2 The process whereby the stallion is used to check if the mare is in season.
- 5.3 The metal block that farriers use to shape horse shoes on.
- 5.4 The tube that connects the kidney to the bladder.
- 5.5 The palatable hay that is leafy, green, and high in calcium and protein, but if the quality is poor it may have purple flowers in it.

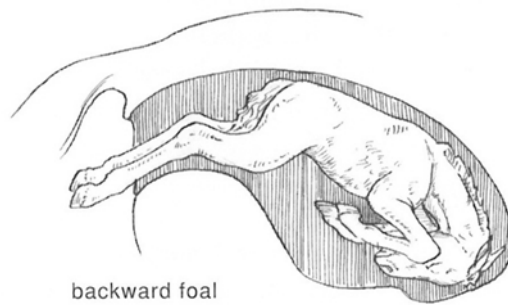
[5]

QUESTION 6



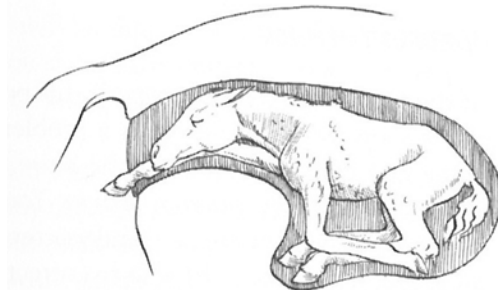
6.1 What is the name of this dystocia position above? (1)

6.2 Look at the picture below, describe what a major concern with this birth would be and why.



(3)

6.3 Describe the following dystocia position and how it could be corrected.



[Melanie Bailey, *Equine Stud Management: A Textbook for Students*. ISBN 0-85131-836-3]

(4)
[8]

QUESTION 7

Name the following muscles:

- 7.1 The muscle that lies cranial to the spine of the Scapula. (1)
- 7.2 The muscle that lies underneath the Trapezius muscle. This muscle runs cranially and caudally from the medial side of the Scapular Cartilage. (1)
- 7.3 The main muscle that flexes the elbow joint and extends the shoulder joint. (1)
- 7.4 The muscle that carries most of the rider's weight. (1)
- 7.5 The muscle that lies in the skin and contracts as a twitch to stop flies from settling on a horse's coat. (1)
- [5]**

QUESTION 8

What is fascia? [4]

QUESTION 9

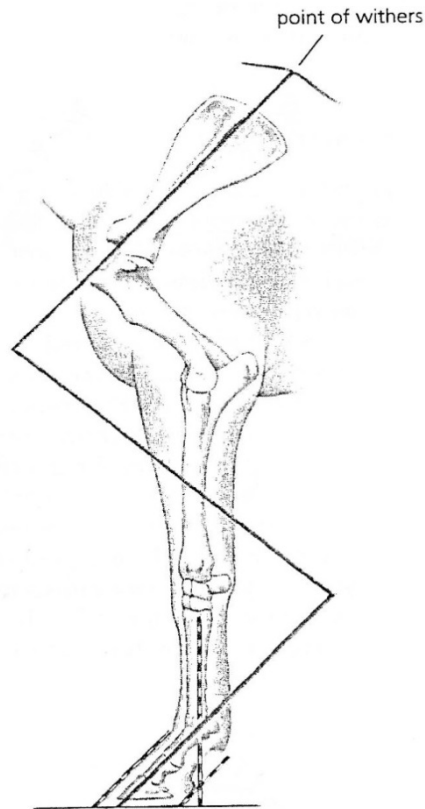
When travelling long distances with (boxing) horses, nutrition is important. Discuss all parameters and procedures that should be followed with feeding and watering when travelling with the horse. [5]

80 marks

SECTION B

QUESTION 10

The following diagram of the forelimb of the horse with the lines drawn on it is often a feature in conformation books. What desirable features is this drawing showing us?



[P. Stewart Hastie MRCVS, *The BHS veterinary manual.*]

[4]

QUESTION 11

Recurrent Exertional Rhabdomyolysis is often seen in young highly strung fillies. There seems to be a genetic component to the disease, but the way you feed the horse may help alleviate symptoms.

Discuss how you would feed a horse suffering from this condition.

[4]

QUESTION 12

12.1 What is the lymphatic system?

(2)

12.2 Compare haemoglobin and myoglobin.

(4)

[6]

QUESTION 13

Compare colostrum to normal mare's milk with regards to appearance and the nutrients in it.

[4]

QUESTION 14

What are the signs of chronic renal failure in the horse? [4]

QUESTION 15

Discuss the syndrome that affects the nervous system called wobblers disease. [6]

QUESTION 16

Explain what Miller's disease is. [5]

QUESTION 17

Give your opinion of a shod horse versus the barefoot horse. [5]

QUESTION 18

18.1 Explain how heart rate is used to determine the fitness of a horse, give a practical application of this, and name a competition discipline that would use this method. (5)

18.2 Which blood vessel is normally used to inject drugs into the blood stream? (1)

18.3 Would you think it is easier to inject into an artery or vein? Justify your answer by using your knowledge of the structure of arteries and veins. (4)

[10]

QUESTION 19

Explain what is meant by the terminology 'Essential and non-essential amino acids'. [4]

QUESTION 20

90% of colics respond favourably to medical treatment within the first hour. Horses that continue to show pain and discomfort may need surgery to fix the colic.

20.1 List four (4) signs the horse may show when it is in pain. (4)

20.2 Elaborate on the post-operative care required for a horse that has undergone surgery for colic. (4)

[8]

QUESTION 21

Briefly outline the digestion and absorption of carbohydrates (simple and complex) in the horse and what happens if too much starch is fed at each meal. [10]

70 marks

SECTION C**QUESTION 22**

A new horse is brought into your yard. He has come from living out during the day and night and now with you, he is stabled on straw at night. The stables have a barn type layout with the hay stored above the stables. The stable where this horse is kept looks out onto the sand arena.

The horse has started coughing repeatedly, more so with exercise, but otherwise his temperature is normal and he is still eating well. None of the other horses in the yard have started coughing, which rules out a viral or bacterial condition.

Write an essay which must include the following:

- All causes and preventions of the condition
- Any relevant anatomy with correct terminology
- Any special diet or feeding preferences

Marks will be awarded as follows:

Health care	25
Anatomy	5
Nutrition	10
Writing skills	10

50 marks

Total: 200 marks