



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2019

Medicine of Horses

Paper 1

Perusal time: **Fifteen (15)** minutes

Time allowed: **Two (2)** hours after perusal

Answer **ALL FOUR (4)** questions

Answer **FOUR** questions, each worth 30 marks total 120 marks

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Paper 1: Medicine of Horses

Answer all four (4) questions

1. Compare and contrast sepsis-related laminitis with endocrinopathic laminitis. In your answer, address **both** of the following:
 - a) aetiopathogenesis (15 marks)
 - b) principles of treatment. (15 marks)

2. For **each** of the following diagnostic procedures:
 - outline the advantages and limitations; and
 - state a clinical situation in which the diagnostic procedure would be indicated and explain why.
 - a) percutaneous transtracheal wash (10 marks)
 - b) bronchoalveolar lavage (10 marks)
 - c) thoracic ultrasonography. (10 marks)

3. Briefly discuss the aetiopathogenesis and preventative strategies for each of the following:
 - a) tetanus (10 marks)
 - b) recurrent exertional rhabdomyolysis (10 marks)
 - c) synchronous diaphragmatic flutter. (10 marks)

Continued over page

4. For each of the following therapies, outline the mechanism of action, clinical indication for use and potential side effects:
- a) rifampicin (*10 marks*)
 - b) prednisolone (*10 marks*)
 - c) fresh, frozen plasma. (*10 marks*)

End of paper



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Answer **ALL FOUR (4)** questions

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Paper 2: Medicine of Horses

Answer all four (4) questions

1. A 15-year-old Thoroughbred mare foaled without apparent difficulty 12 hours ago. The mare has been showing signs of abdominal pain for the last two hours. During this time, she has been recumbent and occasionally rolling. When standing, she paws the ground and patchy sweating is evident.

Answer **all** parts of this question:

- a) List the potential causes of abdominal pain in this mare. *(5 marks)*

- b) Describe an appropriate clinical investigation for this mare, including any ancillary clinical pathology and diagnostic procedures. In your answer, state how the results obtained would assist in reaching a diagnosis. Assume that you have access to a well-equipped clinic without financial constraints. *(15 marks)*

- c) Select **two (2)** potential causes from your differential diagnoses in part 1a) that would be considered critical emergencies for this mare. For each, outline the expected clinical findings. *(10 marks)*

Continued over page

2. Answer **both** parts of this question:

a) For **both** of the following cardiac murmurs:

- provide **two (2)** differential diagnoses
- indicate which differential diagnosis is most likely and explain why; and
- comment on the likely significance of the murmur:

i. grade 3/6 left-sided systolic murmur in a two-day-old Standardbred
(7.5 marks)

ii. grade 4/6 right-sided systolic murmur in a Thoroughbred yearling.
(7.5 marks)

b) Analyse the electrocardiogram (ECG) trace below and answer **both** of the following:

i. Describe the key features of this ECG and state the diagnosis.
(5 marks)

ii. Name **one (1)** drug used to treat this condition and describe a protocol for its use. Include in your answer the potential side effects of treatment. (10 marks)



Continued over page

3. You are called to examine a 15-year-old Thoroughbred gelding that has been reported by the owner to be passing dark, red-brown coloured urine.

Answer **both** parts of this question:

- a) Outline the possible causes of the discoloured urine in this horse and describe how to differentiate between these using the results of haematology, biochemistry and urinalysis. *(15 marks)*

Assume no abnormalities are identified on haematology and biochemistry analyses:

- b) Outline a prioritised differential list and describe an appropriate further diagnostic approach for this case. Assume that you have access to a well-equipped clinic and no financial constraints. *(15 marks)*

4. A six-year-old miniature pony gelding is presented for examination after failing to eat his morning feed. The pony has a heart rate of 60 beats/minute, a respiratory rate of 12 breaths/minute and a rectal temperature of 39.3°C. He has not passed faeces in his stable overnight.

Answer **both** parts of this question:

- a) Provide an interpretation of the haematology and biochemistry results, as shown on the following page. *(15 marks)*

Question 4 continued over page

| Parameter | Result | Normal range | Unit |
|------------------|---------------|---------------------|---------------------|
| Red cell count | 8.4 | 5.5–9.5 | 10 ¹² /L |
| Haemoglobin | 136 | 80–140 | g/L |
| Haematocrit | 0.36 | 0.25–0.45 | L/L |
| White cell count | 13.5 | 5.0–10.8 | 10 ⁹ /L |
| Neutrophils | 9.7 | 2.5–6.5 | 10 ⁹ /L |
| Band forms | 0.1 | 0–0.1 | 10 ⁹ /L |
| Lymphocytes | 2.0 | 1.2–5.0 | 10 ⁹ /L |
| Monocytes | 1.6 | 0.1–0.8 | 10 ⁹ /L |
| Eosinophils | 0.1 | 0–0.5 | 10 ⁹ /L |
| Basophils | 0 | 0–0.2 | 10 ⁹ /L |
| Fibrinogen | 3.5 | 1.2–2.4 | g/L |
| Sodium | 135 | 134–144 | mmol/L |
| Potassium | 2.9 | 2.7–5.1 | mmol/L |
| Chloride | 95 | 95–105 | mmol/L |
| Phosphate | 1.1 | 0.7–1.8 | mmol/L |
| Total bilirubin | 75 | <50 | μmol/L |
| AST | 195 | 150–400 | U/L |
| CK | 256 | 50–400 | U/L |
| ALP | 167 | 91–250 | U/L |
| Total protein | 70 | 54–78 | g/L |
| Albumin | 22 | 26–38 | g/L |
| Globulins | 48 | 28–40 | g/L |
| GGT | 35 | 6–45 | U/L |
| GLDH | 12 | <21 | U/L |
| Triglycerides | 3.5 | 0.7–1.6 | mmol/L |
| Urea | 12.0 | 2.5–7.4 | mmol/L |
| Creatinine | 180 | 90–160 | μmol/L |
| Calcium | 2.9 | 2.7–3.3 | mmol/L |
| Magnesium | 0.8 | 0.7–1.0 | mmol/L |

Question 4 continued over page

Abdominocentesis retrieved a turbid yellow fluid. The results of peritoneal fluid analysis are shown below:

| Parameter | Result | Reference range | Units |
|----------------------------|---------------|------------------------|-----------------|
| Total nucleated cell count | 200 | <5 | $\times 10^9/L$ |
| Total protein | 45 | <25 | g/L |

Comments: The cell population consists of 95% non-degenerate neutrophils, with several noted to contain intracytoplasmic bacteria.

- b) State the diagnosis, including the most likely aetiological agent, and describe an appropriate treatment/management plan for this pony. (15 marks)

End of paper