



Australian College of Veterinary Scientists  
**Fellowship Examination**

June 2011

**Equine Medicine**

**Paper 1**

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**

All six main questions are of equal value

Answer **FOUR** questions each worth 25 marks .....total 100 marks

# Paper 1: Equine Medicine

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Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**.

1. Myelocephalopathy is a devastating but fortunately uncommon manifestation of equine herpesvirus-1 (EHV-1) infection. Answer **all** subparts of this question:
  - a) Describe the signalment, history and clinical symptoms of EHV-1 myeloencephalopathy in horses. (5 marks)
  - b) Discuss and justify your diagnostic plan to establish an antemortem diagnosis of EHV-1 myelocephalopathy in horses. Include in your answer limitations of the diagnostic tests chosen and assume you have advanced laboratory support at your disposal. (13 marks)
  - c) Discuss the biosecurity measures that need to be instituted in the event of a diagnosis of EHV-1 myelocephalopathy in horses. (7 marks)
  
2. Discuss the similarities and differences between polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER) in horses. Include in your answer a discussion of aetiopathogenesis, clinical signs, diagnosis and management. (25 marks)
  
3. There are a number of systemic diseases that exhibit cutaneous signs. Discuss the pathophysiology, common signalment, clinical findings and diagnosis of **each** of the following diseases or syndromes in horses:
  - a) photosensitisation syndrome (9 marks)
  - b) lethal white foal syndrome of paint horses (8 marks)
  - c) multicentric eosinophilic epitheliotrophic disease. (8 marks)
  
4. Describe in detail the immunopathogenesis of the **four (4)** types of classical hypersensitivity reactions. For **each** type provide a clinical example that occurs in horses and outline how you would manage such a case. (25 marks)
  
5. Answer **all** subparts of this question:
  - a) Hypoxaemia is generally defined as the decreased partial pressure of oxygen in the blood. Discuss in detail the pathophysiologic mechanisms by which hypoxaemia occurs, giving in **each** case a clinical example that occurs in horses. (15 marks)
  - b) Describe your approach to the evaluation and treatment of an adult horse in respiratory distress. (10 marks)

**Examination continued on next page**

6. Answer **all** subparts of this question:
- a) Explain in detail, using clinical examples, the causes and pathophysiology of hyperammonaemia in the horse. *(10 marks)*
  - b) Discuss the effects of ammonia on the nervous system and describe the clinical signs. *(7 marks)*
  - c) Discuss the management of hepatic encephalopathy in the horse. *(8 marks)*

**End of paper**



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**Paper 2**

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**

All six main questions are of equal value

Answer **FOUR** questions each worth 25 marks .....total 100 marks

# Paper 2: Equine Medicine

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Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**.

1. You are asked to examine a yearling thoroughbred colt bred in Australia with acute onset of ataxia. Answer **all** subparts of this question:
  - a) List possible differential diagnoses, in order of likelihood. *(3 marks)*
  - b) For **each** of these diagnoses, discuss and justify the further diagnostic tests you would choose. *(10 marks)*
  - c) Discuss in detail the treatment of acute central nervous system trauma in the horse. *(12 marks)*
  
2. In order to accurately interpret results of diagnostic tests, the clinician must have a good understanding of the sensitivity and specificity of the test chosen.  
  
Discuss how **each** of the following tests will assist in the diagnosis of the relevant disease, and discuss factors that may affect sensitivity and specificity of that test:
  - a) endogenous adrenocorticotrophin (ACTH), and pituitary pars intermedia dysfunction (PPID) *(7 marks)*
  - b) troponin, and myocarditis *(6 marks)*
  - c) post exercise endoscopy, and exercise-induced pulmonary haemorrhage (EIPH) *(6 marks)*
  - d) fasting insulin, and equine metabolic syndrome (EMS). *(6 marks)*
  
3. Discuss the aetiopathogenesis, clinical manifestations and management of toxicoses in the horse due to **each** of the following agents:
  - a) pyrrolizidine alkaloids *(7 marks)*
  - b) oleander *(6 marks)*
  - c) ionophores *(6 marks)*
  - d) corynetoxin. *(6 marks)*

**Examination continued over page**

4. A three-day-old thoroughbred colt is presented dull and 'off the suck' (inappetent). His birth was assisted, but he has seemed normal until today. Haematological and blood biochemical results are presented below.

Haematology	Result	Normal EQ/TB foal
PCV L/L	0.48	0.28 - 0.46
Total WBC x 10 <sup>9</sup> /L	5.5	5.2 - 12.0
Band neutrophils x 10 <sup>9</sup> /L	0.1	0 - 0.40
Neutrophils x 10 <sup>9</sup> /L	3.4	3.21 - 10.60
Lymphocytes x 10 <sup>9</sup> /L	1.5	0.67 - 3.12
Monocytes x 10 <sup>9</sup> /L	0	0.03 - 0.58
Eosinophils x 10 <sup>9</sup> /L	0.5	0 - 0.20
Basophils x 10 <sup>9</sup> /L	0	0 - 1.18

Biochemistry	Result	Normal EQ/TB foal
Sodium mmol/L	124	131 - 140
Chloride mmol/L	82	86 - 95
Potassium mmol/L	6.9	3.3 - 4.4
Bicarbonate mmol/L	32	27 - 32
Lactate mmol/L	6.6	< 2
Urea mmol/L	17.6	2.5 - 9.3
Creatinine umol/L	254	70 - 200
Creatinine kinase U/L	400	< 450
Aspartate transaminase U/L	640	< 214
Serum protein g/L	50	50 - 70
Serum albumin g/L	25	28 - 34
Serum globulins g/L	25	13 - 37
Fibrinogen g/L	5	2 - 4

Answer **all** subparts of this question:

- List possible diagnoses and explain how the presented clinicopathologic information supports these diagnostic considerations. (5 marks)
- Describe in detail the further information including the diagnostic tests you would require to support these possible diagnoses. (10 marks)
- Select your **most likely diagnosis** and describe in detail how you would manage this case. (10 marks)

**Examination continued over page**

5. A two-year-old thoroughbred filly in work is referred for assessment and treatment of acute diarrhoea. She was normal the night before but was found in her stable with colic first thing in the morning. She has dark purple mucous membranes with a capillary refill time of six seconds. Her pulse is non-palpable and her heart rate is 120 bpm. Answer **all** subparts of this question:
- Describe how you would evaluate and treat this case in the first hour following admission. *(5 marks)*
  - Describe in detail how you would assess the filly's response to treatment and how you would modify treatment according to your findings. *(10 marks)*
  - List possible complications of acute colitis in the horse and describe how **each** can be minimised. *(10 marks)*
6. Provision of pain relief is an important aspect of equine medicine. For **each** of the following clinical situations, describe in detail your approach to pain management; include in your answer the method(s) of administration of any drugs you would use, and possible adverse effects:
- warmblood broodmare with post-metritis laminitis *(8 marks)*
  - two-year-old thoroughbred racehorse following internal fixation of a comminuted metatarsal fracture *(8 marks)*
  - yearling thoroughbred colt following jejunal resection and anastomosis. *(9 marks)*

**End of paper**