



Australian College of Veterinary Scientists
Fellowship Examination

June 2011

Small Animal Medicine

Paper 1

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

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

Answer your choice of any **FIVE** (5) questions from the six questions **ONLY**

In some questions you must choose which subparts to answer

All six main questions are of equal value

Answer **FIVE** questions each worth 25 marks.....total 125 marks

Paper 1: Small Animal Medicine

Answer your choice of any **FIVE** (5) questions from the six questions **ONLY**.

1. Describe in detail **each** of the following:
 - a) glucose homeostasis (15 marks)
 - b) the pathogenesis of biochemical alterations associated with diabetic ketoacidosis. (10 marks)

2. Answer **all** subparts of this question:
 - a) Describe the normal movement of fluid across pulmonary membranes. (6¼ marks)
 - b) Discuss the causes and the pathogenesis of acute respiratory distress syndrome (ARDS), with particular reference to the mechanisms that result in pulmonary oedema. (18¾ marks)

3. Answer **all** subparts of this question:
 - a) Describe the pathogenesis of glomerulonephropathies in the dog and cat. (15 marks)
 - b) Outline the clinical syndromes and laboratory findings associated with glomerulonephropathies in the dog and cat. (10 marks)

4. Discuss the aetiopathogenesis of **two** (2) of the following conditions: (12½ marks each)
 - a) diastolic heart failure
 - b) arrhythmogenic right ventricular cardiomyopathy
 - c) torsade de pointes.

5. Describe the pathophysiological mechanisms underlying the following paraneoplastic syndromes, including the mechanisms that result in the typical presenting clinical signs of **three** (3) of the following: (8½ marks each)
 - a) cancer cachexia
 - b) paraneoplastic skin diseases
 - c) hyperviscosity syndrome associated with multiple myeloma
 - d) hypercalcaemia.

Examination continued over page

6. Describe in detail the components of the normal gastric mucosal barrier. *(10 marks)*
Discuss how this barrier can be disrupted resulting in gastric ulceration, and include in your answer the specific causes of gastric ulcers in dogs and cats. *(15 marks)*

End of paper



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Paper 2

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Answer your choice of any **FIVE** (5) questions from the six questions **ONLY**

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Answer **FIVE** questions each worth 25 marks total 125 marks

Paper 2: Small Animal Medicine

Answer your choice of any **FIVE** (5) questions from the six questions **ONLY**.

1. Outline the clinical signs, differential diagnoses, diagnostic investigations and abnormal laboratory findings associated with myopathies in dogs and cats. *(25 marks)*

2. Describe the mechanism of action, efficacy, indications and potential adverse effects of **four (4)** of the following immunosuppressive agents: *(6¼ marks each)*
 - a) prednisolone
 - b) cyclophosphamide
 - c) azathioprine
 - d) cyclosporin
 - e) thalidomide.

3. Describe your diagnostic approach; including listing the differential diagnoses, diagnostic investigations and potential findings; and initial management of an elderly, recumbent golden retriever with a sudden onset of a head tilt. *(25 marks)*

4. Discuss your approach to a dog with markedly elevated haematocrit (packed cell volume over 70%). Include in your answer:
 - a) important differential diagnoses *(5 marks)*
 - b) pathophysiological mechanisms leading to an elevated haematocrit *(7½ marks)*
 - c) approach to diagnostic testing *(7½ marks)*
 - d) treatment options. *(5 marks)*

5. Answer **both** subparts of this question:
 - a) Discuss the pathophysiology of hepatic encephalopathy. *(10 marks)*
 - b) Describe your diagnostic approach *(7½ marks)* and medical management *(7½ marks)* of hepatic encephalopathy in the dog and cat.

Examination continued on next page

6. Answer **all** subparts of this question

a) Answer **TRUE** or **FALSE** (*½ mark each*)

- i. Tetanus is an intoxication.
- ii. Tetanus is caused by the elaboration of an exo-toxin under highly reduced or anaerobic conditions.
- iii. The causal organism of tetanus is a stout gram-negative rod.
- iv. The tetanus toxin enters the nervous system, in part by retrograde axonal transport.
- v. The tetanus toxin enters the brain, in part by spread of toxin to areas where the blood brain barrier is weak.
- vi. *In vitro*, the tetanus toxin, tetanospasmin decreases release of acetylcholine at the neuromuscular junction.
- vii. *In vivo*, tetanospasmin decreases the release of GABA and glycine from inhibitory nerve terminals in the spinal cord and brainstem.
- viii. Tetanus can cause hiatal hernia in the dog.
- ix. In cats, local tetanus is more common than generalised tetanus based on reports in the literature.
- x. Tetanus toxoid is useful in the management of generalised tetanus.
- xi. Tetanus can be prevented by a course of two injections of tetanus anti-toxin.
- xii. Tetanus can cause sympathetic overactivity and hypertension.

b) Answer **all** subparts of this question (*2 marks each*)

- i. List the classical cranial nerve signs of tetanus.
- ii. Define the term used to describe the posture adopted by animals with severe generalised tetanus.
- iii. Briefly explain the circumstances in which localised tetanus occurs.
- iv. Briefly explain how botulism differs from tetanus.

c) Discuss the management of a dog with severe generalised tetanus. (*11 marks*)

End of paper