



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2012

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**

All questions are of equal value

Answer **FIVE** questions each worth 20 markstotal 100 marks

Paper 1: Small Animal Medicine

Answer five (5) from the six questions only.

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

- a) Discuss in detail, the role of iodine in normal function of the thyroid system. *(10 marks)*
- b) For the treatment of feline hyperthyroidism, briefly discuss the mechanisms of action for the following therapies:
 - i. radioactive iodine *(5 marks)*
 - ii. dietary iodine restriction. *(5 marks)*

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

- a) Describe in detail, the metabolism of copper with particular reference to the role of the liver in copper homeostasis in dogs. *(8 marks)*
- b) Discuss the pathogenesis and histological characteristics of copper accumulation associated with hepatitis. *(8 marks)*
- c) Describe the methods available and the parameters that are used to make a diagnosis of copper-associated liver disease. *(4 marks)*

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3. Discuss the mechanisms of action, indication for use, metabolism, contraindications and adverse effects for **four (4)** of the following drugs: *(5 marks each)*
- a) azithromycin
 - b) mycophenolate mofetil
 - c) toceranib phosphate
 - d) maropitant
 - e) dopamine
 - f) fluconazole.
4. Answer **all** subparts of this question.
- a) Describe the pleural cavity of the normal dog and cat. Include in your answer:
 - i. function *(1 mark)*
 - ii. microscopic and macroscopic anatomy *(3 marks)*
 - iii. composition of pleural fluid *(1 mark)*
 - iv. formation of fluid *(1 mark)*
 - v. removal of fluid and debris. *(2 marks)*
 - b) Describe the pathogenesis of pleural effusion. *(6 marks)*
 - c) Define the diagnostic criteria for the various categories of pleural effusion. *(6 marks)*

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

- a) Briefly outline the processes that occur in the nephron to create urine. *(4 marks)*

- b) Describe in detail, the action of L-vasopressin (anti-diuretic hormone) on the cells of the renal collecting ducts. *(6 marks)*

- c) Outline the aetiopathogenesis and diagnostic features of **both** of the following conditions: *(10 marks)*
 - i. fanconi-like syndrome

 - ii. distal renal tubular acidosis.

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

- a) Describe and contrast the normal action potentials of cardiac myocytes and cardiac pacemaker cells. Include in your answer the ionic events that are responsible for these action potentials. *(15 marks)*

- b) Describe how changes in serum potassium may affect the cardiac action potentials. *(3 marks)*

- c) List the surface electrocardiogram changes that may occur with hyperkalaemia. *(2 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**

All questions are of equal value

Answer **FIVE** questions each worth 20 markstotal 100 marks.

Paper 2: Small Animal Medicine

Answer five (5) from the six questions only.

1. Compare and contrast acromegaly in the cat and the dog, with regards to:
 - a) pathogenesis underlying the most common causes in each species (4 marks)
 - b) clinical manifestations (8 marks)
 - c) diagnosis (4 marks)
 - d) treatment. (4 marks)

2. Multiple factors have been suggested to contribute to the development of anaemia of chronic renal failure.
 - a) List the proposed contributing factors and indicate which of these are considered to be the most important. (4 marks)

 - b) For each of the contributing factors in the list above, briefly discuss:
 - i. underlying pathophysiologic mechanisms (8 marks)
 - ii. diagnostic features (4 marks)
 - iii. therapeutic approach. (4 marks)

3. Discuss protein losing enteropathy (PLE) in the dog. Include in your answer:
 - a) the pathogenesis and differential diagnoses of PLE (7 marks)

 - b) the diagnostic testing methods available for a dog with suspected PLE (7 marks)

 - c) the specific management of PLE with consideration of potential complications that might be present. (6 marks)

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

- a) Australia and New Zealand have appropriate biosecurity measures implemented by the Australian Quarantine and Inspection Service (AQIS) or the Ministry of Agriculture and Forestry (MAF), respectively to prevent the introduction of exotic canine and feline diseases. For EITHER Australia OR New Zealand, list **four (4)** diseases for which mandatory testing protocols may be required (depending on the country of origin) for dogs and/or cats. (2 marks)
- b) Currently there is no screening test performed by AQIS or MAF to detect *Hepatozoon canis* or *H. americanum* infections in dogs. If a dog infected with either of these organisms was to enter Australia or New Zealand, name the region(s) of the world from which it is likely to have acquired these infections. (2 marks)
- c) Describe the clinical signs and diagnostic findings associated with canine hepatozoonosis. (8 marks)
- d) Briefly discuss whether there is a risk that either *H. canis* or *H. americanum* could become established in Australia or New Zealand. (1 mark)
- e) Outline the treatment of a dog with class 2 heartworm disease (dirofilariasis) with microfilaraemia. (7 marks)

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

- a) Outline the treatment of acute and chronic generalised myasthenia gravis. (7 marks)
- b) List the categories of inflammatory arthritides in dogs and cats. For **each** category list the differential diagnoses. (6 marks)
- c) Outline the therapeutic approach to chronic idiopathic epilepsy refractory to twice-daily phenobarbitone dosing in dogs and cats. (7 marks)

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

- a) Outline, in table form, the International Renal Interest Society (IRIS) guidelines for staging chronic kidney disease (CKD) in dogs and cats. *(5 marks)*

- b) Based on the IRIS stages, describe and justify your management strategies for the treatment of CKD in dogs and cats. *(15 marks)*

End of paper