



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2019

Small Animal Medicine

Paper 1

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

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

Answer **ALL FIVE (5)** questions

All five (5) questions are of equal value.

Answer **FIVE (5)** questions, each worth 48 markstotal 240 marks

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Paper 1: Small Animal Medicine

Answer all five (5) questions

1. Answer **all** parts of this question:

- a) Define myelodysplastic syndrome and discuss the pathogenesis of myelodysplastic syndrome in cats. *(8 marks)*
- b) Discuss the pathogenesis of haemotropic mycoplasma infections in cats. *(16 marks)*
- c) Answer **both** parts of this sub-question:
 - i. Describe the normal physiologic control of red blood cell production. *(8 marks)*
 - ii. Discuss the aetiopathogenesis and classification of erythrocytosis in dogs including differential diagnoses for each classification. A diagram may be useful to illustrate the classification system. *(16 marks)*

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

- a) Describe the pathophysiology of the following diseases:
 - i. idiopathic pulmonary fibrosis *(6 marks)*
 - ii. endogenous lipid pneumonia. *(6 marks)*
- b) Describe the aetiology and pathophysiology of pulmonary thromboembolism in dogs. *(36 marks)*

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

a) Answer **all** parts of this sub-question:

- i. Describe how genetic mutations may contribute to copper-associated hepatopathy in Labrador retrievers. (6 marks)
- ii. Compare the localisation of copper accumulation in the liver in primary copper storage disease versus cholestasis. (6 marks)
- iii. Discuss the significance of high hepatic copper concentrations in dogs without a known genetic susceptibility to copper hepatopathy. (12 marks)

b) Answer **both** parts of this sub-question:

- i. Discuss the proposed mechanisms by which taurine deficiency may develop in dogs. (8 marks)
- ii. Discuss the proposed mechanisms by which dietary factors may contribute to the development of dilated cardiomyopathy (DCM) in dogs. (16 marks)

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

a) Describe the aetiology and pathophysiology of the following conditions:

- i. paraneoplastic neutrophilic leucocytosis (8 marks)
- ii. hypertrophic osteopathy (8 marks)
- iii. hyperviscosity syndrome in a dog with multiple myeloma. (8 marks)

b) Discuss the causes of chemoresistance, giving examples (12 marks). Describe in detail, **two (2)** specific mechanisms of chemoresistance (12 marks).

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5. Outline the immunopathogenesis and describe the pathological outcomes for each of the following conditions:
- a) rheumatoid arthritis in dogs (*24 marks*)
 - b) feline asthma. (*24 marks*)

End of paper



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Paper 2

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Answer **ALL FIVE (5)** questions

All **five (5)** questions are of equal value.

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Paper 2: Small Animal Medicine

Answer all five (5) questions

1. Answer **all** parts of this question:
 - a) Discuss the diagnosis of hypoadrenocorticism when ACTH (Synacthen) is not available. *(16 marks)*
 - b) Discuss the approach to differentiating between primary hypothyroidism and sick euthyroid syndrome. *(16 marks)*
 - c) A dog is presented to you for further investigation and treatment of megaesophagus and aspiration pneumonia. A colleague asks whether you will test the dog for endocrine disease. Describe your approach to this case, with regard to endocrine testing, and discuss the evidence for a causal association between megaesophagus and endocrine disease. *(16 marks)*

2. Critically evaluate the evidence for treatment of hypertension in dogs and cats. Include in your answer an assessment of both the evidence for treatment of hypertension overall, as well as the different medications available for use. *(48 marks)*

3. Answer **both** parts of this question:
 - a) You suspect inflammatory central nervous system disease in a five-year-old Maltese dog. Discuss the processes by which one can differentiate between granulomatous meningoencephalitis and necrotising meningoencephalitis. *(8 marks)*
 - b) Discuss the treatment of presumed granulomatous meningoencephalitis. Include in your answer the efficacy of different protocols, potential side effects, and make reference to the relevant literature. *(40 marks)*

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

- a) Describe the presentation, histologic findings, treatment and prognosis of feline gastrointestinal eosinophilic sclerosing fibroplasia. *(16 marks)*
- b) Discuss the indications for the use of gastric acid suppression in cats with chronic kidney disease, making reference to the recent literature. *(16 marks)*
- c) Discuss the evidence for the use of the following biomarkers in canine chronic enteropathy:
 - i. calprotectin *(8 marks)*
 - ii. perinuclear anti-neutrophilic cytoplasmic antibodies. *(8 marks)*

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

- a) For each of the drugs listed below, discuss the following:
 - mechanism of action in cats
 - potential adverse effects in cats
 - spectrum of activity against cryptococcus and aspergillosis in both dogs and cats.
 - i. Voriconazole. *(12 marks)*
 - ii. Flucytosine. *(12 marks)*
- b) Describe the limitations of routine antimicrobial culture and sensitivity testing in Australian or New Zealand veterinary laboratories and discuss how these may influence the interpretation of results in clinical practice. *(24 marks)*

End of paper