



# Australian and New Zealand College of Veterinary Scientists

## **Fellowship Examination**

June 2017

## **Feline Medicine**

## **Paper 1**

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

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

Answer **ALL FIVE (5)** questions

All five questions are of equal value.

Answer **FIVE** questions each worth 48 marks .....total 240 marks

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# Paper 1: Feline Medicine

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## Answer all five (5) questions

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

- a) Describe the absorption of cobalamin (vitamin B12) in the normal healthy cat. *(12 marks)*
- b) Describe the function(s) of cobalamin (vitamin B12) in the normal healthy cat. *(12 marks)*
- c) Discuss the mechanisms by which intestinal and extra-intestinal abnormalities can cause cobalamin deficiency in the cat. *(24 marks)*

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

- a) Outline the current understanding of the aetiology and pathophysiology of feline hypertrophic obstructive cardiomyopathy (HOCM) and its effect on cardiac function. *(15 marks)*
- b) Describe the role of cardiac troponin I (cTnI) and brain natriuretic peptide (BNP) in normal cardiac function. Also describe how cTnI and n-terminal pro-BNP are affected by cardiac and non-cardiac factors. *(15 marks)*
- c) For cats with hypertrophic cardiomyopathy, list **three (3)** measurements on two-dimensional (2D) and/or motion mode (M-mode) echocardiography that have been associated with prognosis. Briefly describe how **each** might affect outcome. *(9 marks)*
- d) The ratio of left atrial to aortic dimensions on a right parasternal short-axis view is frequently used to assess volume loading of the left heart. Discuss the strengths **and** weaknesses of this measurement. *(9 marks)*

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

- a) Discuss the proposed mechanisms for the aetiopathogenesis of feline inflammatory bowel disease (IBD). *(24 marks)*
- b) Describe all the features that may assist in the differentiation of a case of gastrointestinal low-grade (small cell) alimentary lymphoma from severe IBD. *(24 marks)*

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

- a) Discuss the role of the immune system in the pathogenesis of primary immune-mediated anaemia, with reference to the normal process by which the immune system recognises, processes and responds to self and non-self antigens. The use of diagrams is permitted in your answer. *(33 marks)*
- b) Briefly discuss the effects of **each** of the following drugs on the immune system:
  - i. prednisolone *(5 marks)*
  - ii. cyclosporine (ciclosporin) *(5 marks)*
  - iii. mycophenolic acid (mycophenolate mofetil). *(5 marks)*

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5. Polymerase chain reaction (PCR) testing, antibody (Ab) testing and antigen (Ag) testing are widely used for the diagnosis of many feline infectious diseases. These tests can vary in their sensitivities, specificities and positive and negative predictive values.

Answer **all** parts of this question:

- a) Define the terms ‘sensitivity’ **and** ‘specificity’. (2 marks)
- b) Define the terms ‘positive predictive values’ **and** ‘negative predictive values’. (2 marks)
- c) Outline the principles of real time PCR (qPCR). Include in your answer the importance of knowing what the cycling threshold (Ct) value is. (5 marks)
- d) Discuss in detail the strengths and weaknesses of antibody testing, antigen testing and real time PCR (qPCR) for **each** of the following feline infectious diseases: (39 marks)
  - i. feline infectious peritonitis (FIP)
  - ii. feline leukaemia virus (FeLV)
  - iii. toxoplasmosis.

**End of paper**



# Australian and New Zealand College of Veterinary Scientists

## **Fellowship Examination**

June 2017

## **Feline Medicine**

## **Paper 2**

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

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

Answer **ALL FIVE (5)** questions

All five questions are of equal value.

Answer **FIVE** questions each worth 48 marks .....total 240 marks

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# Paper 2: Feline Medicine

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Answer all five (5) questions

1. You are asked by a local cat rescue charity to review their vaccination schedule following an outbreak of respiratory disease. The cats at the facility are a mixture of long-term residents, abandoned kittens, adults and pregnant queens. The cats are individually housed with public access to a viewing area. The charity has moderate funding.

Answer **both** parts of this question:

- a) Describe, justify and prioritise your vaccination schedule. *(34 marks)*
- b) Briefly discuss any additional control measures that you would consider to reduce the likely recurrence of respiratory infections. *(14 marks)*

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

- a) Describe **and** justify your diagnostic approach to progressive and generalised lower motor neuron (LMN) signs, with reference to specific diseases that can result in LMN dysfunction in cats. Explain how your approach may differ for an acute versus a chronic presentation. *(24 marks)*
- b) Describe in detail your therapeutic approach to central nervous system (CNS) cryptococcosis in a four-year-old domestic shorthaired cat. *(24 marks)*

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

- a) A colleague asks for advice about the addition of doxorubicin to a COP (cyclophosphamide, vincristine, prednisolone) protocol to treat an eight-year-old cat with mediastinal lymphoma. Explain your recommendations for **or** against the use of doxorubicin in this scenario. Describe its potential adverse effects and how to prevent and monitor for these adverse effects. (12 marks)
- b) A colleague asks for advice about the use of famciclovir and dosing regimens in an adult cat. Describe the mechanism of action of famciclovir and your dosing recommendations. Include your justification for the dosing regimens you advise. (12 marks)
- c) A colleague asks for advice about the use of clopidogrel in cats with cardiomyopathy. Describe the advice that you would give regarding its use in this scenario including any evidence for its use as well as any potential disadvantages. (12 marks)
- d) Your clinic is reviewing its antimicrobial usage guidelines to promote responsible antimicrobial usage and to minimise the development of hospital-acquired resistance. Outline your recommendations regarding the use of cefovecin in the cat. (12 marks)

4. A 12-year-old domestic shorthaired cat (6 kg weight; 3/5 body condition score) is presented for uncontrolled diabetes mellitus. The patient is receiving 12 IU of glargine insulin (Lantus<sup>®</sup>) injected subcutaneously every 12 hours. You suspect the cat might have hypersomatotropism (acromegaly).

Answer **all** parts of this question:

- a) What clinical features may give rise to this suspicion? (2 marks)
- b) Describe your investigation of this patient and what abnormalities you might expect to find with acromegaly. (17 marks)
- c) Discuss in detail the medical and surgical treatment options for acromegaly. Include in your answer any limitations of those treatments. (25 marks)
- d) Describe how your approach would be modified if the owners had a limited budget of \$2,000. (4 marks)

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

- a) List the potential causes of ureteral obstruction in the cat. *(4 marks)*
  
- b) Describe the possible presenting complaints, clinical and laboratory findings of a cat with complete ureteral obstruction. Compare and contrast the potential differences in these findings between unilateral and bilateral complete ureteral obstruction. *(10 marks)*
  
- c) Discuss the advantages and limitations of different diagnostic imaging modalities for diagnosing ureteral obstruction. *(10 marks)*
  
- d) Discuss in detail the medical and surgical treatment options for a unilateral ureteral obstruction caused by suspected dried-blood calculi. Include in your answer how you would monitor the response to treatment. *(24 marks)*

**End of paper**