Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2013

Small Animal Medicine

Paper 1

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

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

Answer **ALL <u>FIVE (5)</u>** questions

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

Paper 1: Small Animal Medicine

Answer all five (5) questions

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

   a) Pancreatic lipase analysis has led to improved diagnosis of canine pancreatitis. Two tests are currently available in the dog, namely SNAP cPL and spec cPL. Discuss how SNAP cPL and spec cPL can be utilised in the diagnosis and management of acute canine pancreatitis, particularly in relation to the sensitivity and specificity of the tests, and how this may affect their clinical application. *(24 marks)*

   b) Describe the theories for the pathogenesis of biliary mucocele. *(24 marks)*

2. For patent ductus arteriosus (PDA) in the dog, describe the following in detail:

   a) The anatomy and function of the ductus arteriosus in the foetus. Include in your answer the normal flow of blood through the pulmonary circulation and ductus arteriosus. *(10 marks)*

   b) The process by which the ductus closes shortly after birth and the proposed mechanism for abnormal patency. *(14 marks)*

   c) The pathophysiological effects of PDA in the first six months of life. *(10 marks)*

   d) The proposed mechanisms that are thought to lead to 'right to left' shunting through a patent ductus arteriosus after birth. *(14 marks)*

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

a) Describe the mechanisms by which glucocorticoids are reported to cause immunosuppression in dogs *(18 marks).* Include mention of the major mode(s) of action of glucocorticoids when used in the treatment of immune-mediated haemolytic anaemia. *(2 marks)*

b) Discuss the mechanisms which explain the thromboembolic complications sometimes associated with glucocorticoid therapy. *(14 marks)*

c) Describe the mechanisms by which glucocorticoids (endogenous or exogenous) may contribute to the development of systemic arterial hypertension. *(14 marks)*

4. Clinical signs of neurologic and/or musculoskeletal system dysfunction are often seen as a result of systemic disease in dogs and cats.

For **each** of the following diseases:

- thiamine deficiency
- hypokalaemia
- feline infectious peritonitis.

a) Briefly describe the neurologic and/or musculoskeletal signs that could be present. *(4 marks each)*

b) Explain the pathogenesis of these clinical signs. *(12 marks each)*

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

a) Briefly describe the features of the innate and acquired immune system which act to prevent bacterial colonisation of the urinary tract. *(16 marks)*

b) Outline the clinical features of a complicated urinary tract infection. *(8 marks)*

c) Detail the identified risk factors that have been associated with the development of transitional cell carcinoma of the urinary bladder in the dog. *(8 marks)*

d) Outline the indications for, and limitations of, a bladder tumour antigen test. *(16 marks)*

End of paper

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Paper 2

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

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

Answer **ALL <u>FIVE (5)</u>** questions

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

Paper 2: Small Animal Medicine

Answer all five (5) questions

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

   a) Describe possible outcomes in a cat following exposure to feline leukaemia virus infection (FeLV). *(15 marks)*

   b) For each possible outcome detail the expected results from the various tests for FeLV. Include in your answer reasons for false positive and false negative test results and why discordant test results may occur. *(25 marks)*

   c) Briefly describe the impact of disease prevalence on the interpretation of test results. *(8 marks)*

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

   a) Briefly describe the predisposing factors and clinical presentation of aortic thrombosis in the dog. *(12 marks)*

   b) Define the term 'feline lung-digit syndrome'. Describe the underlying cause(s), clinical features and treatment options of this syndrome. *(12 marks)*

   c) Discuss the role of fungal culture and fungal serology in the diagnosis of canine sinonasal aspergillosis. *(12 marks)*

   d) Discuss underlying cause(s) *(8 marks)* and management *(4 marks)* of spontaneous pneumothorax in the cat. *(Total 12 marks)*

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3. A five-year-old male neutered Labrador has been hospitalised for the past 48 hours on IV fluids for non-specific gastroenteritis after eating garbage. Initial physical examination was unremarkable apart from signs of moderate dehydration. He had a urinary catheter placed for a brief time to obtain a urine sample. On the third day of hospitalisation he develops a fever (rectal temperature 40°C).

Answer **both** parts of this question:

a) Develop a diagnostic and management plan for development of fever in this hospitalised patient. Include in your answer differential diagnoses you would consider as an underlying cause of the fever. *(24 marks)*

b) Define the terms anorexia, cachexia and sarcopenia *(4 marks).* Describe general management strategies for anorexic patients with cachexia *(20 marks).* A description of therapy for specific underlying disease(s) is not required.

4. A middle-aged, male neutered, mixed breed dog presents for investigation of confirmed polydipsia and polyuria of four months duration. Routine diagnostic investigations (history-taking, physical examination, routine haematology, serum biochemistry and urine analysis) were normal apart from hypercalcaemia (ionized calcium 1.8 mmol/L, reference range 1–1.4).

Answer **all** parts of this question:

a) Discuss how you would investigate this case. Explain the reasoning behind each of your diagnostic choices and indicate the sequence in which these tests would be performed. *(24 marks)*

b) Based on the information available at this point justify whether or not symptomatic treatment for hypercalcaemia is indicated. *(4 marks)*

c) If therapy was indicated describe what therapies could be used? *(4 marks)*

d) In another hypercalcaemic dog, with a nine month history of polydipsia, a definitive diagnosis of primary hyperparathyroidism is made. A unilateral parathyroid mass is detected ultrasonographically and a decision is made to remove the mass surgically. Describe the predictable, potential post-operative complications in this case. Discuss the management of this patient peri-operatively. *(16 marks)*

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

a) Describe your initial management (including methods of monitoring) of oliguria due to acute kidney injury (AKI) from grape toxicity in a dog that is clinically dehydrated with hyperkalaemia (7.5 mmol/L, reference range 3.5–5.8 mmol/L) and hypotension (systolic BP 70 mm Hg). Justify your approach. *(24 marks)*

b) Following your therapy, blood pressure and potassium levels have normalised. The patient is still oliguric. Discuss other therapies that could be considered and indicate the level of evidence that supports these treatments in dogs. *(16 marks)*

c) Discuss the prognosis of acute renal failure in dogs and cats with reference to prognostic indicators. *(8 marks)*

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