



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2018

Small Animal Surgery Paper 1

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

Time allowed: **Three (3)** hours after perusal

Answer **ALL SIX (6)** questions

All **six (6)** questions are of equal value.

Answer **SIX (6)** questions, each worth 30 markstotal 180 marks

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Paper 1: Small Animal Surgery

Answer all six (6) questions

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

- a) List and briefly define **two (2)** distinct types of acute herniation of hydrated nucleus pulposus in dogs. *(2 marks)*
- b) Compare and contrast the magnetic resonance imaging (MRI) findings of the **two (2)** conditions identified in question 1 a). *(7 marks)*
- c) List **four (4)** mechanisms of injury that may lead to spinal cord contusion. *(1 mark)*
- d) Describe the pathophysiological process of secondary spinal cord injury. Include in your answer any reference to cell types and chemical mediators that may be involved in this process. *(20 marks)*

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

- a) With regard to angular limb deformity correction, define and explain the following acronyms:
 - i CORA (2 marks)
 - ii TBL (2 marks)
 - iii ACA (2 marks)
- b) Define the **three (3)** rules of osteotomy, as described by Paley. You may draw a diagram. (6 marks)
- c) Describe the stepwise process of planning a corrective osteotomy for an angular limb deformity using the CORA methodology. You may draw a diagram. (8 marks)
- d) Define the term, 'oblique plane deformity' and provide **one (1)** example. Describe how you would determine the magnitude and direction of an oblique plane deformity. You may draw a diagram. (4 marks)
- e) Discuss **four (4)** types of osteotomy that may be employed for correcting angular limb deformity. (6 marks)

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

- a) List and define the categories of surgical site infections. (5 marks)
- b) List and briefly discuss the **four (4)** stages of biofilm formation. (5 marks)
- c) Discuss, with reference to the literature, the factors reported to influence the rates of surgical site infection associated with the surgical treatment for cranial cruciate ligament deficiency in dogs. (20 marks)

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

- a) Briefly describe the process of bone healing under the conditions of **both** absolute **and** relative stability. (10 marks)
- b) Using references where appropriate, discuss in detail the biomechanical rationale for the use of plate-rod constructs in veterinary orthopaedics. Include in your answer comparisons between the behaviour of locked **and** non-locked plate-rod systems. (20 marks)

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

- a) Describe calcium homeostasis in the **normal** dog. You may draw a diagram. (6 marks)
- b) List the **four (4)** most common differential diagnoses of hypercalcaemia for both the dog **and** the cat. (4 marks).
- c) Explain, in detail, how you would approach the diagnostic evaluation of confirmed ionised hypercalcaemia in a dog that has an otherwise normal complete serum biochemistry analysis. Include in your answer references to the relative diagnostic accuracy of any specific investigations. (10 marks)
- d) Using appropriate referencing to the literature, discuss the principles of pre- and post-operative management of calcium in a hyperparathyroid dog. Include a discussion of any controversial or conflicting studies in your answer. You may draw a diagram if you wish. (10 marks)

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

- a) Briefly describe the normal dynamics of peritoneal fluid circulation within the peritoneal cavity in dogs. (5 marks)
- b) Briefly explain lymphatic drainage of the peritoneal cavity in dogs. (5 marks)
- c) Using appropriate references to the published literature, discuss the role of abdominal drainage in the management of septic peritonitis. (20 marks)

End of paper



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Paper 2

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Time allowed: **Three (3)** hours after perusal

Answer **ALL SIX (6)** questions

All **six (6)** questions are of equal value.

Answer **SIX (6)** questions, each worth 30 markstotal 180 marks

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Paper 2: Small Animal Surgery

Answer all six (6) questions

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

- a) Classify the causes and give **three (3)** specific differentials for **each** classification of icterus in the dog. *(3 marks)*
- b) List and describe the expected results and justify recommended pre-operative diagnostic testing for a dog with a choledocholith causing complete extrahepatic biliary duct obstruction. Discuss how these results would influence the pre-operative management of this dog. *(10 marks)*
- c) Compare and contrast the surgical techniques for the management of extrahepatic biliary duct obstruction. Include in your answer the relevant indications and potential complications. *(17 marks)*

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

- a) List the **three (3)** main ligamentous stabilisers of the atlantoaxial joint, and describe their origins and insertions. Indicate which of these is thought to impart the most stability to the joint. *(4 marks)*
- b) List and briefly describe **two (2)** techniques for the dorsal stabilisation of atlantoaxial luxation and **two (2)** techniques for the ventral stabilisation of atlantoaxial luxation. *(6 marks)*
- c) Discuss, with reference to the literature where appropriate, the expected outcomes of the various surgical techniques for the management of atlantoaxial luxation. You may discuss these in broad categories rather than individual techniques. Include in your answer the potential perioperative complications and identified prognostic indicators. *(20 marks)*

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3. A six-year-old, female, spayed Burmese cat has presented with signs of acute kidney injury. On physical examination, you can palpate a large, painful right kidney and a small left kidney. You diagnose complete ureteral obstruction.
- a) Describe appropriate emergent and medical management of this patient. Include in your answer any particular medications you would use, and the prognosis for a successful outcome with nonsurgical management. (8 marks)
 - b) Explain the term, circumcaval ureter, and the clinical significance of this in the cat. (3 marks)
 - c) What is the potential for the recovery of glomerular filtration rate if complete obstruction is alleviated after the following periods of time: (1 mark)
 - i one week
 - ii two weeks.
 - d) Discuss, with reference to the literature where appropriate, the reported outcomes for ureterotomy, ureteral stenting and subcutaneous ureteral bypass in cats with ureteral obstruction. (18 marks)
4. Answer **all** parts of this question:
- a) Discuss the use of advanced imaging (computed tomography [CT], magnetic resonance imaging [MRI]) **and** the expected findings of these tests for the assessment of dogs with degenerative lumbosacral stenosis. Refer to the literature, where appropriate. (12 marks)
 - b) Briefly discuss the reported efficacy of non-surgical therapy for degenerative lumbosacral stenosis. (3 marks)
 - c) Discuss, with reference to the literature, the evidence to support the surgical techniques available for the treatment of degenerative lumbosacral stenosis in dogs. (15 marks)

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

- a) Describe the vascular anatomy of the canine trachea and how this influences surgical technique for the application of extraluminal ring prostheses. You may draw a diagram. *(5 marks)*
- b) Compare and contrast the efficacy, complications and outcomes for dogs with tracheal collapse managed with extraluminal versus intraluminal stenting. *(20 marks)*
- c) Briefly discuss the concurrent problems and/or comorbidities that can be present in dogs with tracheal collapse. *(5 marks)*

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

- a) List the bony abnormalities associated with medial patellar luxation. *(3 marks)*
- b) Choose **two (2)** dog breeds with breed-associated anatomic abnormalities associated with medial patellar luxation. For **each** breed, list any associated abnormality and identify the publication supporting the association. *(4 marks)*
- c) Compare the use of plain radiography **and** computed tomography for surgical planning for medial patellar luxation in dogs. *(8 marks)*
- d) Discuss the aims and effects of surgical technique on prognosis, with regard to the treatment of medial patellar luxation. Make reference to the literature to justify your answer. *(15 marks)*

End of paper