

Australian College of Veterinary Scientists

Fellowship Examination

June 2011

Small Animal Surgery

Paper 1

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

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

Answer your choice of any **FOUR** (4) questions from the six questions **ONLY**

All six main questions are of equal value

Answer **FOUR** questions each worth 25 markstotal 100 marks

Paper 1: Small Animal Surgery

Answer your choice of any **FOUR** (4) questions from the six questions **ONLY**.

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

Using an evidence-based approach, discuss:

- a) the use and effectiveness of medical options in the initial management of acute spinal cord trauma (10 marks)
- b) the effect of non-steroidal anti-inflammatory drugs (NSAIDS) on the healing of bone fractures. (15 marks)

2. A seven-year old Doberman requires a ventral slot procedure for disk-associated caudal cervical spondylomyelopathy. The dog has been tested for Von Willebrand's disease and is known to be an affected individual on the basis of a DNA test.

Answer **all** subparts of this question:

- a) Most canine patients have type I Von Willebrand's disease. Describe the type of genetic mutation identified in Dobermans with type 1 Von Willebrand's disease and how it alters the biological activity of the affected gene. (5 marks)
- b) Critically comment on the value of the available screening tests for Von Willebrand's disease and explain how to interpret the results that are obtained from each test. (10 marks)
- c) Discuss the operative risks specific to the Doberman's required procedure and suggest appropriate pre-operative, intra-operative and post-operative management strategies to obviate any risks as they relate to the dog's Von Willebrand's disease status. (10 marks)

3. Regarding full-thickness free skin grafting in dogs, answer **all** subparts of this question:

- a) Discuss the processes involved in free graft 'take'. (7½ marks)
- b) Formulate a plan for your optimal management of a distal extremity wound for free mesh grafting, explaining how your plan minimises complications and ensures maximal graft 'take' (17½ marks)

Examination continued on next page

4. A number of patients in your hospital develop postoperative infections following orthopaedic surgery during a short period of time. Several of the patients have had tissue collected from the surgical wounds and a *Pseudomonas* spp. isolated from culture and susceptibility testing.

Answer **all** subparts of this question:

- a) Outline the key aspects of aseptic technique with relation to the surgical patient undergoing an elective orthopaedic procedure. (7½ marks)
- b) Explain how you would investigate this presumed outbreak of hospital-acquired *Pseudomonas* spp. infections. (12½ marks)
- c) Discuss the relevant characteristics of *Pseudomonas* spp. that influence both your investigation of the outbreak and infection control steps. (5 marks)

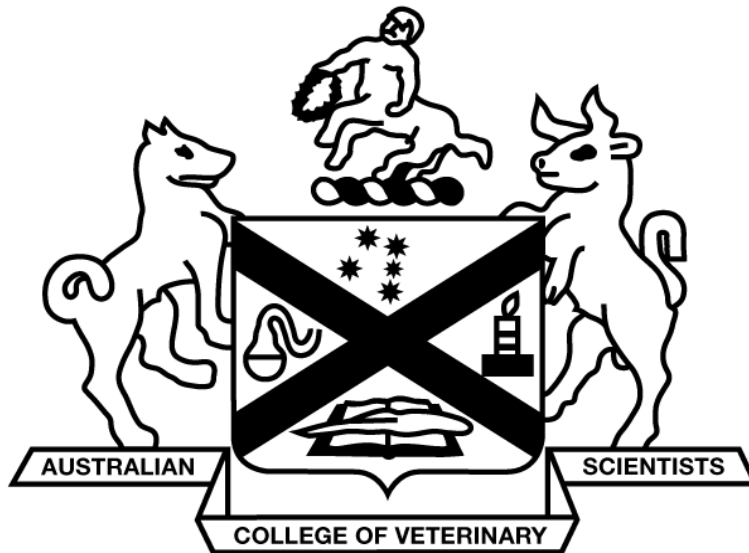
5. Answer **all** subparts of this question:

- a) Locking plates load-share with bone in a way that differs from a standard plate without locking screws. Discuss this difference, highlighting the advantages of locking screws and contrasting the mechanisms by which the different implant systems loosen or fail under load. (7½ marks)
- b) The Synthes LCP and the Orthomed SOP are two alternatives for veterinary orthopaedic application. Compare and contrast these two systems, highlighting any design advantages of each. (10 marks)
- c) 'Cerclage wiring combined with intra-medullary pinning is a popular form of long bone fracture fixation, yet is also associated with a significant rate of non-union when poorly performed'. Discuss this statement highlighting the indications for cerclage wiring and the principles of correct cerclage application as they apply to fractures of the long bones in small animals. (7½ marks)

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

- a) Draw the microscopic structure of normal articular cartilage. (5 marks)
- b) Compare and contrast the ultra-structure and function of normal articular cartilage to that of osteoarthritic cartilage. (10 marks)
- c) Discuss the pathogenesis of osteoarthritis secondary to hip dysplasia. (10 marks)

End of Paper



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Paper 2

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

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

Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**

All six main questions are of equal value

Answer **FOUR** questions each worth 25 markstotal 100 marks

Paper 2: Small Animal Surgery

Answer your choice of any **FOUR** (4) questions from the six questions **ONLY**.

1. You are presented with an eight-year old male neutered labrador dog with a 4 cm x 4 cm mass affecting one anal sac. Rectal palpation reveals several enlarged regional lymph nodes. Blood tests reveal a serum ionized calcium concentration of 1.7 mmol/L. An incisional (wedge) biopsy of the perianal mass confirms apocrine gland adenocarcinoma.
 - a) Discuss the role of surgery in the management of this dog's neoplasia. *(10 marks)*
 - b) Justify the use of multimodal (or combination) therapy for the treatment of this dog's neoplasia, with reference to the published literature. *(15 marks)*

2. Regarding shoulder lameness in dogs, answer **all** subparts of this question:
 - a) Draw the ligaments and tendons of the canine shoulder joint. *(7 marks)*
 - b) List important conditions of the canine shoulder joint that may result in forelimb lameness. For each condition, state which diagnostic techniques may be most useful in reaching a diagnosis. Include in your answer the changes that may be seen for each condition with each diagnostic test. *(18 marks)*

3. Juvenile pubic symphysiodesis (JPS) has been proposed as a means of surgical prophylaxis for puppies at risk of developing clinical hip dysplasia.

Answer **all** subparts of this question:

 - a) Discuss the experimental evidence for JPS as an effective means of improving coxofemoral joint conformation. *(8 marks)*
 - b) Critically appraise the available evidence and comment on the effectiveness and potential complications of the JPS procedure in clinical patients. *(10 marks)*
 - c) Discuss the decision-making process for use of the JPS procedure in a clinical setting. *(7 marks)*

Examination continued on next page

4. Regarding the use of the CORA methodology for the correction of antebrachial limb deformities, answer **all** subparts of this question:

- a) Define the following terms
 - i. CORA methodology
 - ii. 'uni- apical' and 'bi-apical' deformities
 - iii. 'compensated' and 'partially compensated' bi-apical deformities. (8 marks)
- b) Briefly describe the steps that are undertaken when applying the CORA method. (9 marks)
- c) Discuss the advantages and disadvantages of the CORA methodology with alternative techniques. (8 marks)

5. Regarding portosystemic shunts:

You are presented with an eight-month old Shih Tzu puppy, which has been diagnosed with an extrahepatic shunt. The owner is considering surgical management but wishes to discuss all therapeutic options.

Answer **all** subparts of this question:

- a) Discuss the evidence that supports each management option for this patient. (10 marks)
- b) Outline the predictive clinical factors that have been associated with a positive outcome or the ability of patients to tolerate occlusion of the shunting vessel. (10 marks)
- c) Outline the peri-operative risks specific to this patient. (5 marks)

Examination continued on next page

6. You are presented with a six-year-old, male neutered, Shetland sheepdog who has a history of intermittent anorexia and vomiting over the past six months. Serum biochemistry and haematology performed at the referring practice three months earlier during an episode of anorexia and vomiting demonstrated moderate elevations in sALP, sALT and bilirubin in addition to a leukocytosis with a neutrophilia. Investigation of this case by a medicine specialist in your practice has demonstrated a lesion on abdominal ultrasound consistent with a biliary mucocoele. On this occasion the dog does not have an elevation in bilirubin on serum biochemistry but does have a mild persistently elevated sALP and sALT. Haematology shows a mild leukocytosis and neutrophilia.

You are asked by a medicine specialist on your opinion on management of this case.

Answer **all** subparts of this question:

- a) Critically comment on the management options available. *(5 marks)*
- b) Discuss further data that you would collect prior to surgical intervention and justify the value of this information. *(5 marks)*
- c) Discuss the operative risks specific to this patient. List the factors associated with a poor outcome. *(5 marks)*
- d) Discuss the proposed mechanisms in the pathophysiology of this disease and identify risk factors which have been identified for development of this disease. *(10 marks)*

End of paper