



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2015

Small Animal Surgery Paper 1

Perusal time: **Fifteen (15)** minutes

Time allowed: **Two (2)** hours after perusal

Answer **ALL FOUR (4)** questions

Answer **FOUR** questions each worth 30 markstotal 120 marks

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Paper 1: Small Animal Surgery

Answer all four (4) questions

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

- a) Using the cell-based model, briefly describe, in the order in which they occur, the major events involved in haemostasis. Include in your answer the important tissues, and the cellular and non-cellular components involved. Your answer should briefly describe the differences between the classical cascade model and the cell based model and include mechanisms which prevent widespread initiation of coagulation. *(22 marks)*

A six-month-old Doberman pinscher is re-presented the day following ovario-hysterectomy for extensive ventral abdominal petechiation, dripping of sanguineous fluid from the surgical wound, depression and weakness. You are confident that your ligatures were appropriately applied during surgery.

- b) State the most likely diagnosis for this haemostatic abnormality. *(1 mark)*
- c) For the diagnosis given in 1 b) above, which component of haemostasis is abnormal? *(1 mark)*
- d) Briefly describe the underlying pathophysiologic mechanism for this abnormality. *(2 marks)*
- e) Name **and** briefly describe how to perform and interpret the pre-operative screening test that may have identified the abnormality given in 1 c) above. *(4 marks)*

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

- a) Describe the blood supply to a normal mature canine long bone. You may use diagrams to illustrate your answer. *(13 marks)*.
- b) Following fracture, the blood supply to a bone is often extensively damaged. Briefly discuss how the blood supply is re-established to enable fracture healing. *(7 marks)*
- c) Define the terms 'malunion' **and** 'delayed union' in the context of fracture healing. *(2 marks)*
- d) List the factors that may contribute to delayed fracture healing in dogs. For **each** factor state why it may contribute to delayed fracture healing. *(8 marks)*

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

- a) Draw and label a diagram of the gross anatomy of the female canine reproductive tract. Include all major ligaments and organs. You do not need to label neurovascular structures. *(10 marks)*
- b) Name **each** of the following:
 - i. the artery supplying the ovaries and the vessel(s) from which it arises *(2 marks)*
 - ii. the vessel draining the ovaries and the vessel(s) they lead into *(2 marks)*
 - iii. the lymphocenter the lymphatics from the female urogenital tract drain into. *(1 mark)*
- c) List **six (6)** complications specific to ovariohysterectomy in the dog. *(3 marks)*
- d) List the advantages **and** disadvantages of desexing dogs and cats aged less than 16-weeks of age. *(12 marks)*

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

- a) Draw and label a diagram of the microscopic anatomy of the cartilaginous component of the physis of a long bone in a skeletally immature animal. Provide a brief description of the differences in cellular morphology in **each** region. *(10 marks)*

- b) Draw and label the physal fracture configurations as described by Salter and Harris. *(6 marks)*

- c) Explain why distal ulna physal trauma is a clinically significant injury in the dog. Include in your answer potential sequelae to premature closure of the distal ulna physis. *(14 marks)*

End of paper



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Paper 2

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Answer **ALL FOUR (4)** questions

Answer **FOUR** questions each worth 30 markstotal 120 marks

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Paper 2: Small Animal Surgery

Answer all four (4) questions

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

- a) Antibiotics may be classified by their mode of action: *(9 marks)*
 - i. List **three (3)** antibiotic mechanisms of action.
 - ii. For **each** class listed in (i), give a specific drug example.
 - iii. Describe how **each** class listed in (i) acts to affect bacterial organisms.
- b) Discuss strategies for the prevention of surgical site infections in small animal practice. *(21 marks)*

2. A 10-year-old male Labrador presents to your clinic with signs consistent with an upper airway obstruction. On physical examination, rectal temperature is 39.8°C; he is panting and has a heart and pulse rate of 120 beats per minute. Upper airway auscultation reveals high pitched noise over the larynx.

Answer **all** parts of this question:

- a) Describe your stabilisation of this patient. Include your rationale for **each** treatment given. *(11 marks)*
- b) List **four (4)** differential diagnoses for this dog's clinical signs. *(4 marks)*
- c) Describe your initial diagnostic plan for this patient. *(7 marks)*
- d) Temporary tracheostomy can be used to bypass upper airway obstructions. Briefly describe the technique for surgical placement of a temporary tracheostomy tube. *(5 marks)*
- e) Outline the routine care of a tracheostomy tube in the first 24-hours after placement. *(3 marks)*

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3. A five-year-old Irish wolfhound presents with right forelimb lameness. There is unilateral metaphyseal bone pain and swelling in the distal radius. An osteolytic bone lesion in the distal radius is identified on radiographs. You suspect appendicular osteosarcoma.

Answer **all** parts of this question:

- a) List **four (4)** alternative differential diagnoses. (2 marks)
- b) Describe your initial diagnostic plan for this patient prior to treatment. Include in your answer the reason for performing **each** suggested diagnostic test. (14 marks)
- c) Discuss the surgical and medical treatment options for distal radial appendicular osteosarcoma in a giant breed dog. Include in your answer the prognosis and median survival times for the treatments discussed. (14 marks)

4. You have just performed an ovariohysterectomy on a thin, 10-month-old, female Yorkshire terrier. The dog remains in a near comatose state four hours after the cessation of anaesthesia. Your anaesthetic protocol consisted of methadone premedication, intravenous propofol induction and maintenance on a paediatric circuit with isoflourane in oxygen. The dog was bright and alert with normal mentation prior to anaesthesia. You suspect a deficiency in drug metabolism and elimination.

Answer **all** parts of this question:

- a) State the most likely diagnosis. (1 mark)
- b) Briefly explain the pathophysiological events that account for the delayed recovery from anaesthesia in this case. (4 marks)
- c) List the clinical pathology tests **and** the expected abnormalities you would expect to confirm the presumptive diagnosis given in 4 a) above. (7 marks)
- d) List **three (3)** diagnostic imaging modalities that would help to confirm the diagnosis. List the relative advantages **and** disadvantages of **each**. (9 marks)
- e) List **three (3)** surgical techniques that can be used to treat the problem presumptively diagnosed in 4 a) and the relative advantages **and** disadvantages of **each**. (9 marks)

End of paper