



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2014

Small Animal Dentistry and Oral Surgery Paper 1

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

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

Answer **ALL FOUR (4)** questions

Question 4 is multiple choice which requires completion of 30 multiple choice questions located in the answer booklet you have been provided.

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

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Paper 1: Small Animal Dentistry and Oral Surgery

Answer all four (4) questions

1. Discuss the following statement: 'Periodontal disease is described as a chronic inflammatory disease involving complex host-parasite interactions.' (30 marks)

2. Name **and** describe the stages of tooth development including the approximate eruption times of the deciduous and permanent dentition in the dog. (30 marks)

3. Describe the approach to obtaining a radiograph of the:
 - a) maxillary 4th premolar tooth (108) in the dog,

 - and**

 - b) mandibular 1st molar tooth (309) in the cat.

Include in your answer the technique, including x-ray tube, tooth and film angles. Discuss how to overcome any difficulties and the relevant anatomical structures encountered. (30 marks)

4. Question 4 is a multiple choice question. This question is to be answered in the provided answer booklet.

Continued in provided answer booklet.

Paper 1: Small Animal Dentistry and Oral Surgery

Question 4: Answer all thirty (30) multiple choice questions in this section on attached pages 3 to 10.

Answer all thirty (30) questions on the examination paper. This question is worth 30 marks. Each question is worth one (1) mark. Circle the letter corresponding to your chosen answer.

1. The periodontium which surrounds the teeth is composed of:
 - a. Enamel, cementum and dentine
 - b. Gingiva, cementum, periodontal ligament and alveolar bone
 - c. Gingiva and periodontal ligament only
 - d. Elements of the endoderm
 - e. Gingiva, periodontal ligament and cementum

2. Periodontal disease is:
 - a. The most common disease found in dogs and cats
 - b. Caused by not removing stains and calculus off the teeth
 - c. Not associated with other organ disease
 - d. Often diagnosed in its early stages
 - e. More common in large breed dogs

3. When scaling with an ultrasonic scaler:
 - a. Firm pressure is required to remove calculus
 - b. The tip remains quite cool without the need for water
 - c. Only the side of the tip of the instrument is used in light, sweeping strokes across the tooth surface
 - d. The instrument should be used continuously on each tooth for a minimum time of sixty (60) seconds to ensure the tooth is clean
 - e. The tip is made of stainless steel and should not wear out

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4. In diagnosing periodontal disease, which instrument is the **most** useful?
 - a. Ultrasonic scaler
 - b. Dental explorer
 - c. Periodontal probe
 - d. Periodontal curette
 - e. Dental X-ray machine

5. What is the **most** common mistake made in the treatment of periodontal disease?
 - a. Inadequate removal of supragingival calculus
 - b. Not using prophylaxis paste after scaling the teeth
 - c. Inadequate subgingival scaling and root debridement
 - d. Not using systemic antibiotics after a dental prophylaxis
 - e. Not recommending abrasive diets

6. Periodontal disease is caused by:
 - a. Dental caries
 - b. Plaque, a soft bacterial biofilm that attaches to the tooth surface
 - c. Gram negative aerobic bacteria
 - d. The cause of periodontal disease is unknown
 - e. Calculus, which physically irritates the gingiva

7. When treating periodontitis, saving as many teeth as possible should be a priority:
 - a. Only if the owner is committed to continuing homecare and dental rechecks
 - b. In any patient younger than five (5) years of age
 - c. If the patient is a brachycephalic breed
 - d. In all patients regardless of age, breed and owner commitment to dental home care and repeat dental examinations, as dental scaling and polishing will protect the teeth for many years to follow
 - e. Because cats cannot eat without any teeth

Continued over page

8. With respect to 'dental' diets:
- a. The Veterinary Oral Health Council (VOHC) seal is only awarded to foods that contain chemicals proven to kill plaque bacteria
 - b. Enhanced mechanical removal of plaque can be achieved by altering the physical structure of the food
 - c. Bones are more effective at removing plaque and calculus than any commercial diet currently available
 - d. Can only be fed as a treat once or twice per week as there are none that are balanced to meet the nutritional needs of adult dogs and cats
 - e. There is no evidence that dental diets control plaque
9. The gingival attachment to the tooth:
- a. Is always severed when performing a tooth extraction
 - b. Is only severed when performing a surgical tooth extraction
 - c. Should always be sutured after extracting the tooth
 - d. Attaches to the tooth at the mucogingival junction
 - e. Blocks bacteria from entering the crown of the tooth
10. Dental elevators:
- a. Are held in a modified pen grasp
 - b. Are **only** used to lever the tooth
 - c. Are introduced parallel to the tooth to avoid slipping
 - d. Are held for at least three minutes to stretch and tear the periodontal ligament
11. The tooth root:
- a. Shape does not affect the way the tooth is extracted
 - b. Of canine teeth accepts rotational forces early in the extraction procedure
 - c. In deciduous teeth is made up of very thin enamel and can easily fracture
 - d. Should be extracted if the root fractures in a pulpally infected tooth
 - e. Is attached to the surrounding bone by gingival connective tissue fibres

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12. Complications in tooth extraction:

- a. Often occur due to impatience
- b. May occur due to a lack of planning
- c. Can be avoided by using the neighbouring tooth as a lever point
- d. All of the above are correct
- e. a. & b. are only correct

13. Extraction forceps:

- a. Should **always** be used to extract the tooth
- b. Are used in the early stages of the extraction procedure
- c. Are now made specifically for small animals
- d. Should be sharpened prior to use
- e. Are placed at the coronal tip of the tooth for a better grip

14. When extracting the mandibular canine tooth in a Labrador dog one must:

- a. Be careful and not damage the root of the mandibular 4th premolar tooth
- b. Avoid the mental nerve which usually exits ventral to the 1st premolar tooth from the caudal mental foramen
- c. **Always** remove bone on both the buccal and lingual sides of the tooth
- d. Avoid the common complication of dislocation of the temporomandibular joint
- e. None of the above

15. If a tooth fractures during an extraction procedure and root remains:

- a. The root fragment should always be removed as it will **always** cause problems
- b. An attempt is made to extract the remaining root so long as the benefits of extracting the root outweigh any risks of causing further damage
- c. A surgical mucoperiosteal flap procedure and alveolar bone removal is always required to remove the remaining root
- d. The root can always be left behind because it will not cause any further problems
- e. The root can be left behind because it will eventually dissolve

Continued over page

16. Which of the following statement(s) are correct?

- a. Multi-rooted teeth can be sectioned into single-rooted units using a high speed handpiece and appropriate bur
- b. To extract a multi-rooted tooth, a mucoperiosteal flap procedure is **always** performed
- c. A periosteal releasing incision is only required for mucoperiosteal flaps that are associated with multi-rooted tooth extractions
- d. Canine teeth should be sectioned if the root fractures during the extraction procedure
- e. All of the above

17. When surgically extracting a maxillary canine tooth:

- a. Bone removal to the apex of the tooth is essential
- b. The use of a slow speed handpiece and appropriate bur must be used for bone removal
- c. The mucoperiosteal flap incisions are made directly over the canine tooth root
- d. There are no vital structures in the vicinity to be avoided
- e. An iatrogenic oronasal communication may occur

18. Local anaesthetics work by:

- a. Depolarising the axonal fibre
- b. Blocking sodium gated channels
- c. Preventing depolarization of axonal fibres
- d. a.& b. are correct
- e. b.& c. are correct

19. Bupivacaine:

- a. Has an onset of action of at least 20 minutes and a duration of effect of between six to eight hours
- b. Has an onset of action of five minutes and duration of effect is usually two hours
- c. Is an amide linked anaesthetic agent
- d. Is a short acting anaesthetic agent
- e. Is always used with a vasoconstrictor

20. The mental nerve block in dogs is performed:
- a. To anaesthetise the mandibular premolar teeth
 - b. By inserting a needle into or close to the rostral mental foramen
 - c. Results in anaesthesia to the soft tissues on **only** the lingual surfaces of the mandibular canine and incisor teeth
 - d. With a twenty gauge needle
 - e. To anaesthetise the rostral portion of the inferior alveolar nerve (mandibular nerve)
21. The rostral maxillary (infraorbital) nerve block:
- a. Always anaesthetises the maxillary PM4
 - b. Can be performed in cats in a similar way to the technique in dogs
 - c. Can cause scarring in the infraorbital canal
 - d. If performed correctly will anaesthetise the hard palate
 - e. Can only be performed with an extraoral approach
22. The maxillary nerve:
- a. Is a branch of the 2nd division of cranial nerve V which exits through the foramen ovale
 - b. Courses through the pterygomaxillary fossa
 - c. Branches into the infraorbital and greater palatine nerves
 - d. Is a branch of the facial nerve
 - e. Eventually ends at the infraorbital foramen
23. Local anaesthetic agents block:
- a. **Only** the 1st phase of the pain response
 - b. NMDA receptors in the ventral horn of the spinal cord
 - c. **Only** the 2nd phase of the pain response
 - d. Calcium channels within the nerve
 - e. A δ and C fibres

Continued over page

24. With respect to local anaesthetic nerve blocks of the oral cavity, which statement is **most** correct?
- a. Oral local anaesthetic nerve blocks are best administered prior to commencing an extraction (pre-emptive analgesia)
 - b. Lignocaine HCl is not very effective as a local anaesthetic agent for oral nerve blocks due to its short duration of action
 - c. The nerve supply to the pulp of the tooth can be desensitised by depositing local anaesthetic agents into the marginal gingival tissue surrounding the tooth (ring block)
 - d. Fine needles such as 25-27 gauge should be avoided due to the risk of breakage
 - e. Local anaesthetic agents are reserved only for surgical extractions
25. Which of the following local nerve blocks can be used to reliably desensitise the second maxillary molar?
- a. Mental nerve block
 - b. Maxillary nerve block
 - c. Infraorbital nerve block
 - d. Either b. or c.
 - e. Mandibular nerve block
26. The **most** common oral condition that occurs in young cats is:
- a. Periodontitis
 - b. Tooth resorptions
 - c. Gingivitis
 - d. Stomatitis
 - e. Eosinophilic granuloma complex

Continued over page

27. The aetiology of chronic gingivitis stomatitis in cats is:
- a. Calicivirus
 - b. Oral bacteria
 - c. Hyper responsive immune system
 - d. Herpes virus
 - e. Unknown
28. Chronic gingivitis stomatitis in cats should **always** be treated with:
- a. Professional dental clean under general anaesthetic
 - b. Antibiotics
 - c. Immunomodulator drugs
 - d. Tooth extractions
 - e. Diet
29. The highest success rate for treatment of chronic gingivitis stomatitis in cats is:
- a. Use of a combination of oral antibiotics and oral anti-inflammatory drugs
 - b. Offering a hypoallergenic diet
 - c. Use of prednisolone
 - d. Selective tooth extractions
 - e. Use of omega interferon
30. The **most** likely aetiology of feline tooth resorption is:
- a. Hypervitaminosis D
 - b. Acid coating on dry food
 - c. Periodontal disease
 - d. Chronic Calicivirus infection
 - e. None of the above

End of paper



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June 2014

Small Animal Dentistry and Oral Surgery Paper 2

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Answer **ALL FOUR (4)** questions

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Paper 2: Small Animal Dentistry and Oral Surgery

Answer all four (4) questions

1. A two-year-old female kelpie dog presents to your practice at 8pm with a complicated crown fracture involving the right mandibular canine tooth. The owner said that probably happened earlier that morning whilst playing and the dog was fetching a stick. The tooth and fracture are represented in figure 1 below.



Figure 1

There is no haemorrhage from the exposed pulp canal on probing in the awake patient in the exam room. Following anaesthesia, periodontal probing demonstrated normal sulcus depths and radiographs confirmed the tooth to be periodontally healthy.

Discuss your immediate and long-term case management, including reasons behind your selection of any dental materials used and their purpose. The owner would like to save the tooth if possible. (30 marks)

The radiograph of the fractured tooth is represented in figure 2 on the next page.

Question 1 continued over page



Figure 2

Continued over page

2. A six-year-old-male desexed Australian shepherd dog presents to your practice with a recent history of intermittent oral bleeding and halitosis. The owner has regularly brushed the dog's teeth since he was a puppy, and this is the first time that the owner has noticed any halitosis.

On examination there is no pain on external palpation, minimal calculus present on any teeth, normal mandibular lymph node size. The only abnormal finding on oral examination is some thickening and ulceration of the attached gingiva and mucosa around the left mandibular canine tooth and slight mobility associated with the 3rd incisor and canine teeth. All teeth have normal periodontal sulcal depths on probing.

The tooth and surrounding tissue are represented in figure 3 below and figure 4 on the next page.



Figure 3

Question 2 continued over page



Figure 4

Discuss your differential diagnoses and management of this case following radiographs, which are represented in figure 5 on the next page. Discuss your management of the case and treatment options available based on your differential diagnosis. (30 marks)

Question 2 continued over page



Figure 5

Continued over page

3. A five-year-old male cat presents to your practice with symptoms of oral pain, lethargy, inappetance and a history of long term medication for the management of gingivostomatitis. The owner says that initially the medications (oral prednisolone and amoxicillin) worked well but now the beneficial effects are limited.

The cat allows only a brief and limited oral examination in the consulting room, so you anaesthetise the cat for a further examination where you find periodontal disease, worn teeth, suspected tooth resorptions and marked hyperplastic gingivostomatitis extending into the oropharynx (figure 6 below and figure 7 on the next page).

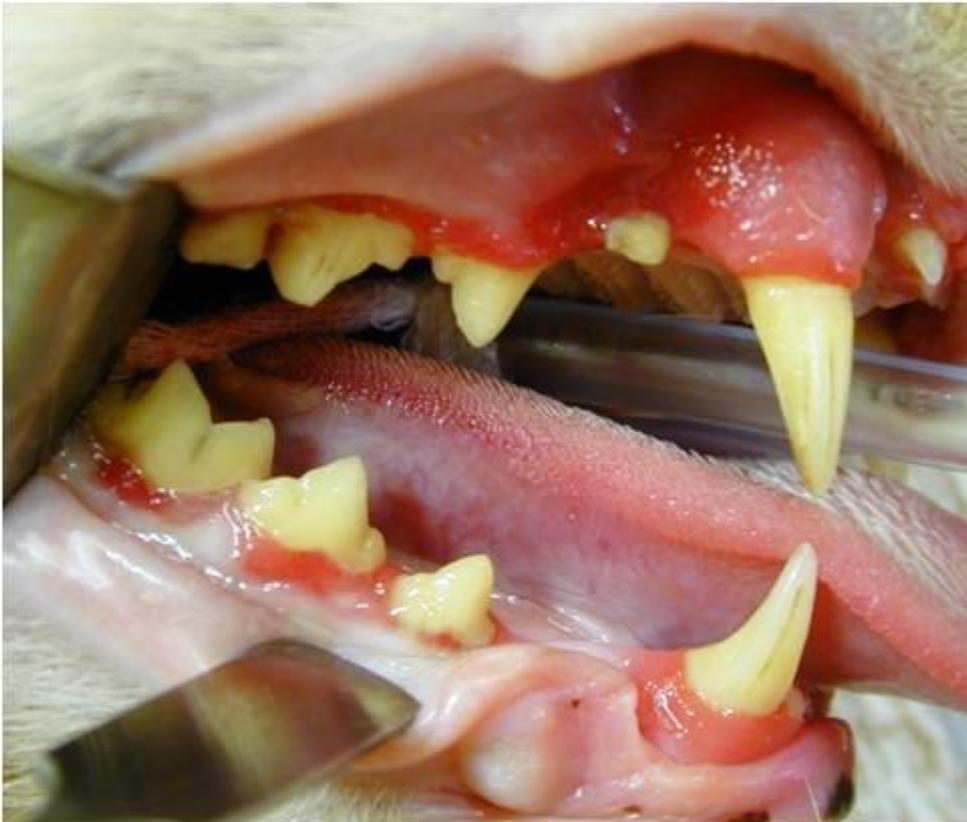


Figure 6

Question 3 continued over page

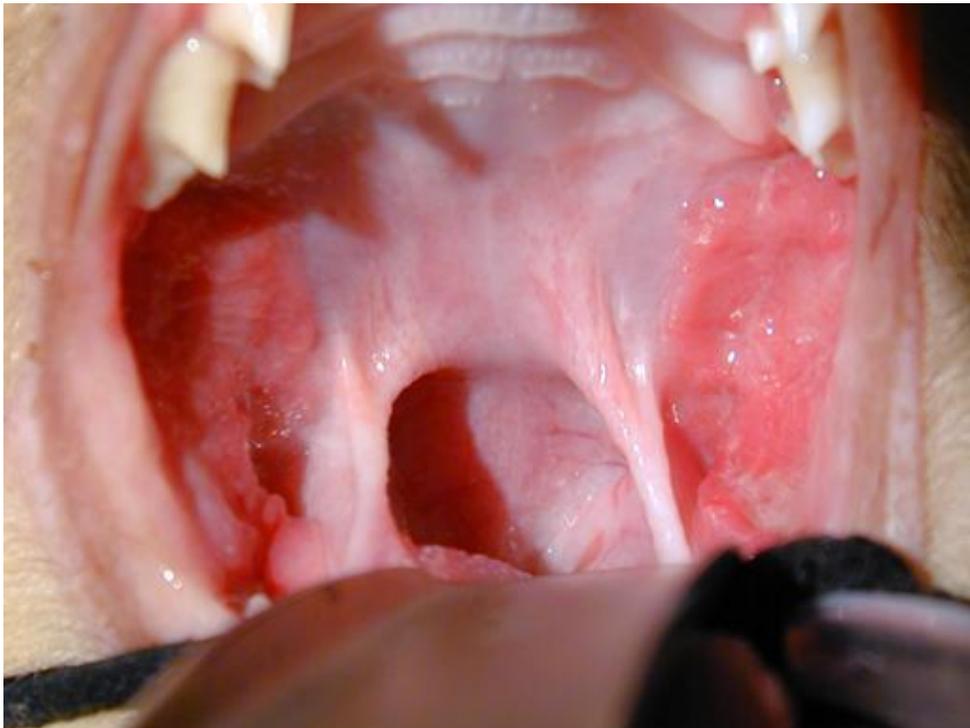


Figure 7

Discuss your management of this case including any medical or surgical options you may consider. (30 marks)

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4. A nine-month-old healthy male bull terrier presents to your practice for routine vaccination and worming. Your oral examination confirms a malocclusion which is bilateral and represented by the photograph in figure 8 below.



Figure 8

The owner is interested in doing what is best for the dog to relieve pain and discomfort. A radiograph of the dog is represented in figure 9 on the next page.

Discuss the treatment options you would present to the owner and why you would **either** recommend or discourage **each** of them. (30 marks)

Question 4 continued over page



Figure 9

End of paper