



Australian and New Zealand College of
Veterinary Scientists

Membership Examination

June 2021

Equine Dentistry

Paper 1

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

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

Answer **ALL FOUR (4)** questions

Answer **FOUR (4)** questions, each worth 30 marks total 120 marks

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Paper 1: Equine Dentistry

Answer all four (4) questions

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

- a) Draw the occlusal surface of tooth 106 in a mature horse (10-years-old). Label the diagram to show the orientation of the tooth and the anatomical structures seen on the occlusal surface. Using the Du Toit naming scheme, label the pulp chambers of this tooth. *(10 marks)*
- b) The surface of the tooth you have drawn is made of materials with differing ultrastructural properties. Describe the ultrastructural anatomy of the tooth components and how this adaption is suited for grazing. Include in your answer a description of how the ultrastructural properties may contribute to the development of dental disease. *(20 marks)*

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

- a) Describe the radiographic bisecting angle technique, including why, how and when it is used, and the advantages and disadvantages of the technique in equine dentistry. *(8 marks)*
- b) Define the techniques and compare the advantages and disadvantages of:
 - i. laterodorsal-lateral-ventral-oblique view
 - ii. ventrolateral-dorso-lateral-oblique view
 - iii. intra-oral radiology.of the maxillary arcades in a six-year-old horse. *(12 marks)*
- c) List Workplace Health and Safety considerations relevant to equine dental radiology. *(10 marks)*

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

- a) List the **three (3)** methods described in the literature to perform a maxillary nerve block and describe **one (1)** technique in detail for the 200 arcade. Include in your answer the technique, equipment, drugs used and potential adverse events. *(20 marks)*
- b) List the structures that need to be avoided when placing the portal through the cheek for a minimally invasive transbuccal extraction, and discuss how to avoid damaging them. Describe the potential consequences of damaging the structures you have listed. *(10 marks)*

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

- a) Using diagrams to illustrate your answer, describe the embryological development of the equine maxillary molar and its wear during the life of the horse. *(10 marks)*
- b) Describe the aetiology and contributing factors of midsagittal fractures of the maxillary first molar teeth. *(10 marks)*
- c) List and briefly define the **five (5)** grading system definitions commonly used to grade infundibular caries. *(10 marks)*

End of paper



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Paper 2: Equine Dentistry

Answer all four (4) questions

1. The attending veterinarian at the yearling sales has rung you. A colt has fallen down the loading ramp of a truck and nose-dived into the tarmac and is bleeding from its mouth. The horse has been sedated to calm it. No external wounds appear to be present and no obvious lameness was seen before sedation was given. On lifting the upper lip, the attending veterinarian can see the lip has been lacerated and both upper first incisors appear to be mobile. They are unsure if they can see fractures or not and the sedation, while calming the horse, is not sufficient to allow a thorough examination to be performed.

Answer **all** parts of this question:

- a) Outline appropriate primary care advice that should be given to the referring veterinarian before they send the colt to you for dental assessment and treatment. *(4 marks)*

You have examined the colt, 501 and 601 have sustained fractures just coronal to the gum line and have pulp exposures.

- b) Compare and contrast the different treatment options that should be offered to the owner, including possible sequelae for each option. *(11 marks)*
- c) Describe the performance of a vital pulpotomy, including instruments and dental materials that would be used while performing this procedure. *(15 marks)*

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2. You are called to attend a 22-year-old chestnut Thoroughbred gelding in which the new owner has noticed a loose incisor and fractured canine. On a cursory examination without sedation, you suspect the horse is suffering from equine odontoclastic tooth resorption and hypercementosis (EOTRH) rather than the result of a traumatic event.

Answer **all** parts of this question:

- a) Briefly outline how EOTRH can be confirmed, including any diagnostic modalities used and examination techniques employed. *(10 marks)*
- b) Briefly describe the disease process that occurs with EOTRH. *(5 marks)*

Your examinations reveal that all the incisors and canines are affected by EOTRH.

- c) Identify and compare suitable treatment and management options for this condition. *(15 marks)*
3. You examine a 12-year-old miniature mare with unilateral nasal discharge from the right nostril. On oral examination 108 and 109 appear to be overcrowded with 108 displaced buccally and 109 displaced palatally. You can place a probe 20mm subgingivally on the mesiopalatal aspect of the 109. Radiographs reveal that a fluid line is present in the rostral maxillary sinus, that there is truncation of the mesial roots of 109 and the lamina dura has lost definition in this area. Vertical bone loss is present between 108 and 109. You plan to extract 109 intraorally the following week.

Answer **both** parts of this question:

- a) Discuss the procedure for an intraoral extraction of the first upper maxillary molar. Include in your answer a discussion and justification of any additional treatment and diagnostics that may be required and a brief discussion of potential post-operative complications. *(20 marks)*

On oral examination there was also what appears to be a deep periodontal pocket on the 208/9, but there were no significant radiographic changes on the 200 arcade.

- b) List and briefly discuss the steps for treatment of this lesion, including any aftercare. *(10 marks)*

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4. A reproduction colleague rings you about an 18-year-old grey Arabian mare that she has just scanned as 45 days pregnant but when removing the mare from the stock she noticed a swelling present in the area of the right mandible. She asks you what the differential diagnoses for mandibular masses are.

Answer **both** parts of this question:

- a) List the differential diagnoses for neoplastic masses (dental, bone and soft-tissue origin) and non-neoplastic masses that occur in the mandible of the horse.
(20 marks)
- b) List and briefly discuss treatment options for oral neoplasia in the horse.
(10 marks)

End of paper