



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2021

Avian Medicine and Surgery

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: Avian Medicine and Surgery

Answer all four (4) questions

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

- a) Using an appropriately labelled diagram, describe the anatomy of the avian globe. Note structures unique to the avian globe and describe the function of these structures. (16 marks)
- b) Describe the **three (3)** main orbit shapes that occur in birds, the degree of visual acuity in each orbit shape and identify a species each shape occurs in. (9 marks)
- c) To perform an ocular examination, mydriasis (pupil dilation) is necessary in some species. List **one (1)** method of achieving mydriasis in birds and explain why birds differ from mammals in this regard. (5 marks)

2. A pair of five-year-old Yellow-tailed black cockatoos (*Calyptorhynchus funereus*) is presented to you for a health check. They were purchased one week ago, through an online sales forum. The previous owner had tried to breed from them but had no success. They are to be housed in a large (10 m x 3.8 m x 3.4 m) outdoor mesh aviary.

Answer **all** parts of this question:

- a) List **two (2)** possible causes for the pair's reproductive failure. (2 marks)
- b) The client intends to breed these birds in the future and would like to determine if these birds are fit for this purpose and safe to enter the facility. Describe your approach to evaluating these birds, including any diagnostic modalities you would recommend, justifying how these tests would aid in your assessment. (14 marks)
- c) The birds were found to be fit for breeding. The client asks for your advice on housing. Discuss the principle design features of a nesting area which will suit this breeding pair. Include in your answer: aviary and nest box design and construction, location and set up. (14 marks)

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3. Answer **both** parts of this question for the following diseases:
- Poxvirus infection in passerines.
 - Fowl cholera (*Pasteurellosis*) in a flock of mixed backyard poultry.
- a) Discuss the pathophysiology of **each** condition as it relates to common clinical signs of the disease. (20 marks)
- b) Identify the correct pathological specimen(s) to collect to diagnose **each** condition above, and describe the appropriate test(s) for each specimen, including a brief discussion as to how the results of these tests are interpreted. (10 marks)
4. You are presented with a 12-month-old female laying duck that you suspect has hypocalcaemia.

Answer **all** parts of this question:

- a) Describe the clinical signs of hypocalcaemia in a 12-month-old, female laying duck. (8 marks)
- b) List and justify your top **two (2)** recommendations to confirm your diagnosis of hypocalcaemia. (8 marks)
- c) Provide recommendations to the client regarding the duck's diet, including any immediate therapy and optimal ongoing management. (14 marks)

End of paper



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Paper 2

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Answer **ALL FOUR (4)** questions

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Paper 2: Avian Medicine and Surgery

Answer all four (4) questions

1. A four-year-old Short-billed corella is presented with an intraluminal tracheal mass. The mass is between the larynx and the syrinx and is of soft tissue density on x-ray. All air sacs are radiographically normal. The mass is partially occluding the tracheal lumen and the bird has moderate dyspnoea which is slowly worsening. You are preparing to obtain an endoscopic biopsy of the mass for histopathology, initial in-house cytology, and microbial culture and sensitivity testing, if indicated.

Describe an **ideal** approach to inhalant anaesthesia in this case, including managing the patient during the pre-operative, peri-operative and post-operative periods.

(30 marks)

2. You are presented with a Sulphur-crested cockatoo (*Cacatau galerita*) with a closed, complete, transverse, mid-shaft tibiotarsal fracture.

Answer **all** parts of this question:

- a) Compare and contrast the relative advantages and disadvantages of a conservative and a surgical method of managing this fracture. *(10 marks)*
- b) Discuss the basic principles of fracture repair. *(4 marks)*
- c) Discuss the process by which bone healing occurs. *(4 marks)*
- d) You chose to place an intramedullary pin by an open surgical approach for either a type 2 or a tie-in-fixator. Considering the relevant anatomy, describe your surgical approach and placement of the intramedullary pin for this procedure. *(5 marks)*
- e) List possible adverse post-surgical outcomes. *(5 marks)*
- f) Identify co-morbidities, signalment or other factors that might influence repair choice. *(2 marks)*

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3. You have been presented with a five-year-old Rainbow lorikeet (*Trichoglossus moluccanus*) with an 18-months history of prolific egg-laying. The client reported that she last laid two days ago. The egg produced appears normal, however, there was a one centimetre prolapse protruding from the cloaca. The client attempted to reduce it several times using a moistened cotton bud but it kept coming back out.

Answer **all** parts of this question:

- a) Besides dystocia (egg-binding), list and describe **three (3)** potential causes of cloacal prolapse in parrots. (6 marks)
 - b) Describe an appropriate diagnostic approach to this patient, including the recommended order of any specific diagnostic tests and justification for each diagnostic procedure. (12 marks)
 - c) This patient is diagnosed with dystocia (egg-binding). Discuss appropriate case management. (12 marks)
4. Multiple birds belonging to a client with a large flock of racing pigeons have died in the past three days. You suspect pigeon paramyxovirus or pigeon rotavirus may be responsible for these deaths.

Answer **all** parts to this question:

- a) For each disease, list the most common clinical signs. (6 marks)
- b) Describe an appropriate diagnostic approach to this case. (4 marks)
- c) Discuss management and preventative measures that should be implemented by this client to prevent transmission of viral diseases in their flock. (20 marks)

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