



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2021

Avian Medicine and Surgery

Paper 1

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

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

Answer **ALL SIX (6)** questions

All six (6) questions are of equal value.

Answer **SIX (6)** questions, each worth 30 markstotal 180 marks

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Paper 1: Avian Medicine and Surgery

Answer all six (6) questions.

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

- a) Describe the anatomy and biomechanics of beak movement. *(20 marks)*
- b) Describe the likely biomechanical and anatomical pathology present if a macaw presented with fixed hyperextension of the upper beak. *(6 marks)*
- c) Using your knowledge of anatomy, postulate a theory as to why macaws are particularly predisposed to this pathology. *(4 marks)*

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

- a) Briefly outline the major antioxidants that are important for avian physiology and nutrition. *(15 marks)*
- b) Discuss how dietary deficiencies manifest in birds. For each dietary deficiency indicate the species more commonly affected and the reason why the deficiency arises. Include in your answer the clinicopathological and post-mortem findings associated with the condition. *(15 marks)*

3. Describe the avian haematopoietic system. For each cellular component, include common differential diagnoses of alterations. *(30 marks)*

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4. Answer **both** of the following questions:
- a) Discuss the skeletal modifications of birds that allow for flight. *(10 marks)*
 - b) List **two (2)** examples of avian limb deformities and the likely aetiopathogenesis of each. *(20 marks)*
5. Describe the homeostatic regulation of sodium and water homeostasis in avian species. *(30 marks)*
6. Answer **both** parts of this question:
- a) Discuss the use of antibiotics in chickens, as it pertains to legislative restraints, practical administration, the implications for humans, and animal welfare. *(20 marks)*
 - b) Contrast the treatment of respiratory infection in a hobby farm producing 50 meat chickens at a time, with that of 4 egg laying chickens kept primarily as pets in a backyard. *(10 marks)*

End of paper



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Paper 2: Avian Medicine and Surgery

Answer all six (6) questions.

1. You are presented with a four-year-old female Muscovy duck (*Cairina moschata*), with a distended coelom, secondary to ascites. She has been regularly laying eggs for the past several months.

Answer **all** parts of this question:

- a) List the possible pathophysiological causes that should be considered, with a brief description and potential aetiologies for each. (5 marks)
- b) List the diagnostic work up that should be performed, in order of priority. (5 marks)
- c) Discuss the treatment options for the most likely diagnosis, considering the likelihood of recurrence, prognosis, and consequences. (20 marks)

2. You are presented with an eight-year-old male Blue-fronted Amazon parrot (*Amazona aestiva*), who is biting the owner when the owner's partner is in the room. The bird rarely bites when alone with the owner.

Answer **all** parts of this question:

- a) List what would be included in a diagnostic work-up. (5 marks)
- b) Discuss treatment options and ongoing management of the most likely cause of these signs. (20 marks)
- c) In table form, list the different categories of reinforcers, along with the major benefit or detriment of each. (3 marks)
- d) List the **two (2)** factors that most influence the success of a reinforcer. Why are these two factors pivotal? (2 marks)

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3. A client presents a Rainbow Lorikeet (*Trichoglossus moluccanus*) for missing flight feathers. They tell you that they obtained the bird as a 'stray', when young, and that it did not have wing or tail feathers at that point.

Answer **all** parts of this question:

- a) List the differential diagnoses that should be considered. (3 marks)

Amongst other things, you decide to test for psittacine beak and feather disease (PBFD):

- b) Discuss the diagnostic tests that are available, the samples required and the interpretation of results. (7 marks)

In the event that tests come back positive for PBFD, and the client tells you that they have just purchased a young African grey parrot (*Psittacus erithacus erithacus*):

- c) Discuss your level of concern for the new parrot and justify your answer. (20 marks)

4. You are presented with a six-year-old male Budgerigar (*Melopsittacus undulatus*). The bird has a bacterial crop infection, and you note that this is the third time in 12 months that he has been unwell with the same problem. On your clinical examination, you note that his crop hangs below the level of the thoracic inlet, and is distended with fluid, mucus and food. The bird is in lean body condition but is bright and alert.

Answer **all** parts of this question:

- a) List the differential diagnoses for the recurrence of this problem. (5 marks)

- b) Discuss the diagnostic work up that should be recommended for this case. Justify each test and include the diseases that would be ruled in or out for each. (20 marks)

- c) Briefly describe the specific supportive care that should be offered to this bird. (5 marks)

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5. You diagnose a syringeal aspergilloma in a Pied Currawong (*Stepera graculina*) belonging to a local zoological par.

Answer **both** parts of this question:

- a) List all the drugs that could be considered for use to treat this case, both specific and supportive, and give a brief description of their action. (8 marks)
- b) Describe the best treatment regimen based on current knowledge for this condition. Include in your response the justification, dosing, schedule and metabolism of any drugs. (22 marks)
6. You are contacted by a colleague, who is involved with the collection of eggs from the wild, artificial incubation and then rearing of North Island brown Kiwi (*Apteryx mantelli*) in order to release birds that are large enough to survive predation. Your colleague has noticed declining hatch rates compared to former years. Detail the approach that should be taken to diagnose and manage causes of hatching failure for these birds. (30 marks)

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