Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2016

Avian Medicine

Paper 1

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

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

Answer **ALL <u>SIX (6)</u>** questions

All six questions are of equal value.

Answer **SIX** questions each worth 30 marks.....total 180 marks

Paper 1: Avian Medicine

Answer all six (6) questions

1. Describe in detail the physiological cascade of events that occur in the production and laying of an avian egg. Your answer should include a discussion of environmental and other factors that trigger reproductive drive, the endocrine and other events that result in the development of a follicle, ovulation, egg formation and oviposition. Where appropriate a detailed description of the female reproductive tract, including microscopic anatomy, should be used to demonstrate these events. *(30 marks)*

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

   a) Discuss the principles of analgesia as they apply to the initial management and then surgical repair of a fractured tibiotarsus in a large parrot. Your answer should include details of drugs you would use, including dose rates, route of administration and mode of action. *(15 marks)*

   b) Describe in detail a best practice anaesthetic protocol for an attempted surgical repair of a displaced fractured left coracoid bone that rests alongside the trachea in a large parrot. Details of any pre and post-anaesthetic monitoring and or treatments should also be explained. *(15 marks)*

3. Lead poisoning remains a common problem in wildlife, backyard and companion birds. Describe the short and long term effects of lead on a bird's physiology, relating these effects to the clinical signs seen on presentation. Describe the treatment of a parrot affected with lead poisoning, including supportive care and a description of the drugs that can be used, their dose rate, their mode of action, and the duration of treatment. *(30 marks)*

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

   a) Discuss the value of triglycerides and cholesterol in an avian biochemistry panel. *(10 marks)*

   b) Explain the options and constraints that are currently available for the laboratory diagnosis of impaired or reduced hepatocellular function in avian patients. *(10 marks)*

   c) Outline an approach for assessing the cellular components of peripheral blood smears in birds. *(10 marks)*

5. Describe the anatomy of the pectoral girdle in a flighted bird, including skeletal structures, muscles and tendons, major blood vessels and nerves. *(30 marks)*

6. Use examples to explain the concept of a 'closed aviary', relating how biosecurity principles may affect the design, structure and on-going management of a modern avicultural breeding centre. *(30 marks)*

End of paper

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Paper 2

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

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

Answer **ALL <u>SIX (6)</u>** questions

All six questions are of equal value.

Answer **SIX** questions each worth 30 marks.....total 180 marks

Paper 2: Avian Medicine

Answer all six (6) questions

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

   a) Describe how to prepare for and perform the trans-sinus pinning technique used for the correction of wry (scissor) beak in a three-month-old blue and gold macaw. Include in your answer how long you would expect it to take for the treatment to have an effect. *(10 marks)*

   b) 'Constricted toe' syndrome is a common problem in juvenile parrots, especially macaws, that have been hand-reared. Discuss the current knowledge of its aetiology and describe the preferred treatment regime. *(10 marks)*

   c) List the clinical signs of stunting in a hand-reared chick. Explain how it occurs, how it should be treated, and how to monitor response to that treatment. *(10 marks)*

2. A client complains that her eight-month-old pet blue and gold macaw, has started biting her when she tries to take it out of its cage. Once the bird is out of the cage, it seems to relax and no longer attempts to bite. The bird had been hand-reared, and is the household's only pet. It had been well-behaved up until recently when the owner started a new job, necessitating the bird be confined to the cage during the day.

   Answer **all** parts of this question:

   a) Describe the process by which you would analyse this bird's behaviour. *(10 marks)*

   b) Describe the likely outcome if nothing is done about this behaviour. *(5 marks)*

   c) Discuss the principles of the training that should be recommended to overcome this problem. *(15 marks)*

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3. A flock of backyard poultry is experiencing an outbreak of disease over the last month. Approximately 30% of the birds have developed nodules and sores on the face, combs and wattles. A few birds, have started mouth breathing and appear dysphagic; some of these birds have died. On examination of the mouth-breathing birds you notice severe halitosis and white plaques on the lining of the oropharynx.

   Discuss how you would investigate this problem. In your answer include details of the most likely diagnosis, other possible diagnoses, and your diagnostic approach. For your most likely diagnosis, outline how you would confirm the diagnosis, its transmission and aetiopathogenesis; your treatment; likely outcome; and future prevention. *(30 marks)*

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

   a) You are presented with a 36-year-old female galah for lameness on both legs. On physical examination you find that the bird weighs heavy, at 450 g. There are calluses on the caudal aspect of both tibiotarsal-tarsometatarsus joints. There is limited extension and flexion of these joints, as well as the femoro-tibiotarsal joints. Describe your approach to diagnosing and treating this problem, including short- and long-term management. *(15 marks)*

   b) A canary breeder reports increased mortality in young birds (aged 6–10 months). They become fluffed and lethargic, develop diarrhoea, and die within 3–5 days of first showing clinical signs. Another vet had prescribed doxycycline water medication but a two week course has failed to slow the outbreak. On physical examination you find the affected birds are in good condition or only moderately thin, with the abdomen slightly distended. The caudal margins of the liver are visible caudal to the sternal margins, and the liver is palpably enlarged. Necropsy shows hepatomegaly and splenomegaly, but no other lesions.

      Answer **all** parts of this sub-question:

      i. List the differential diagnoses that should be considered. *(3 marks)*

      ii. The owner is concerned about costs associated with culture and histopathology and can probably only afford one or the other. Discuss what could be done to help decide how best to further investigate this problem. *(2 marks)*

      iii. For the most likely diagnosis, predict the findings you would expect to make. Also include how you would treat this disease and what advice you would give the client. *(10 marks)*

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5. Endoscopy is an important tool for diagnosis and treatment in birds. Discuss patient preparation and describe the diagnostic endoscopic approaches to the avian coelomic cavity. Include in your answer the landmarks used to identify the entry portals, the procedure used to gain entry, and the structures that can be visualised on **each** approach. *(30 marks)*

6. Unicellular protozoa are a common cause of disease in companion and aviary birds. Choose **three (3)** of the most important pathogenic avian protozoal infections of parrots and provide the following:

   a) Preferred sample for diagnostics and key identifying features that can be seen microscopically for **each** of the three you have chosen.
   (5 marks each, total 15 marks)

   b) Preferred treatment, including dose rates, treatment duration, and prophylactic protocols for **each** of the three you have chosen.
   (5 marks each, total 15 marks)

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