



# Australian and New Zealand College of Veterinary Scientists

## Membership Examination

June 2021

### Avian Health (Poultry)

### 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 Health (Poultry)

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## Answer all four (4) questions

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

- a) List **five (5)** structures or features of the skeleton found only in birds. *(10 marks)*
  
- b) Name the following structures:
  - i. formed by the last cervical vertebrae and first three thoracic vertebrae in an adult chicken *(1 mark)*
  
  - ii. consisting of the fused caudal vertebrae and provides attachment for the innermost tail feathers *(1 mark)*
  
  - iii. **three (3)** bones that make up the thoracic girdle of birds. *(3 marks)*
  
- c) Describe the clinical signs, pathogenesis, gross pathology and aetiologies of tibial dyschondroplasia in broiler chickens. *(15 marks)*

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

- a) Name and describe the aetiological agent associated with fowl cholera. *(1 mark)*
  
- b) Identify the **two (2)** poultry species most commonly affected by fowl cholera. *(1 mark)*
  
- c) Describe the pathogenesis, epidemiology, clinical signs and diagnosis for fowl cholera in grower turkeys. *(18 marks)*
  
- d) Outline a treatment and control protocol, including your ethical and legal responsibilities if prescribing S4 antibiotics, for fowl cholera in grower turkeys. *(10 marks)*

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3. Answer **all** parts of this question:
- a) Answer **both** parts of this sub-question: *(10 marks)*
    - i List and describe the components of the avian respiratory system that are unique to birds.
    - ii Briefly discuss the function of **two (2)** of these unique components.
  - b) Compare and contrast the aetiological agents, epidemiology, pathogenesis, clinical signs and post-mortem findings of infectious bronchitis and avian influenza in chickens. *(20 marks)*
4. Compare and contrast the welfare of commercial free range table egg layer hens, barn housed broiler chickens and backyard mixed poultry flocks. Include in your answer any current relevant welfare standards. *(30 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 Health (Poultry)

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**Answer all four (4) questions**

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

- a) Describe the aetiological agent, epidemiology, pathogenesis and likely clinical signs of *Mycoplasma gallisepticum* (MG) infection. (14 marks)
- b) Briefly note the different significance of MG infection in a breeder flock compared to a commercial egg layer flock. (2 marks)
- c) Briefly describe and justify a testing programme for MG in a broiler breeder flock. Your response should include testing intervals, the number of birds to be tested and the test methods to be used. (8 marks)
- d) MG serum agglutination testing (SAT) of 90 out of 10,000 birds in a broiler breeder flock gives a result of 16 positive and 74 negative samples. Describe further steps that should be taken to determine the actual MG status of the flock based on this SAT result. (6 marks)

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2. A commercial table egg layer producer requests your help in controlling ‘mites’ on his chickens.

Answer **all** parts of this question:

- a) Describe the diagnostic steps you would take to determine the problem. *(6 marks)*
  
- b) Name and briefly describe the life cycle and ecology of **one (1)** species of mite (acarid) that may infest chickens. *(6 marks)*
  
- c) Outline treatment options for a confirmed diagnosis of mite infestation. Your answer should include both medication and management practices that could be used and address any legal responsibilities if prescribing off label medication. *(8 marks)*
  
- d) List biosecurity measures that could help with the problem. *(6 marks)*
  
- e) Describe how the treatment and control that you would prescribe can be monitored. *(4 marks)*

3. The manager of a multi-stage broiler hatchery reports a 10% drop in hatchability over the last three weeks in eggs from a 45-week-old breeder flock. Flock mortality, egg production, and feed and water consumption of the broiler breeder flock are within normal limits.

Answer **both** parts of this question:

- a) Describe the steps to be taken to determine the cause of the hatchability drop. *(10 marks)*
  
- b) List the factors that should be evaluated in the investigation, both on farm *(5 marks)* and at the hatchery *(5 marks)*, and briefly explain how each factor affects hatchability. *(10 marks)*

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4. A broiler grower reports birds that are at standard weight at 21 days of age but at 28 days are below standard weight and show poor uniformity. Mortality is not increased. On examination of 28-day-old birds you notice depressed birds, dirty vent feathers and wet litter. Post-mortem examinations show very small bursae, enteritis and dehydration, with lesions of bacterial infections common in immunosuppressed birds. You suspect infectious bursal disease (IBD) infection.

Answer **all** parts of this question:

- a) Name the causative agent of this disease. (2 marks)
- b) List other relevant differential diagnoses for immunosuppression. (3 marks)
- c) Describe how the diagnosis of IBD should be confirmed. (10 marks)
- d) Describe the pathogenesis, epidemiology and control strategies for IBD in a broiler flock. (15 marks)

**End of paper**