



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2016

Avian Health (Poultry)

Paper 1

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

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

Answer **ALL FOUR (4)** questions

Answer **FOUR** questions each worth 30 markstotal 120 marks

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Paper 1: Avian Health (Poultry)

Answer all four (4) questions

1. **Avian digestive system: anatomy and function**

Answer **all** parts of this question:

- a) Describe the gross anatomy of the digestive system of the domestic fowl. *(18 marks)*
- b) Describe the structure and function of the proventriculus. *(4 marks)*
- c) Describe the structure and function of the pancreas in digestion. *(4 marks)*
- d) Describe the structure and function of the caecae in digestion. *(4 marks)*

2. **Avian reproduction**

Answer **all** parts of this question:

- a) Briefly describe the anatomical features *(5 marks)* and function *(6 marks)* of the ovary and oviduct of the domestic fowl.
- b) Briefly describe the anatomical features *(5 marks)* and functions *(4 marks)* of the male reproductive system of the domestic fowl.
- c) Briefly explain how the interaction of light and hormones regulates the cessation of egg laying in chickens. *(6 marks)*
- d) Describe the routes by which microbial contamination of hatching eggs may occur. *(4 marks)*

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3. Vaccination

Answer **all** parts of this question:

- a) Describe the common routes of vaccine administration in commercial chickens. Discuss the advantages and disadvantages for **each** route. (12 marks)
- b) Describe how the effectiveness of drinking water vaccination application and the immunity it provides can be monitored. Ensure both on-farm and laboratory methods are described. (10 marks)
- c) Name the disease for which vaccination is mandatory in all states and territories of Australia. (1 mark)
- d) Provide an example of the:

- route/s
- age/s of administration
- name of the vaccine,

you would use to provide protection against this disease in a broiler flock.

(2 marks)

- e) Provide an example of the:

- route/s
- age/s of administration
- name/s of the vaccine/s,

you would use to provide protection against this disease in commercial laying pullets grown on litter. (3 marks)

- f) Briefly discuss other considerations in the use of this vaccine. (2 marks)

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4. **Diseases: coccidiosis**

Answer **all** parts of this question:

- a) Name **four (4)** pathogenic coccidia of the domestic fowl (*2 marks*) and the part of the intestinal tract in which **each** are found (*2 marks*).
- b) Describe the life cycle of the parasite. You may use a diagram if you wish.
(12 marks)
- c) Disease severity associated with coccidiosis varies depending on host and parasite factors. List **two (2)** host (*2 marks*) and **two (2)** parasite (*2 marks*) factors that influence the severity of the disease expressed in an infected host.
- d) Describe measures to prevent this disease in commercial broilers. Ensure you describe the mode of action and potential side effects of any medications listed.
(6 marks)
- e) Discuss how these measures compare to prevention strategies in commercial layers. (*4 marks*)

End of paper



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Paper 2

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Answer **ALL FOUR (4)** questions

Answer **FOUR** questions each worth 30 markstotal 120 marks

Paper 2: Avian Health (Poultry)

Answer all four (4) questions

1. You have been asked to visit a commercial layer farm with the following history provided by the manager:
- multi age layer facility, 50% free range and 50% caged production
 - in the last four days mortality in the youngest free range shed (10,000 hens at 26 weeks of age) has increased from 1/day to 150/day
 - egg production has dropped from 92% hen day to 60% hen day
 - some birds have been seen with respiratory signs, and occasionally swollen heads.

Answer **all** parts of this question:

- a) List **three (3)** differential diagnoses, including at least **one (1)** notifiable disease. *(3 marks)*
- b) Discuss the approach to confirm the most serious notifiable disease. Include pathological and histopathological examinations, laboratory procedures and other important parts of the investigation. *(24 marks)*
- c) Describe the process for notification of a notifiable disease in your area. *(3 marks)*
2. You have been employed by a broiler integration to review their contract broiler farm biosecurity program.

Answer **both** parts of this question:

- a) List the principal objectives of a broiler farm biosecurity plan. *(4 marks)*
- b) Describe in some detail the biosecurity program you would implement. *(26 marks)*

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3. The incidence of human illness associated with consumption of raw egg products contaminated with *Salmonella typhimurium* in Australia continues to rise.

Answer **all** parts of this question:

- a) Briefly explain the significance of *Salmonella typhimurium* for the commercial egg industry. (4 marks)
- b) Describe **and** justify the on-farm practices you would recommend to reduce the load of this bacterium associated with eggs. (12 marks)
- c) List the procedures to be implemented in an egg grading facility to reduce/eliminate the contamination of whole shell eggs with *Salmonella typhimurium*. (14 marks)

4. Australia and New Zealand poultry industries have agreed on guidelines for the use of antibiotics in poultry.

Answer **all** parts of this question:

- a) List the **two (2)** main responsibilities of veterinarians who supply a prescription animal remedy (schedule four) antibiotic within the poultry industry. (2 marks)
- b) Discuss **both** of these responsibilities. (12 marks)
- c) Discuss in some detail conditions under which an unregistered antibiotic product can be used (off-label) for poultry. (16 marks)

End of paper