



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2021

Veterinary Public Health

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: Veterinary Public Health

Answer all four (4) questions

1. African swine fever (ASF) has recently (since August 2018) spread in Asia and in Europe and has threatened pig production on these continents.

Answer **all** parts of this question:

- a) Discuss the epidemiology and typical clinical features of ASF and provide **three (3)** important differential diagnoses you would consider for ASF. *(10 marks)*

- b) List the risk factors for introduction of ASF into either Australia or New Zealand. *(5 marks)*

- c) Describe and discuss control options, with emphasis on critical control points in detecting, combatting and/or eliminating the ASF. In your answer discuss measures currently in place to control ASF in Europe, Asia and South East Asia, and compare these to control measures currently in place in Australia or New Zealand, and how these may be improved. *(10 marks)*

- d) Currently, there is no suggestion that ASF is zoonotic in nature. Discuss how control options for ASF would differ if the disease was zoonotic. *(5 marks)*

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2. A novel human coronavirus (SARS-CoV-2) was reported in December 2019 in mainland Wuhan, China. The first cases are thought to have contracted the infection when attending a local wet market.

Answer **all** parts of this question:

- a) Give **five (5)** reasons why SARS-CoV-2 is important from a veterinary public health perspective. (5 marks)

- b) Briefly discuss and critically appraise the public health measures of hotel quarantine and lockdowns instituted in Australia/New Zealand and compare them to veterinary quarantine arrangements, using suitable veterinary examples. (15 marks)

- c) Vaccines are now available to prevent COVID-19 disease and Australia/New Zealand have developed priority vaccination lists. Critically appraise this vaccination strategy as a means of **controlling** COVID-19 disease, drawing parallels with relevant veterinary diseases where vaccination is used as a means of **controlling** disease. (10 marks)

3. Hendra virus is sporadically reported in the Eastern seaboard states of Australia.

Answer **all** parts of this question:

- a) Discuss the epidemiology of Hendra virus and its importance in the veterinary public health context. (10 marks)

- b) Discuss the recommended Hendra virus vaccine protocol and its use from a public health perspective. (10 marks)

- c) One of your clients has recently attended a horse event in Toowoomba (QLD) with a couple of her horses and has returned to Victoria after a few days' drive. She has noticed that one of the travelling horses is a bit dull, with its head down, but she put this down to the effects of the journey. Now, after a couple of days being back home, the horse still seems to be a bit 'off-colour'.
Discuss your approach to the investigation and management of this case. (10 marks)

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4. Hydatid disease is a serious public health concern in several countries around the world, including parts of Australia.

Answer **all** parts of this question:

- a) Describe the life cycle of the parasite, *Echinococcus granulosus*. (5 marks)
- b) Describe the main features of the programmes that led to eradication of hydatid disease in Tasmania and New Zealand. (10 marks)
- c) If you were designing an eradication programme in a country where echinococcosis was endemic, describe any additional tools available now that you would wish to include. (5 marks)
- d) Hydatid disease is still endemic in parts of mainland Australia. Discuss why this is the case, including what the key epidemiological features are that prevent eradication currently, and what could be done to assist in controlling or eradicating the parasite. (10 marks)

End of paper



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Paper 2

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

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

Answer **ALL FOUR (4)** questions

Only Elective A is included in this paper

Elective A: Answer **FOUR** questions, each worth 30 markstotal 120 marks

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Paper 2: Veterinary Public Health

Elective A: Answer all four (4) questions Only Elective A has been included in this paper

1. The process of meat inspection at the abattoirs is usually differentiated in ante and post-mortem inspection.

Critically discuss the intent and value of each of the following procedures. Your answer should consider both the benefits and limitations of each approach:

- a) ante-mortem inspection to public health (10 marks)
- b) post-mortem to public health (10 marks)
- c) a combination of ante- and post-mortem inspection to veterinary disease surveillance, using **three (3)** relevant examples. (10 marks)

2. Meat adulteration/substitution scandals have periodically plagued the meat industry.

Answer **all** parts of this question:

- a) Briefly describe recent examples of meat adulteration/substitution. (5 marks)
- a) Critically discuss the food safety and other issues pertaining to the problem. (10 marks)
- b) Describe the system(s) and technology available to manage meat species verification. (15 marks)

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3. Answer **both** parts of this question:
- a) Answer all sub-questions below, relating to the preservation of uncooked fermented meat (UCFM):
 - i. Identify processes that allow the preservation of UCFM, and list variables that must be considered in the production of fermented meats. (5 marks)
 - ii. *E. coli* is a hazard typically associated with these products. Identify other pathogens of concern during preservation of UCFM. (10 marks)
 - iii. With reference to *E. coli*, describe critical control point(s) and associated critical limit(s) that are important in this process. (5 marks)
 - b) Describe 'field dressing' in the context of harvesting marsupials for human consumption and identify key considerations in the process. (10 marks)
4. Discuss the perceived benefits and challenges associated with 'cultured' or 'clean' meat. Your response should include the main regulatory challenges presented by synthetically produced meats. (30 marks)

End of Elective A

End of Paper