



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2021

Pig Health and Production

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: Pig Health and Production

Answer all four (4) questions

1. The COVID 19 pandemic has created a number of current and potential issues for pig industries in Australia and New Zealand. Describe the key issues arising and discuss how farmers and the larger industry are dealing with them. *(30 marks)*

2. You have been called to a 1200 sow ‘traditional’ (indoor) birth-to-bacon pig farm to offer advice on improving productivity. The farm was originally designed to flow pig movement all-in all-out by airspace/room, but currently runs as a continuous-flow system. The owner weans 22 pigs/sow/year but only sells 16 pigs/sow/year. The average age of pigs sold is 26 weeks at 90 kilogram liveweight.

Answer **all** parts of this question:

- a) Briefly discuss limitations that might affect farms that maintain batch farrowing and identify risk factors that should be investigated when a farm’s batch farrowing system fails. *(10 marks)*

- b) Infectious respiratory and enteric diseases may adversely affect production. Briefly outline steps that should be taken to identify infectious agents that might limit production in this way. Your answer should include salient examples of specific pathogens. *(10 marks)*

- c) Identify productivity deficits on this farm relative to expected industry standards and, discuss how the most limiting deficit should be addressed. *(10 marks)*

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3. Answer **both** parts of this question:
- a) Describe how the regular inspection of pig carcasses and viscera during processing ('abattoir monitoring') can assist veterinarians develop herd health programs for their clients. *(20 marks)*
 - b) Explain the potential limitations of abattoir monitoring in terms of the sensitivity and specificity of disease diagnosis. *(10 marks)*
4. Summarise the constraints on the use of antimicrobial medications in pigs on farms in Australia or New Zealand in relation to either the Australian Strategic and Technical Advisory Group (ASTAG) or World Health Organisation (WHO) antimicrobial resistance importance ranking. Your response should identify any implications for veterinary clinicians prescribing medications for pigs. *(30 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

Question 2 requires answering in your provided answer booklet

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

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Paper 2: Pig Health and Production

Answer all four (4) questions

1. Summarise the central elements involved in the development of multi-resistant pathogens on a pig farm and how, in the longer term, you might overcome this dilemma. (30 marks)

2. The pork industries in Australia and New Zealand are serviced by a relatively small number of abattoirs. Farms have a limited capacity to retain market-aged pigs. As a result, large-scale depopulation of pigs on-farm may be needed during an emergency animal disease response.

Using the table provided in the answer booklet as a guide, describe the possible destruction methods that are available in this situation. In your answer, include the advantages and disadvantages of each method, welfare considerations and any potential hazards. (30 marks)

3. African swine fever (ASF) is an important transboundary disease of pigs that is currently exotic to Australia and New Zealand. A pandemic of the disease since 2007 has resulted in widespread infection of countries in Europe, Asia, and recently Oceania (East Timor, Papua New Guinea, and other countries in the region).

Answer **all** parts of this question:

- a) In the current pandemic, identify and briefly discuss the most significant transmission pathways for the virus that have resulted in new outbreak foci occurring over a very long distance (>500 km) from other known outbreak areas. (10 marks)

- b) Using either Australia or New Zealand as a framework, describe the steps a veterinarian is obliged to undertake if they suspect a diagnosis of ASF during a routine farm visit. (10 marks)

- c) Discuss aspects of the Australian or New Zealand pork industries (commercial and non-commercial) and rural culture that may contribute to further risk of ASF spread once the initial incursion has occurred. (10 marks)

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

- a) 'Swiss' and 'total' depopulation strategies are two methods of pathogen eradication in pig herds. Compare and contrast the two methods, including the advantages and disadvantages of each method. *(10 marks)*
- b) Prepare an outline for a 'Swiss depopulation' program for a 500-sow farrow-to-finish herd that has a problem with swine dysentery and respiratory disease complex. *(20 marks)*

End of paper