



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2015

Medicine of Dairy Cattle

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: Medicine of Dairy Cattle

Answer all four (4) questions

1. Discuss the antimicrobial therapy of bronchopneumonia in dairy calves. Include within your discussion: target pathogens, mechanisms of drug action, drug distribution, efficacy, and safety. *(30 marks)*

2. Urine pH is an important physical examination finding.

Answer **all** parts of this question:

- a) What is the normal urine pH of lactating dairy cows? Explain the reason(s) why normal urine has this pH. *(2 marks)*

 - b) During the physical examination of a sick cow that is 14 days in milk, the urine pH is 6. Discuss how this finding would influence your patient management. *(10 marks)*

 - c) Explain how urinary pH monitoring is utilised in management of the transition period. In your answer include: the physiology, timing of sampling, target levels, and potential limitations of this approach. *(18 marks)*
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3. Discuss metritis including pathophysiology, clinical features, risk factors, treatment and key preventive strategies. In your discussion of treatments include a critical appraisal of the treatment options. *(30 marks)*

 4. Discuss the pathophysiology of vagal indigestion and the physical examination findings and diagnostic tests that are helpful in clarifying the aetiology. *(30 marks)*

End of paper



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Paper 2: Medicine of Dairy Cattle

Answer all four (4) questions

1. A mob of 50 six-month-old Holstein-Friesian heifers are presented for a problem with scours. The heifers are grazing rye grass pasture and also have access to pellets. One week prior to presentation the mob had been drenched with a pour on ivermectin; two days prior to presentation a new batch of pellets had been fed. Ten of the 50 calves are presented as 'sick'. Significant findings on physical examination included profuse diarrhoea (10/10), corneal ulcers (3/10), fever (8/10), and severe dehydration (2/10).

Answer **all** parts of this question:

- a) List differential diagnoses and prioritised diagnostic tests. *(5 marks)*
- b) Discuss your initial therapeutic plan for the 'sick' calves pending confirmation of your diagnosis. In this discussion include details regarding the results of preliminary cow side diagnostics which would influence your therapeutic plan. *(15 marks)*
- c) Discuss the options and considerations for management of the two dehydrated heifers, including details regarding the composition, volume, and route of administration of fluid therapy. *(10 marks)*
2. A client requests you pregnancy test their heifers. Of the 283 heifers, 56% (158/283) were not pregnant. The heifers were bull bred for 6 weeks using eight 18-month-old maiden bulls. The bulls were removed 70 days prior to presentation. The heifers are well grown and in very good body condition. Preceding and during the breeding period your client reports the heifers were grazing lush clover. The heifers have been vaccinated against pestivirus and leptospirosis. The bulls were vaccinated against pestivirus, leptospirosis, and vibrio. Both bulls and heifers were administered a selenium supplement 6 weeks prior to joining.

Describe how you would investigate the breeding outcome on this farm **and** recommendations you would make to prevent a future occurrence of this scenario. *(30 marks)*

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3. A client with a year round calving herd seeks your assistance during a pinkeye outbreak. Affected heifers range from 6 weeks to 6 months of age, with 1,000 calves at risk. Currently 35% of calves are affected. The farm has found this to be a recurring seasonal problem and would like to implement a holistic approach to prevent and mitigate the cost of this disease.

Discuss risk factors, prevention and treatment options to address this problem.

(30 marks)

4. A client, who owns a 600 cow seasonal dairy, rings you to ask for some antibiotics to treat a few dry cows which have developed mastitis. After further discussion, the farmer said that his workers dried off a mob of 150 dairy cows 7 days ago using a combination of teat-seal and a cloxacillin dry cow product. Ten of the cows have developed mastitis in a single quarter.

Discuss this scenario describing the most likely pathogens involved, how to manage affected cows **and** draft a farm plan to minimise the risk of dry cow mastitis.

(30 marks)

End of paper