Australian College of Veterinary Scientists

Membership Examination

June 2011

Medicine of Dairy Cattle

Paper 1

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

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

Answer your choice of any **FOUR (4)** questions from the five questions **ONLY**
All five main questions are of equal value

Answer **FOUR** questions each worth 25 marks ..... total 100 marks

Paper 1: Medicine of Dairy Cattle

Answer your choice of any FOUR (4) questions from the five questions ONLY

1. Describe the clinical signs typically observed with **four (4)** of the following: *(6¼ marks each)*

   a) anaplasmosis
   b) severe abomasal ulceration
   c) digital dermatitis
   d) enzootic haematuria
   e) polioencephalomalacia

2. Describe **five (5)** clinical signs that can be associated with liver dysfunction and explain the pathophysiological basis for the development of these signs. *(25 marks)*

3. Discuss the risk factors associated with **four (4)** of the following: *(6¼ marks each)*

   a) white line disease
   b) salmonellosis
   c) subacute ruminal acidosis
   d) hypocalcaemia
   e) mastitis caused by *Streptococcus uberis.*

4. Discuss the pathogenesis of **three (3)** of the following conditions: *(8⅓ marks each)*

   a) fat cow syndrome
   b) caudal vena caval syndrome
   c) chronic copper toxicity
   d) infectious bovine keratoconjunctivitis.

Examination continued on next page

5. Treatment of mastitis (clinical or subclinical) during lactation is frequently not successful. Recurrence of clinical mastitis or persistence of cell count elevation following antibiotic therapy during lactation, occur commonly. Discuss possible reasons for such apparent treatment failure. *(25 marks)*

End of paper

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Paper 2

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

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Answer your choice of any **FOUR (4)** questions from the five questions **ONLY**
All five main questions are of equal value

Answer **FOUR** questions each worth 25 marks ..... total 100 marks

Paper 2: Medicine of Dairy Cattle

Answer your choice of FOUR (4) questions from the five questions ONLY.

1. A client asks you to investigate a milk quality issue on farm. The farmer's presenting problem is: a BMCC of 450,000 (rolling average) over the last four months and nine clinical cases per 100 cows per month for the same period. The herd is now six months past calving start date and is a seasonal calving herd. Of the total herd size of 350 cows, 20 remain in the transition group and have yet to calve. The herd has had two positive milk culture results for *Streptococcus agalactiae*, originating from clinical mastitis cases, in the past six weeks. Outline your approach to this investigation detailing the rationale behind the steps taken. *(25 marks)*

2. A group of two beef farmers and one sheep farmer plan on consolidating their adjoining properties and converting the combined enterprise to a 1200 cow dairy business. For the first twenty-four months all calves are to be reared off site after purchasing from third parties as newborns. Calves will not be brought onto the combined property until twelve months of age. 900 adult cattle will be purchased for the initial milking herd and naturally replaced over the ensuing eight years. They have asked you to prepare a biosecurity and disease prevention plan for this new farming venture which is due to commence in the following twelve months. This plan could potentially cover various farm management areas including animal health, new animal introduction and feeding.

   Outline our approach to this task along with your key recommendations to the group which will form the basis of their plan. *(25 marks)*

3. A split calving herd of 450 cows has two eight-week duration calving periods starting on 1 February and 1 June. The corresponding mating periods are also eight weeks each – five weeks of AI and three weeks of natural bull matings. The herd owner has employed a split calving system for five years after converting from a seasonal system. No synchronisation is currently employed although it has been in previous years. The herd owner has taken on three new staff members in the past 18 months.

   The herd owner asks you to develop a reproductive plan for the herd to address the relatively low conception rate to AI (36% first service conception rate on average for each joining period) and the higher than desired number of animals found to be not-in-calf at the end of each joining period (around 28%). The not-in-calf animals are being carried over into the next mating group. The owner is prepared for you to address all management areas in your plan. Describe your reproductive plan for this herd. *(25 marks)*

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4. You are called to a nearby 240 cow farm where seven milking cows have died in the last fifty minutes approximately. It is summer and the farmer has, for the third week in a row, allowed his milkers to strip graze a standing crop of rape for the first part of the morning grazing rotation. When you arrive on farm there are three dead cows in the rape, and four dead in the adjacent pasture paddock to where the alarmed farmer has now shifted the cows. As you drive into the paddock you can see nine cows sitting down and five lying on their side.

   Outline your differential diagnoses for this scenario and provide a brief description of the pathogenesis of those differentials. Your answer should also include treatment options for each of your differential diagnoses and a plan for cow management in the following week to prevent a reoccurrence of this scenario. *(25 marks)*

5. A Jersey herd owner is using a converted shearing shed on his property as a calf rearing facility. All of the original wooden sheep pens are in place and the floor of the shed is raised off the ground allowing for drafts. None of the side walls have been removed since the conversion to a calf rearing facility. Calves are brought into the shed at forty-eight hours after removal from their dams. The farmer indicates that he feeds all calves some "colostrum which is kept from the second or third milking" when they are introduced to the shed.

   You have been called to assist with reducing the calf mortality in this system. Currently the farmer has calves from two-days-old to eight-weeks-old in the shed (48 in total) but he reports 14 have died in the past four weeks. He also reports that all of the calf pens with animals under four weeks of age have one or more scouring animals.

   Outline your approach to this investigation and the differential diagnoses possible. Your answer should include an outline of how each differential would be assessed and your approach to the examination of the physical surroundings in which the calves are being reared. *(25 marks)*

End of paper