



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2012

Equine Medicine

Paper 1

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer **ALL EIGHT (8)** questions

All questions are of equal value

Answer **EIGHT** questions each worth 15 markstotal 120 marks

Paper 1: Equine Medicine

Answer ALL eight (8) questions

1. Answer **both** subparts of this question.
 - a) Define *disseminated intravascular coagulation (DIC)* and discuss its pathogenesis. (8 marks)
 - b) Give a clinical example of when DIC may be encountered in equine medicine and describe how you would treat an affected horse. (7 marks)

2. Equine metabolic syndrome (EMS) is increasingly being recognised as an important disease in horses under modern management conditions. Discuss the relationship between insulin resistance, obesity, endogenous cortisol, adipokines and inflammation in horses and explain how they lead to the clinical manifestations of EMS. (15 marks)

3. Answer **both** subparts of this question.
 - a) Describe in detail the pathogenesis of *transport-associated pleuropneumonia*. (12 marks)
 - b) List the bacteria most likely to be present in cases of this disease. (3 marks)

4. For **each of the following pathogens**, describe the disease syndrome(s) that occur in horses. Include in your answer significant features of epidemiology, pathogenesis, diagnostic tests, treatment and prevention:
 - a) *Lawsonia intracellularis*. (8 marks)
 - b) *Leptospira spp.* (7 marks)

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5. During the late summer and autumn of 2011, large numbers of horses with unusual muscular and neurological symptoms were reported predominantly across the south east of Australia.
- a) Briefly describe the clinical syndromes that occurred. (5 marks)
 - b) Briefly describe the epidemiological features of the disease. (5 marks)
 - c) Briefly discuss how further outbreaks of this disease could be prevented. (5 marks)
6. Hypoxic–ischaemic syndrome (HIS) is one of the most common disorders affecting equine neonates.
- a) Describe in detail the pathophysiology of HIS. (10 marks)
 - b) List the clinical manifestations of this disease in foals. (5 marks)
7. The anterior gastrointestinal tract can become dysfunctional in horses. Describe in detail the pathogenesis of **each** of the following two conditions:
- a) Post-operative ileus. (8 marks)
 - b) Grass sickness (dysautonomia). (7 marks)
8. Domperidone has a broad range of uses in equine medicine. List the indications for its use in the horse and for each indication describe in detail the mechanism of action of this drug. (15 marks)

End of paper



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Paper 2

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer **ALL EIGHT (8)** questions

All questions are of equal value

Answer **EIGHT** questions each worth 15 markstotal 120 marks

Paper 2: Equine Medicine

Answer ALL eight (8) questions

1. Describe in detail a biosecurity plan for horses and personnel situated on a Thoroughbred (TB) stud in SE Queensland to minimise risk of Hendra virus infection. *(15 marks)*

2. The treatment of some equine diseases requires specific nutritional management. For the following disorders, list specific nutritional measures you would institute and briefly explain the rationale for your recommendations:
 - a) Miniature pony with hyperlipaemia. *(4 marks)*

 - b) TB mare following small intestinal resection and anastomosis. *(4 marks)*

 - c) Three-day-old foal with diarrhoea. *(3 marks)*

 - d) 13-year-old eventing horse with right dorsal colitis. *(4 marks)*

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3. A 10-year-old TB broodmare is referred to you after having been attacked by a swarm of bees 24 hours ago sustaining hundreds of stings principally to her head and neck. Early symptoms of mild urticaria and discomfort failed to respond to treatment with dexamethasone and antihistamine by the referring vet. The mare has diffuse severe swelling of the muzzle and neck as well as diffuse urticaria. Her mucous membranes are dark pink with a refill time of 3 sec. Her heart rate is 80bpm and her pulse is weak. She has not passed faeces overnight. She has passed a small amount of dark red/brown urine. She is dull and depressed, but intermittently displays bouts of severe pain and agitation. The following haematological and blood biochemical data are provided. All values not listed are within the normal range.

- a) Briefly interpret the laboratory abnormalities present. (5 marks)
- b) Describe in detail how you would evaluate and treat this case. (10 marks)

| Parameter | Value | Normal Range (adult) |
|----------------------------------|-------|----------------------|
| *Plasma discoloured red | | |
| Haematocrit (L/L) | 0.58 | 0.32 – 0.46 |
| Platelets (x 10 ⁹ /L) | 68 | 90 - 350 |
| Total plasma protein (g/L) | 65 | 55 - 75 |
| Creatine kinase (U/L) | 8,000 | 0 - 380 |
| Blood urea nitrogen (mmol/L) | 13.6 | 3.9 – 10.2 |
| Creatinine (mmol/L) | 210 | 56 - 149 |
| AST (U/L) | 4,000 | 0 - 340 |
| Total Bilirubin (umol/L) | 109 | 0 - 36 |
| Lactate (mmol/L) | 7.4 | 0.5 – 1.8 |

4. Describe in detail the post-operative monitoring and management of a valuable, insured broodmare recovering from surgical correction of a 360 degree torsion of the large colon.
- a) List the clinical signs that you would be monitoring. (5 marks)
- b) Describe how you would assess the mare's recovery from surgery using ancillary aids, assuming that you are working in a well-equipped hospital with a laboratory. (10 marks).

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5. Lower airway inflammation is an important cause of respiratory disease and poor performance in horses. Describe in detail, your approach to the diagnostic assessment and treatment of lower airway inflammation in Thoroughbred racehorses. (15 marks)
6. The implementation of a screening program to detect infection with *Rhodococcus equi* in young foals is one strategy to reduce the prevalence of clinical disease and mortality on equine farms.
- a) Discuss the rationale for implementing a screening program to control *R equi* infection on an equine farm with endemic disease. (10 marks)
 - b) Briefly describe the diagnostic screening tests available to permit early detection of *R equi* associated infection. (5 marks)
7. Describe in detail, strategies to reduce the risk of pasture-associated laminitis in susceptible ponies and briefly explain the rationale that supports these management recommendations. (15 marks)
8. Antibiotic-associated enterocolitis is a potential adverse effect of systemic antimicrobial treatment in horses.
- a) List antibiotics that are most likely to cause enterocolitis in the horse. (5 marks)
 - b) Briefly discuss the mechanisms by which enterocolitis develops as an adverse reaction to antimicrobial therapy in the horse. (5 marks)
 - c) Briefly discuss when antimicrobial therapy is indicated in the management of enterocolitis in the horse. (5 marks)

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