



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2014

Veterinary Pharmacology

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 Pharmacology

Answer all four (4) questions

1. Compare fipronil to the avermectins using the following criteria:
 - a) Mechanism of action. (14 marks)
 - b) Route of administration to the host. (3 marks)
 - c) Distribution in the host. (10 marks)
 - d) Absorption into the parasite. (3 marks)

2. Define the following terms **and** discuss the usage of these terms in pharmacology:
 - a) Volume of distribution. (8 marks)
 - b) Half-life. (7 marks)
 - c) Clearance. (7 marks)
 - d) Steady state. (8 marks)

3. Discuss the coxib class of nonsteroidal anti-inflammatory drugs (NSAIDs) with respect to potential toxicities and contraindications. (30 marks)

4. Short-term high-dose antibiotic therapy is being recommended as a means of limiting the development of antibiotic resistance. Discuss the theory of why it may reduce the risk of resistance. Include in your answer the types of antibiotics concerned. (30 marks)

End of paper



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Paper 2: Veterinary Pharmacology

Answer all four (4) questions

1. You are asked to advise on *Staphylococcus aureus* mastitis in dairy cattle. Taking into account the nature of the disease and the micro-organism, discuss the chemo-therapeutic options and factors that can influence the success of therapy. (30 marks)

2. A local reporter, using internet research, claims that veterinarians are vaccinating dogs too often for monetary reasons and quotes 'research' that proves nosodes (homeopathic vaccines) are working just as well. Formulate a reply, based on science, taking into account:
 - a) the frequency of dosing of both viral and bacterial vaccines recommended in canine practice (20 marks)

and

 - b) the perceived efficacy of nosodes. (10marks)

3. Answer **both** parts of this question:
 - a) Explain the physiology of acid secretion in the canine stomach. (10 marks)

 - b) Discuss the options available to treat stomach ulcers in the dog, with reference to the physiology of acid secretion in the canine, **and** the mechanisms of action of anti-ulcer medications. (20 marks)

4. An overseas company has developed a NSAID tablet for dogs featuring a novel active ingredient. You are asked to outline the requirements for registration in your country, i.e. either Australian Pesticides and Veterinary Medicines Authority (APVMA) or Agricultural Chemicals and Veterinary Medicines Group (ACVMG).
Outline the basic information, including the data volumes (also known as dossiers or data packages), that must be supplied to support this application for registration. (30 marks)

End of paper