

Australian College of Veterinary Scientists

Membership Examination

June 2011

Medicine of Zoo Animals

Paper 1

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

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

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

All six main questions are of equal value

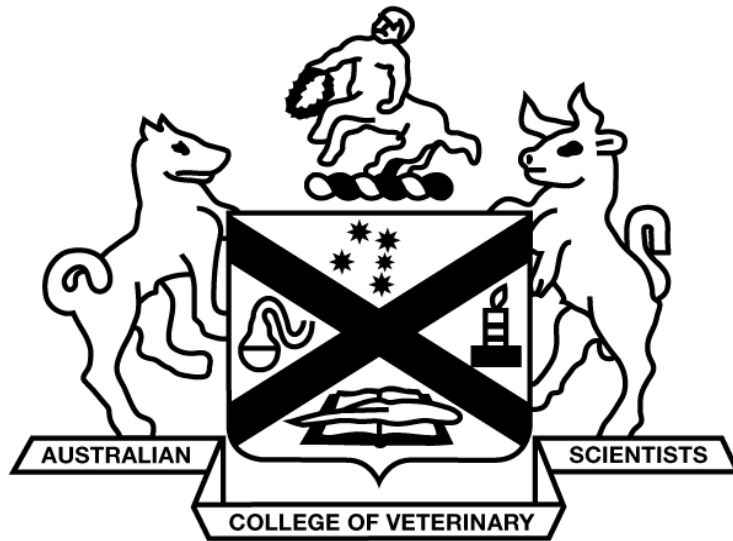
Answer **FOUR** questions each worth 25 markstotal 100 marks

Paper 1: Medicine of Zoo Animals

Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**.

1. Wild and feral animals are frequently found within zoos. Discuss the protocols that you, as the zoo's veterinarian, would use to prevent diseases carried by these animals affecting the zoological collection. Illustrate your answer with disease prevention protocols for **three (3)** different diseases. Include in your answer discussion of wild, feral, and zoo animals that could be affected by these diseases. (25 marks)
2. Administration of medication to zoo animals can be challenging. Discuss the advantages and disadvantages of the various methods by which medications may be delivered to captive animals. (25 marks)
3. Discuss the role of the zoo veterinarian on a recovery team for an endangered species which has a breed-for-release program. (25 marks)
4. Discuss the available options for achieving contraception in zoo animals. Include in your answer pharmacological, surgical and physical means for achieving contraception and discuss the relative merits of **each**. (25 marks)
5. Compare and contrast the major anatomical and physiological differences between the reproductive systems of eutherian mammals, marsupials and reptiles. (25 marks)
6. Discuss the development and implementation of a zoonotic disease prevention program in an Australian zoo. Select **three (3)** zoonotic diseases associated with captive, non-domestic animals and discuss their epidemiology and the development of an appropriate preventative medicine program. Include in your answer testing protocols for both staff and animals, and husbandry factors that can minimise the potential risk of transmission of zoonotic disease. (25 marks)

End of paper



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Paper 2

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

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

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

All six main questions are of equal value

In some questions you must choose which subparts to answer

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

Paper 2: Medicine of Zoo Animals

Answer your choice of any **FOUR (4)** questions from the six questions **ONLY**.

1. Write short notes on **four (4)** of the following: *(6¼ marks each)*
 - a) diagnosis and prevention of inclusion body disease in snakes
 - b) diagnosis of ophidian paramyxovirus in snakes
 - c) clinical signs, diagnosis and prevention of adenovirus infection in bearded dragons
 - d) management of chytridiomycosis in a captive population of endangered frogs destined for release to the wild
 - e) management of shell fractures in freshwater turtles
 - f) safe and effective chemical restraint of crocodylians.

2. Write short notes on **four (4)** of the following: *(6¼ marks each)*
 - a) clinical signs, pathology and species affected by columbid herpesvirus
 - b) causes, treatment and prevention of bumblefoot in birds
 - c) management options for a closed, mid-shaft, humeral fracture in a peregrine falcon
 - d) anaesthesia and sedation of captive ratites
 - e) options for treatment and prevention of aspergillosis; plus the bird species most commonly affected
 - f) three common diseases of Australian birds in the order *Caprimulgiformes*; include clinical signs, pathology and treatment.

Examination continued on next page

3. A zoo maintains a mixed group of hoofstock consisting of eland, zebras, giraffes and wildebeest in a large free ranging enclosure with adjacent yards.

Describe your approach to the investigation, treatment and implementation of a disease prevention program following an outbreak of diarrhoea in the eland. Include in your answer a list of differential diagnoses and the appropriate treatment for each diagnosis. (25 marks)

4. Write short notes on **four (4)** of the following: (6¼ marks each)
- a) methods of tracking reproductive cycles in captive female elephants
 - b) myelopathy in cheetah
 - c) epidemiology, clinical signs and diagnosis of orbivirus in macropods
 - d) anaesthesia of tragelaphine antelope
 - e) diagnosis and prevention of malignant catarrhal fever in captive artiodactyls
 - f) the zoonotic significance of herpes B virus infection in a captive colony of macaques.
5. Select **three (3)** of the following animals and design a comprehensive protocol for annual health examinations. These protocols should include the preferred anaesthetic regime, routine health checks, sample collection and testing, animal management considerations and preventative health measures. (8½ marks each)
- a) southern hairy-nosed wombat
 - b) green tree frog
 - c) male Asian elephant
 - d) diamond python housed in the zoo's education department
 - e) green wing macaw.

Examination continued on next page

6. Outline your approach to developing a plan for responding to an incursion of **one (1)** of the following emergency diseases in the area immediately adjacent to your zoo.

Your answer should include reference to the relevant authorities and legislation that would be considered in developing your plan and any biosecurity measures that your zoo could implement to reduce the risks:

(25 marks)

- a) west nile virus
- b) equine influenza
- c) foot and mouth disease.

End of paper