



# Australian and New Zealand College of Veterinary Scientists

## Fellowship Examination

June 2013

## Veterinary Anatomical Pathology Paper 1

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

Time allowed: **Three (3)** hours after perusal

**Section A:** Answer **ALL THREE (3)** Questions

**Section B:** Answer **ALL FOUR (4)** Questions

**Section C:** Answer **ALL SIX (6)** Questions

Section A: Answer ALL **THREE** questions each worth 20 marks..... total 60 marks

Section B: Answer ALL **FOUR** questions each worth 15 marks..... total 60 marks

Section C: Answer ALL **SIX** questions each worth 10 marks ..... total 60 marks

# Paper 1: Veterinary Anatomical Pathology

---

## Section A: Answer all three (3) questions

1. Tolerance to self-antigens is a critical aspect of the immune system.
  - a) Outline the development of immunological tolerance. (15 marks)
  - b) Using **one (1)** example, illustrate the pathophysiology of defective immunological tolerance. (5 marks)
  
2. Answer **both** parts of this question:
  - a) Describe the process of neutrophilic recruitment from the circulation into inflamed tissues, including key mediators of cell interactions. (15 marks)
  - b) Name **one (1)** syndrome of impaired neutrophilic migration and describe the associated histopathological findings. (5 marks)
  
3. Endogenous pigments impart colour to tissues in both physiological and pathological states. Write short notes on the production, occurrence, gross and histological (H&E) appearance in both physiological and pathological states of:
  - a) melanin (10 marks)
  - and**
  - b) bile (10 marks)

**Continued over page**

**Section B: Answer all four (4) questions**

1. Answer **both** parts of this question:
  - a) Define the concept of ‘pattern recognition’ as applied to diagnostic histopathology. (3 marks)
  - b) Briefly describe the application of pattern recognition using **three (3)** specific disease examples from a single organ. (12 marks)
2. Describe in detail the induction and control of angiogenesis in tissue repair, including mention of significant mediators. (15 marks)
3. List the general functional classes of cytokines and outline the actions of each, using examples to illustrate their functions. (15 marks)
4. Describe the roles of the following in both normal physiology and neoplasia:
  - a) p53 (7.5 marks)

**and**

  - b) telomeres. (7.5 marks)

**Continued over page**

### Section C: Answer all six (6) questions

1. Describe the homeostatic compensation mechanisms enlisted during acid-base disturbances. (10 marks)
2. Using a diagram, construct a key for the differentiation between **each** class of adult metazoan parasites in histological sections (note only **one (1)** differentiating characteristic is required at **each** decision point). (10 marks)
3. Outline the rationale for neoplasia grading systems (4 marks). Describe **one (1)** example of their practical use, including **three (3)** characteristics used in differentiating grades within the specified example. (6 marks)
4. Describe the role of the Bcl protein family (4 marks), including specific examples of Bcl proteins and their actions. (6 marks)
5. Describe **two (2)** pathogeneses of retrovirally-induced neoplasia (8 marks), giving **one (1)** example of a virus exemplifying **each** pathogenesis. (2 marks)
6. Define congenital intrinsic and extrinsic platelet disorders (4 marks). Detail the pathogenesis of **one (1)** primary (intrinsic) (3 marks) and **one (1)** secondary (extrinsic) (3 marks) platelet disorder in domestic animals.

**End of paper**



# Australian and New Zealand College of Veterinary Scientists

## Fellowship Examination

June 2013

## Veterinary Anatomical Pathology Paper 2

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

Time allowed: **Three (3)** hours after perusal

**Section A:** Answer **BOTH** of the **TWO (2)** Questions

**Section B:** Answer **ALL FOUR (4)** Questions

**Section C:** Answer **ALL EIGHT (8)** Questions

Section A: Answer **BOTH** of the **TWO** questions each worth 20 marks..... total 40 marks

Section B: Answer **ALL FOUR** questions each worth 15 marks ..... total 60 marks

Section C: Answer **ALL EIGHT** questions each worth 10 marks ..... total 80 marks

# Paper 2: Veterinary Anatomical Pathology

---

## Section A: Answer both of these two (2) questions

1. Describe the gross and histopathological cutaneous changes that are generally associated with canine endocrine diseases (*11 marks*). Choose **three (3)** specific diseases and list the key gross or histologic feature/s that differentiate these diseases from **each** other. (*9 marks*)
2. Discuss the pathogenesis of porcine circovirus 2 associated diseases (*5 marks*). List the range of gross (*7 marks*) and histological changes (*8 marks*) associated with **each** disease syndrome.

**Continued over page**

**Section B: Answer all four (4) questions**

1. Discuss the pathogenesis (9 marks), gross (3 marks) and histopathological (3 marks) lesions of enterotoxigenic *Escherichia coli* infections.
  
2. Outline the pathogenesis (7 marks), gross (4 marks) and histological (4 marks) lesions of ricketts in mammals.
  
3. Discuss the pathogenesis and histopathological lesions of:
  - a) arboviral infection and (7.5 marks)
  - b) Hendra virus infection (7.5 marks)in the CNS of horses in Australia.
  
4. Compare and contrast the pathogenesis and histological findings of mannosidosis in Angus cattle and *Swainsona* toxicity. (15 marks)

**Continued over page**

### **Section C: Answer all eight (8) questions**

1. Describe the pathogenesis (*4 marks*) and histopathological lesions (*6 marks*) of toxoplasmosis in Australian wildlife.
2. Discuss the pathogenesis (*4 marks*) and haematological findings (*6 marks*) of immune mediated haemolytic anaemia.
3. Discuss the pathogenesis (*6 marks*) and briefly describe the gross (*2 marks*) and histopathological findings (*2 marks*) of paracetamol toxicosis in cats.
4. Describe the pathogenesis (*2 marks*), gross (*3 marks*) and histopathological lesions (*5 marks*) of proventricular dilatation disease of birds.
5. Discuss the pathogenesis (*4 marks*) and list the gross (*2 marks*) and histopathological findings (*4 marks*) of glaucoma.
6. Describe the pathogenesis (*5 marks*), gross (*2 marks*) and histopathological lesions (*3 marks*) of polycystic kidney disease of Bull terriers.
7. Discuss the histogenesis (*2 marks*) and briefly describe the gross (*2 marks*) and histopathological presentation (*4 marks*) of canine acanthomatous ameloblastoma. Mention significant prognostic factors (*2 marks*) evaluated on biopsy examination.
8. Describe the pathogenesis (*3 marks*), gross (*4 marks*) and histopathological lesions (*3 marks*) of Tasmanian devil facial tumour disease.

**End of paper**