



The Royal College of Pathologists

**Part 1 examination**

**Veterinary Pathology: Second paper - Laboratory animals**

**Tuesday 25 September 2007**

*Candidates must answer FOUR questions ONLY*

*Time allowed: 3 hours*

- 1 Give an account of the spontaneous lesions of the anterior structures (including cornea, ciliary body, lens and iris) of the eye of the laboratory mouse. Outline important methodological considerations.
- 2 Write an account of spontaneous and induced lesions of the urinary bladder of dogs
- 3 Write notes on THREE of the following:
  - a. Muroid enteropathy in rabbits
  - b. *Entamoeba histolytica* in non-human primates
  - c. Canine parvovirus
  - d. Proliferative ileitis in hamsters

**Please turn over for Questions 4 and 5**

- 4 Discuss the range of induced non-neoplastic lesions encountered in the mucosa of the rat nasal cavity.
- 5 Write short notes on THREE of following:
  - a. Biliary tumours in rats
  - b. Bronchiolo-alveolar tumours in mice
  - c. Sertoliform tumours in rats
  - d. Granulocytic tumours in mice



The Royal College of Pathologists

**Part 1 examination**

**Veterinary Pathology (laboratory animals): Second paper**

**Tuesday 19 September 2006**

*Candidates must answer FOUR of the following questions ONLY*

**Time allowed: 3 hours**

- 1 Write short notes on three of the following:
  - i) Mouse hepatitis virus
  - ii) Canine herpesvirus
  - iii) Measles virus infection in non-human primates
  - iv) Cytomegalovirus in non-human primates.
- 2 Write short notes on three of the following:
  - i) Cataracts
  - ii) Vitamin E deficiency in guinea pigs
  - iii) Hyaline droplets in rat kidneys
  - iv) Endometrial hyperplasia in mice.
- 3 Discuss the range of lesions that may affect the cardiovascular system of dogs. Comment on biomarkers that may be useful in assessing the development of cardiovascular lesions.
- 4 Give an account of spontaneous proliferative changes of the haematopoietic system in laboratory mice used in routine toxicity studies. Describe in detail how these changes can be differentiated.

**Please turn over for Question 5**

- 5 Discuss the pathological changes that occur commonly in the rodent hepatobiliary tract in one-month toxicity studies. Briefly comment on further histological techniques that could be used to confirm the nature of the changes.



# **THE ROYAL COLLEGE OF PATHOLOGISTS**

## **Part 1 Examination**

**Tuesday 20 September 2005**

### **VETERINARY PATHOLOGY (laboratory animals)**

#### **Second Paper**

**Candidates must answer FOUR questions ONLY**

*Time allowed- THREE HOURS*

1. Compare and contrast the spontaneous proliferative changes that can occur in lungs of rats and mice.
2. Describe the biochemical and morphological features of phospholipidosis in toxicological studies. Briefly discuss the human risk assessment for this condition.
3. Describe the histopathological lesions associated with helicobacter infections in laboratory animals. What diagnostic procedures should be used when helicobacter infections are suspected?

**Please turn over for Questions 4 and 5**

4. Describe the techniques available to quantify gene expression in animal tissues. Discuss the value of gene expression profiles with traditional histopathology in toxicological studies.
5. Write short notes on each of the following conditions:
  - a) arteritis in beagles
  - b) sendai virus infection in rodents
  - c) encephalitozoon infection in rabbits
  - d) tuberculosis in macaques.



# THE ROYAL COLLEGE OF PATHOLOGISTS

## Part 1 Examination

Tuesday 21 September 2004

### VETERINARY PATHOLOGY (laboratory animals)

#### Second Paper

**Candidates must answer FOUR questions ONLY**

**Time allowed- THREE HOURS**

1. Describe the morphology of the cyclical changes in the reproductive tract of the female rat and indicate how this may be modulated by xenobiotic.
2. *NB. Please note that there is an error in Question 2: It should refer to spontaneous **renal** neoplasms. This error made the question considerably broader than had been intended and this was taken into consideration when this paper was marked.*

Discuss the histogenesis and morphological features of spontaneous neoplasms in the rat. Indicate the features important in the differential diagnosis of these lesions.

3. Write short notes on three of the following:
  - a) canine adenovirus Type 2 infections in dogs
  - b) *Helicobacter pylori* infections in non-human primates
  - c) light-induced retinal atrophy
  - d) melanoma in hamsters

**Please turn over for Questions 4 and 5**

4. Discuss the range of spontaneous and induced lesions that may affect the ear of laboratory rodents. Briefly describe the technical problems associated with investigating lesions of the cochlea.
5. Write short notes on three of the following:
  - a) Immune-mediated arthritis of mice
  - b) deciduoma
  - c) gingival hyperplasia
  - d) squamous metaplasia of the larynx





# **THE ROYAL COLLEGE OF PATHOLOGISTS**

## **Part 1 Examination**

**Tuesday 23 September 2003**

### **VETERINARY PATHOLOGY (laboratory animals)**

#### **Second Paper**

**Candidates must answer FOUR questions ONLY**

***Time allowed- THREE HOURS***

1. Write short notes on THREE of the following:
  - (a) analgesic nephropathy
  - (b) proliferative lesions of the urinary bladder
  - (c) transmissible ileal hyperplasia in the hamster
  - (d) poxvirus infections in rabbits
2. Give an account of spontaneous and induced skeletal muscle changes in laboratory animals. Discuss the role of clinical chemistry in the identification of these changes.
3. Describe the histopathological features of spontaneous tumours of the central nervous system in the rat. Discuss any special procedures that may assist in the differential diagnosis of these lesions.
4. Discuss the range of pathological changes that may be observed in the stomach and intestines of laboratory animals following the administration of xenobiotics.
5. Compare and contrast infectious lung diseases in non-human primates and dogs.



# **THE ROYAL COLLEGE OF PATHOLOGISTS**

## **Part 1 Examination**

**Tuesday 24 September 2002**

### **VETERINARY PATHOLOGY (Laboratory Animals)**

#### **Second Paper**

**Candidates must answer FOUR questions ONLY**

***Time allowed - THREE HOURS***

1. Inhalation pathology requires a thorough knowledge of the anatomy and physiology of the upper respiratory tract. Discuss.
2. Describe the range of spontaneous renal pathology in the rat, and discuss how these changes may affect interpretation of experimental data.
3. Discuss the range of pathological changes that affect the stroma of the ovary in rodents.
4. Describe the pathological changes commonly associated with continuous intravenous infusion experiments in laboratory animals.
5. Write short notes on three of the following:
  - (i) lipofuscin,
  - (ii) malignant melanoma,
  - (iii) haemochromatosis,
  - (iv) protoporphyria.

THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

**September 2000**

VETERINARY PATHOLOGY  
(laboratory animals)

**Second Paper**

**Candidates must answer FOUR questions ONLY**

Time allowed - THREE HOURS

1. Compare and contrast spontaneous renal lesions in rats and mice.
2. Give an account of proliferative lesions of the liver of laboratory rodents.
3. Describe the role of trophic hormones in the induction of some endocrine tumours.
4. Write short notes on THREE of the following:
  - (i) Myelinopathy
  - (ii) Valvular endocardiosis
  - (iii) Gastric carcinoids
  - (iv) Phospholipidosis
5. Write an essay on jaundice, with special reference to the dog.