

Australian College of Veterinary Scientists

Fellowship Examination

June 2010

Feline Medicine

Paper 1

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

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

Answer **four (4)** from the six questions **only**.

All questions are of equal value.

Subsections of questions are of equal value unless stated otherwise.

Paper 1: Feline Medicine

Answer four (4) from the six questions only.

1. Discuss the aetiology, pathophysiology and cytological features of **each** of the following:
 - a) anaemia secondary to chronic renal failure
 - b) anaemia due to pyruvate kinase deficiency
 - c) Heinz body anaemia
 - d) anaemia of inflammatory disease.

2. Answer **both** the following questions:
 - a) Discuss the significance of proteinuria in cats with chronic renal disease. (65%)
 - b) Describe the evidence published to support the potential role of *Helicobacter* spp. in the development of gastritis and gastric lymphoma in cats. (35%)

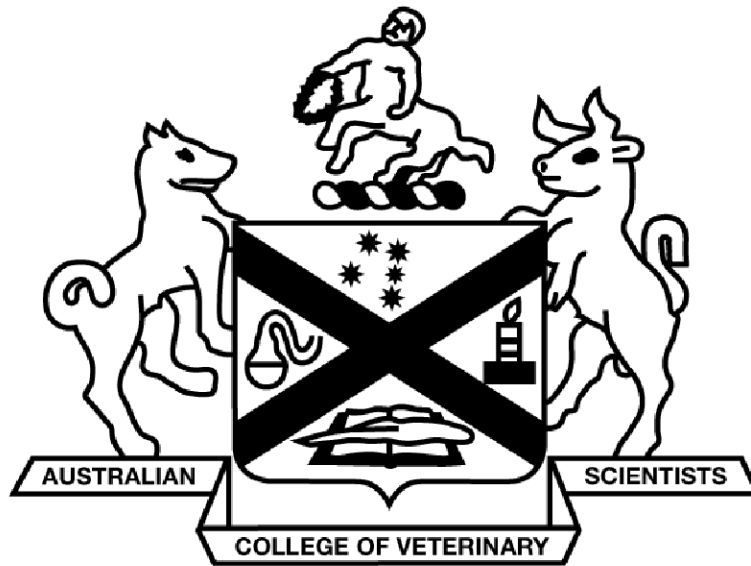
3. Discuss the mechanisms of action, indication for use, contraindications and adverse effects for **five (5)** of the following drugs: (20% each)
 - a) cyclosporin
 - b) cefovecin sodium
 - c) maropitant
 - d) ursodeoxycholic acid
 - e) feline interferon-omega
 - f) amitriptyline.

4. Answer **both** of the following questions:
 - a) Describe the mechanism by which feline infectious peritonitis virus (FIPV) is thought to arise in the cat population and how it causes disease in the cat population. (50%)
 - b) Discuss the diagnosis of FIP. (50%)

Continued over page

5. Discuss how the following biomarkers are produced in disease (40%) and the potential diagnostic use of **each** in feline clinical practice: (60%)
- a) cardiac troponin-i
 - b) brain natriuretic peptide
 - c) urinary N-acetyl-beta-D-glucosaminidase (NAG).
6. For **both** of the following conditions discuss the current understanding of their aetiology (20%) and pathophysiology (40%) and describe the radiologic and bronchoalveolar lavage sample cytological findings for **each** (40%):
- a) feline asthma
 - b) idiopathic pulmonary fibrosis.

End of paper



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Paper 2

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

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

Answer **three (3)** from the five questions from **Section A**
and **both** questions from **Section B**.

All questions in Section A are of equal marks (25 marks each).
Each question in Section B is worth 12.5 marks.

Paper 2: Feline Medicine

Candidates must answer five (5) from the seven questions only.

Three (3) questions from Section A and both questions from Section B must be answered.

SECTION A

Three (3) questions from section A must be answered. Each question in Section A is worth 25 marks in total.

1. Answer **all** the following: (12.5 marks each)
 - a) Discuss the use of cerebrospinal fluid (CSF) analysis in diagnosing neurological disease in the cat. In your answer, discuss differential diagnoses that are associated with particular CSF abnormalities.
 - b) A three-year-old domestic shorthair cat presents for evaluation of persistent neutropenia. The total neutrophil count is $1.0 \times 10^9/L$ and the cat is febrile. There is a mild non-regenerative anaemia that is normocytic and normochromic (PCV 0.22 L/L) and a normal platelet count. The cat is FeLV antigen negative and FIV antibody negative on cage-side testing. PCR tests on blood are positive for FeLV and negative for FIV.
 - i. What is your interpretation of the results of the FeLV tests? (50%)
 - ii. How would you investigate this case further? (50%)

2. Discuss why pancreatitis in cats is difficult to diagnose, including in your answer a full discussion of all diagnostic tests available and their usefulness.

- 3) Answer **all** of the following:
 - a) List the historical and physical examination abnormalities that may be detected in cats with acromegaly. (20%)
 - b) Discuss tests that may be used to confirm the diagnosis. (40%)
 - c) Discuss the current treatment options for cats with acromegaly. (40%)

- 4) Write notes on management strategies for **four (4)** of the following conditions (25% each); justify these strategies with evidence-based medicine whenever possible:
 - a) asymptomatic hypertrophic cardiomyopathy
 - b) inflammatory bowel disease
 - c) non obstructed feline idiopathic lower urinary tract disease
 - d) treatment of ocular *chlamydophila* spp. infection
 - e) nasal lymphoma.

Continued over page

- 5) Discuss **all** of the following:
- a) Outline the clinical consequences of lily toxicity (*Lilium* spp. and *Heimerocallis* spp.) (20%). Briefly outline your approach to initial treatment of this condition (20%).
 - b) A four-year-old domestic shorthair cat presents to you with a severely ulcerated right front leg. There is extensive exudation from the paw and the skin is necrotic and ulcerated from the carpus to the digits. Histological evaluation of a tissue biopsy reveals severe granulomatous inflammation of the subcutaneous tissues. An acid fast (Ziehl-Neelsen) stain shows the presence of massive numbers of acid-fast organisms.
 - i. What is the likely diagnosis in this cat? (20%)
 - ii. Discuss your diagnostic plan for this case. (20%)
 - iii. Discuss treatment options for this case. (20%)

End of section A

Section B

Answer both of the following questions, each worth 12.5 marks

6. An eleven-year-old desexed male domestic short-haired cat presents with a three-week history of lethargy, decreased appetite, weight loss and polydipsia. The cat has an indoor environment and there has been no access to known toxins. Physical examination reveals poor body condition, pale mucous membranes, skin tenting, body temperature of 38°C, bilateral intra-ocular haemorrhage and general reluctance to walk. There are no neurological abnormalities, but the cat is painful when the stifles are manipulated. Abdominal palpation and thoracic auscultation are unremarkable.

Blood was collected for haematology and biochemistry. Urine was collected via cystocentesis for urinalysis. The results are below:

Haematology	Result	Units	Reference Range
PCV	0.15	L/L	0.25–0.45
Hb	62	g/L	80–140
MCV	42	fL	40–52
MCHC	340	g/dl	310–350
Platelets	160	$\times 10^9/L$	200–700
Neutrophils	2.4	$\times 10^9/L$	3.8–10.1
Lymphocytes	0.2	$\times 10^9/L$	1.6–7.0
Monocytes	0.1	$\times 10^9/L$	<0.6
Eosinophils	1.1	$\times 10^9/L$	<1.4
Bands	0	$\times 10^9/L$	<0.5

Film comment: Red cells are normochromic and normocytic. Platelet numbers appear slightly reduced on the smear. No reticulocytes seen.

Further results over page

Biochemistry			
Serum	Value	Units	Reference range
Sodium	149	mmol/L	147–161
Potassium	3.8	mmol/L	3.7–4.9
Chloride	101	mmol/L	100–125
Bicarbonate	20	mmol/L	15–24
Urea	19.7	mmol/L	3.0–10.0
Creatinine	195	µmol/L	40–190
Glucose	4.1	mmol/L	3.9–8.3
TBIL	10	µmol/L	<17
AST	55	U/L	<60
ALT	75	U/L	<80
GGT	4	U/L	<6
ALP	80	U/L	<81
Total protein	103	g/L	55–78
Albumin	18	g/L	22–35
Globulin	85	g/L	33–43
Total calcium	4.2	mmol/L	1.9–2.7
Ionised calcium	2.3	mmol/L	1.1–1.4
Phosphate	1.9	mmol/L	1.0–2.0
CK	280	U/L	<261
Cholesterol	4.0	mmol/L	2.4–5.2

Urinalysis results:

Specific gravity 1.006

Protein 2+ dipstick

Glucose, bilirubin, blood negative

pH 6.5

Sediment analysis: tubular cell casts, no crystals, bacteria or leucocytes present.

- List the significant clinical and clinicopathological changes and briefly outline your interpretation of them in relation to this case. (30%)
- Describe how the underlying disease process has caused the relevant clinical signs. (20%)
- Briefly state whether further diagnostic investigation is necessary and the expected findings from this for your most likely diagnosis. (20%)
- Describe the optimal treatment to stabilise this patient in both the short and long term, briefly discussing potential complications and expected prognosis. (30%)

Section B continued over page

7. A three-year-old neutered female Siamese cat presents with a 12-hour history of an acute onset of lethargy and weakness. She is a pet cat with free access to the outdoors and is an active hunter. Her owner reports that she had a similar, but less severe episode of lethargy and weakness three months previously.

On examination she is quiet but responsive with mild tachypnoea (respiratory rate 60 breaths per minute) and pale mucous membranes. Femoral pulses are weak but present. Heart rate is 200 bpm and systolic blood pressure is 110 mmHg. Rectal temperature is 37.2°C. Abdominal palpation reveals mild cranial abdominal discomfort.

Results of preliminary investigations are as follows:

Haematology

Haematology	Result	Units	Reference Range
Red Blood Cells	3.69	$\times 10^{12}/L$	5.5-7.5
Haemoglobin	48	g/L	90-140
PCV	0.16	L/L	0.27- 0.42
MCV	42.4	fL	40-55
MCHC	300	g/L	300-350
Reticulocytes.	29.1	$\times 10^9/L$	7.0 - 60.0
White Blood Cells	9.4	$\times 10^9/L$	7.5 – 20
Neutrophils	7.71	$\times 10^9/L$	2.5 - 12.5
Lymphocytes	1.32	$\times 10^9/L$	1.5 - 6.5
Monocytes	0.38	$\times 10^9/L$	0 - 1.0
Eosinophils	0.00	$\times 10^9/L$	0 - 1.5
Basophils	0.00	$\times 10^9/L$	0 - 1.0
Platelet Count	21	$\times 10^9/L$	300-700

Film comment:

Red cells are normochromic and normocytic. Platelet numbers appear markedly reduced on the smear

Results continued over page

Serum Biochemistry

Serum	Value	Units	Reference range
ALT	1149	IU/L	<60
Alk Phos	49	IU/L	<60
Total Bilirubin	8	µmol/L	0-12
Total Protein	80	g/L	54-82
Albumin	27	g/L	25-39
Globulin	43	g/L	25-45
Creatinine	139	µmol/L	0-190
Urea	7	mmol/L	2.8-11
Calcium	2.7	mmol/L	2-3
Phosphorus	0.9	mmol/L	0.8-2.5
Glucose	10	mmol/L	3-7.5

Radiographs:

Thoracic radiographs were normal. Abdominal films showed a generalised loss of detail in the cranial abdomen.

Abdominal Ultrasonography:

Free fluid was present within the abdomen. Parenchymal organs appeared normal other than the liver, which was of diffusely heterogenous echodensity with small hyperechoic foci throughout.

Paracentesis:

Ultrasound-guided paracentesis yielded a dark red fluid sample, which did not clot when in contact with air. The PCV of the fluid was 0.45 L/L, and total protein 64 g/L.

- List the significant clinical and clinicopathological changes and briefly outline your interpretation of them in relation to this case. (40%)
- What do you consider to be the most likely diagnosis in this case, and why? (10%)
- How would you investigate this case further? Briefly outline the risks and benefits of any further diagnostic tests that you would recommend. (30%)
- What is your immediate treatment plan pending results of further investigations? (20%)

End of paper