

Australian College of Veterinary Scientists

Membership Examination

June 2010

Medicine of Cats

Paper 1

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

Time allowed: **Two (2)** 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: Medicine of Cats

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

1. Briefly discuss the clinical indications, mechanism of action and potential side effects of **four (4)** of the following drugs:
 - a) cefovecin
 - b) maropitant
 - c) enrofloxacin
 - d) cyclosporine
 - e) amlodipine
 - f) amitriptyline.

2. Discuss the indications, interpretation and limitations of **three (3)** of the following diagnostic tests:
 - a) feline pancreatic lipase immunoreactivity (fPLI)
 - b) PCR for FIV infection
 - c) direct immunofluorescence assay for *Giardia* spp.
 - d) serum antibody titres for *Toxoplasma gondii*
 - e) bronchoalveolar lavage.

3. Answer **both** the following:
 - a) Describe the neurologic pathways of the pupillary light reflex and menace response in the cat. (An illustration may be used.)
 - b) Discuss a logical approach to the diagnostic investigation of a cat that presents with clinical blindness and bilateral absence of pupillary light reflexes and menace responses.

4. Answer **each** of the following:
 - a) Describe the mechanisms of primary and secondary haemostasis. (40% of question marks)
 - b) Briefly discuss **two (2)** tests to assess primary haemostasis and **two (2)** tests to assess secondary haemostasis. (40% of question marks)
 - c) Provide **one (1)** example **each** of a congenital and an acquired coagulopathy. Explain the pathogenesis of each example. (20% of question marks)

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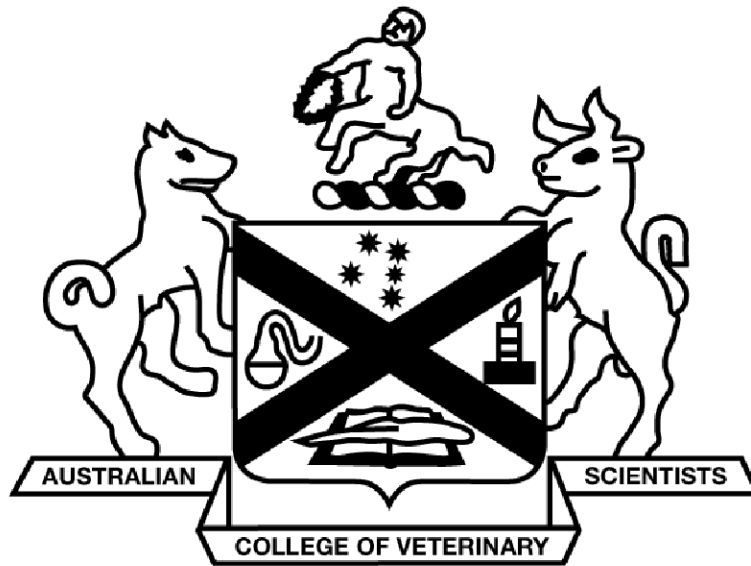
5. Answer **each** of the following:

- a) Describe the synthesis, storage and secretion of thyroid hormones.
(30% of question marks)
- b) Explain the function of thyroid hormones and their effect on target organs.
(30% of question marks)
- c) List the currently available treatment options for benign adenomatous thyroid hyperplasia.
(10% of question marks)
- d) Discuss the advantages and disadvantages of **one (1)** of these treatment options including any potentially adverse outcomes.
(30% of question marks)

6. Discuss the aetiopathogenesis of **three (3)** of the following:

- a) feline vaccine-associated sarcomas
- b) eosinophilic granuloma complex
- c) feline gingivostomatitis complex
- d) the 'dry' form of feline infectious peritonitis (FIP).

End of paper



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Paper 2

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

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

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

At least **one (1)** question must be from Section B.

All questions are of equal value.

Subsections of questions are of equal value unless stated otherwise.

Paper 2: Medicine of Cats

Answer four (4) from the following six questions only.
At least one (1) question must be from Section B.

SECTION A

1. Anorexia is a common clinical presentation in sick cats. Answer **all** of the following:
 - a) Explain how you would calculate the daily caloric requirements of an anorexic cat.
(20% of question marks)
 - b) Explain when you would consider enteral feeding in an anorexic hospitalised cat.
(20% of question marks)
 - c) Discuss the advantages and disadvantages of each option available for enteral nutrition.
(60% of question marks)

2. Choose **three (3)** of the following conditions. List the possible aetiologies and discuss your diagnostic approach:
 - a) jaundice in a five-year-old spayed female Abyssinian cat
 - b) polydipsia, polyphagia and weight loss in a six-year-old male castrated Burmese cat
 - c) stranguria in an 18-month-old castrated male Persian cat
 - d) pleural effusion in a two-year-old ragdoll cat with outdoor access
 - e) diarrhoea in a litter of eight-week-old ocicat kittens.

3. Discuss the clinical presentation, diagnosis and treatment of **three (3)** of the following:
 - a) mycobacterial panniculitis
 - b) aortic thrombo-embolism
 - c) nasal cryptococcosis
 - d) hyperaldosteronism (Conn's syndrome)
 - e) mediastinal lymphoma.

Continued over page

4. Chronic kidney disease (CKD) is a common diagnosis in older cats.
- a) List the tests you would recommend to investigate suspected CKD in a cat.
(30% of question marks)
 - b) Outline the currently recommended staging system (IRIS) for CKD in cats.
(30% of question marks)
 - c) Explain the goals of treatment of CKD.
(30% of question marks)
 - d) Indicate for which patients you would recommend the use of an angiotensin-converting enzyme (ACE) inhibitor.
(10% of question marks)

End of Section A.

Section B over page.

SECTION B

Candidates must answer at least one (1) question from Section B.

5. A two-year-old desexed female domestic shorthair cat is presented with a six-day history of inappetence and lethargy. The cat has been vomiting at least daily for the past seven days. She is fed a commercial diet and has no outdoor access. One month prior to presentation, the patient was boarding and was noted to have gained weight, which has subsequently been lost.

On physical examination the cat is hypersalivating, has a body condition score of 2/5 a heart rate of 204 bpm, respiratory rate of 40 breaths/min, rectal temperature of 38.8 °C and icteric mucous membranes.

Analyte	Patient Value	Reference Range
PCV	0.30 L/L	0.30-0.45 L/L
Hb	93 g/L	80-140 g/L
Erythrocytes	$7.1 \times 10^{12}/L$	$6-10 \times 10^{12}/L$
MCV	40 fL	40-45 fL
MCHC	350 g/L	310-350 g/L
MCH	13 pg	13-17 pg
White cell count	$9.2 \times 10^9/L$	$8-14 \times 10^9/L$
Segmented neutrophils	$8.0 \times 10^9/L$	$4-11 \times 10^9/L$
Lymphocytes	$0.84 \times 10^9/L$	$1.6-7.0 \times 10^9/L$
Monocytes	$0.14 \times 10^9/L$	$0.05-0.60 \times 10^9/L$
Eosinophils	$0.24 \times 10^9/L$	$0-1.0 \times 10^9/L$
Platelet count	$180 \times 10^9/L$	$300-700 \times 10^9/L$
Sodium	150 mmol/L	147-156 mmol/L
Potassium	2.9 mmol/L	4.0-4.6 mmol/L
Chloride	108 mmol/L	115-130 mmol/L
Calcium	2.35 mmol/L	2.00-2.80 mmol/L
Phosphate	0.91 mmol/L	0.90-2.3 mmol/L
ALT	434 U/L	<60 U/L
ALP	507 U/L	0-50 U/L
Bilirubin (total)	82 µmol/L	2-3 µmol/L
Urea	5.0 mmol/L	5.0-14.0 mmol/L
Creatinine	95 µmol/L	90-180 µmol/L
Glucose	9.7 mmol/L	3.6-6.6 mmol/L
Protein	67 g/L	54-73 g/L
Albumin	32 g/L	19-38 g/L
Globulin	35 g/L	26-51 g/L
Creatine kinase	275 µmol/L	0-360 µmol/L
Urine specific gravity	> 1.050	

Question Five continued over page

Answer **all** parts of this question:

- a) Explain your assessment of the clinical and clinicopathological findings. (40% of question marks)
- b) Construct a list of differential diagnoses. (10% of question marks)
- c) Discuss your diagnostic plan. (25% of question marks)
- d) Discuss the optimal management of **one** (1) of the differential diagnoses. Include in your answer a suitable nutritional regimen if the patient remains inappetent. (25% of question marks)

6. A 14-year-old desexed male Tonkinese cat is presented with a two-day history of anorexia and lethargy. The owner has not noted any abnormal behaviour prior to this time.

On physical examination the cat is markedly depressed, has a body condition score of 5/5, a heart rate of 204 bpm, respiratory rate of 32 breaths/min, rectal temperature of 37.5 °C and pale mucous membranes. You estimate him to be 10% dehydrated.

- a) Explain your assessment of the history and physical examination findings in this case. (25% of question marks)

Results of a complete blood count, serum biochemical profile and urinalysis were as follows on the next page

Question Six continued over page.

Analyte	Patient Value	Reference Range
PCV	0.36 L/L	0.30-0.45 L/L
TPP	85 g/L	59-78 g/L
Hb	127 g/L	80-140 g/L
Erythrocytes	$8.98 \times 10^{12}/L$	$6-10 \times 10^{12}/L$
MCV	40 fL	40-45 fL
MCHC	348 g/L	310-350 g/L
MCH	14 pg	13-17 pg
White cell count	$19.6 \times 10^9/L$	$8.0-14.0 \times 10^9/L$
Segmented neutrophils	$15.6 \times 10^9/L$	$4.0-11.0 \times 10^9/L$
Bands	$1.3 \times 10^9/L$	$0-0.4 \times 10^9/L$
Lymphocytes	$1.4 \times 10^9/L$	$1.6-7.0 \times 10^9/L$
Monocytes	$1.1 \times 10^9/L$	$0.1-0.6 \times 10^9/L$
Eosinophils	$0.2 \times 10^9/L$	$0-1.0 \times 10^9/L$
Platelet count	Adequate	
Sodium	151 mmol/L	146-156 mmol/L
Potassium	4.5 mmol/L	4.0-4.6 mmol/L
Chloride	108 mmol/L	115-130 mmol/L
Bicarbonate	10 mmol/L	15-25 mmol/L
Anion gap	37.5 mmol/L	17.0-29.0 mmol/L
Calcium	2.3 mmol/L	2.0-2.8 mmol/L
Phosphate	1.0 mmol/L	0.9-2.3 mmol/L
ALT	171 U/L	<60 U/L
ALP	48 U/L	0-50 U/L
Bilirubin (total)	2.0 $\mu\text{mol}/L$	2-3 $\mu\text{mol}/L$
Urea	29 mmol/L	5-14 mmol/L
Creatinine	375 $\mu\text{mol}/L$	90-180 $\mu\text{mol}/L$
Glucose	28 mmol/L	3.6-6.6 mmol/L
Protein	85 g/L	54-73 g/L
Albumin	27 g/L	19-38 g/L
Globulin	34 g/L	26-51 g/L
Creatine kinase	275 $\mu\text{mol}/L$	0-360 $\mu\text{mol}/L$

Urine specific gravity 1.020

Appearance: blood tinged

Colour: pale orange

Protein (SSA): 2+

pH 7.0

Glucose: 4+

Ketones: 3+

Blood: 3+

Bilirubin: negative

Microscopic examination: White blood cells 25/hpf (reference range: 6-10/hpf). Many bacterial cocci present.

Question Six continued over page

- b) Discuss your assessment of these results. (25% of question marks)
- c) List your differential diagnoses. (10% of question marks)
- d) Explain what further diagnostic and/or treatment options you would offer the owner at this stage. Justify your recommendations. (40% of question marks)

End of Section B.

End of Paper