



Australian and New Zealand College of
Veterinary Scientists

Fellowship Examination

June 2022

Feline Medicine

Paper 1

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

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

Answer **ALL FIVE (5)** questions

Answer **FIVE (5)** questions, each worth 48 markstotal 240 marks

Paper 1: Feline Medicine

Answer all five (5) questions

1. Answer **both** parts of this question:
 - a) Describe the general mechanism of calcium homeostasis in cats. *(16 marks)*
 - b) Compare and contrast the pathophysiology of primary versus secondary hyperparathyroidism in cats. *(32 marks)*

2. Answer **all** parts of this question:
 - a) Describe the pathophysiology of chronic pancreatitis **and** the proposed mechanisms of pancreatic fibrosis. *(24 marks)*
 - b) List the categories of causes of acute pancreatitis in cats. For each category, list at least one (1) specific disease example. *(8 marks)*
 - c) Describe and discuss features of an ideal diagnostic marker for pancreatitis in cats. *(16 marks)*

3. Answer **all** parts of this question:
 - a) With reference to the literature, discuss the aetiology of feline ureteral obstruction. *(24 marks)*
 - b) Describe the pathophysiological consequences of feline obstructive nephropathy. *(24 marks)*

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4. Discuss the aetiology **and** pathophysiology of the following feline cardiac diseases. Include in your answer the prevalence of **each** disease.
- a) Hypertrophic cardiomyopathy (HCM). *(20 marks)*
 - b) Dilated cardiomyopathy (DCM). *(14 marks)*
 - c) Restrictive cardiomyopathy (RCM). *(14 marks)*
5. Discuss the association between neoplasia and **each** of the following diseases, including the proposed mechanism for oncogenesis.
- a) Feline immunodeficiency virus. *(18 marks)*
 - b) Feline leukaemia virus. *(18 marks)*
 - c) Feline papillomavirus. *(12 marks)*

End of paper



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Paper 2

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Answer **ALL FIVE (5)** questions

Answer **FIVE (5)** questions, each worth 48 markstotal 240 marks

Paper 2: Feline Medicine

Answer all five (5) questions

1. Answer **all** parts of this question:

- a) For a cat with suspected suppurative cholangitis-cholangiohepatitis syndrome, perform a risk benefit analysis for **each** of the following procedures: *(24 marks)*
- Ultrasound-guided fine needle aspirate of the liver
 - Percutaneous ultrasound-guided cholecystocentesis
 - Percutaneous ultrasound-guided trucut biopsy of the liver
- b) Discuss the clinical consequences of persistent anorexia in a hospitalised cat. Describe how you would perform a nutritional assessment **and** create a nutrition plan for such a patient. *(24 marks)*

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2. A 10-year-old female neutered domestic shorthaired, predominantly outdoor cat presents with a 14-day history of progressive inappetence, 3 days of intermittent bilious vomiting and a single large episode of haematemesis. Physical examination reveals body condition score 3/9, mild reduction in muscle mass and a palpable mass in her cranial abdomen. She has mild pallor, dehydration estimated at 6% and is normothermic. Heart rate, pulse rate, respiratory rate and temperature are within normal limits and peripheral pulse quality is fair. Initial serum biochemistry, haematology and a USG are reported below.

Parameter	Abbreviation	Units	Result	Reference range
Alkaline Phosphatase	ALP	U/L	50	14–111
Alanine Transaminase	ALT	U/L	100	12–130
Gamma-Glutamyltransferase	GGT	U/L	2	0–4
Total Bilirubin	TBIL	µmol/L	10	0–15
Cholesterol	CHOL	mmol/L	2.95	1.68–5.81
Urea	UREA	mmol/L	40	5.7–12.9
Creatinine	CREA	µmol/L	89	71–212
Calcium	CA	mmol/L	2.53	1.95–2.83
Phosphorus	PHOS	mmol/L	1.98	1.00–2.42
Total Protein	TP	g/L	42	57–89
Albumin	ALB	g/L	22	22–40
Globulin	GLOB	g/L	20	28–51
Albumin:Globulin Ratio	A:G Ratio		1.1	
Glucose	GLU	mmol/L	6.72	4.11–8.84
Amylase	AMYL	U/L	1136	500–1500
Lipase	LIPA	U/L	544	100–1400
Sodium	Na	mmol/L	160	150–165
Potassium	K	mmol/L	3.6	3.5–5.8
Chloride	Cl	mmol/L	114	112–129
Total T4	TT4	nmol/L	20	10–60

Question 2 continued over page

Parameter	Abbreviation	Units	Result	Reference range
Haematocrit	HCT	L/L	0.18	0.28–0.45
Red Blood Cells	RBC	x 10¹²/L	3.9	5.5–10
Reticulocyte %	Retic %	%	1.8	
Reticulocytes ABs	Retic	x 10 ⁹ /L	50	<81
Haemoglobin	Hb	g/L	55	80–140
Mean Corpuscular Volume	MCV	fL	48	40–52
Mean Corpuscular Haemoglobin	MCH	pg	14	13–18
Mean Corpuscular Haemoglobin Concentration	MCHC	g/L	299	310–350
White Blood Cells	WBC	x 10 ⁹ /L	13.1	6–16
Neutrophils		x 10⁹/L	11.9	3.8–10.1
Lymphocytes		x 10 ⁹ /L	0.8	1.6–7
Monocytes		x 10 ⁹ /L	0.3	<0.7
Eosinophils		x 10 ⁹ /L	0.13	<1.41
Basophils		x 10 ⁹ /L	0	0.00–0.10
Platelet Count	PLT	x 10 ⁹ /L	210	200–700

Comments:

Leukocytes appear normal and mature. Red cells are normochromic with mild anisocytosis and mild polychromasia. Platelets appear normal. Heinz bodies 1%. No band neutrophils observed on film. Aggregate reticulocyte count reported. No haemotrophic *Mycoplasma* sp. seen.

Parameter	Abbreviation	Result
Urine specific gravity	USG	1.055

Answer **all** parts of this question:

- a) Interpret the haematological and biochemical abnormalities provided above, (include in your answer a prioritised list of differential diagnoses).

(8 marks)

- b) Outline and justify a rational diagnostic approach to this case. In your answer, discuss how **each** diagnostic step would be useful to differentiate between the most likely differential diagnoses. *(8 marks)*

Question 2 continued over page

- c) With reference to the literature, discuss the use of gastroprotective agents in cats. Your answer should include mechanisms of action, administration, risks and benefits for **each** class of drug, potential drug interactions **and** appropriate use of the medications. State which, if any, gastroprotectants would be useful in this patient **and** justify your choice. *(32 marks)*
3. Answer **all** parts of this question:
- a) Describe the immunological basis each major step of the crossmatching procedure **and** discuss the clinical utility of this test prior to performing a whole blood transfusion in a cat. *(16 marks)*
- b) With reference to the literature, outline and justify the rationale for administration of canine blood to a cat requiring an emergency blood transfusion. *(16 marks)*
- c) Discuss the diagnosis, treatment and monitoring of a cat demonstrating an acute transfusion reaction during a typed blood transfusion. *(16 marks)*
4. Compare and contrast the presentation, diagnosis and management of feline chronic bronchopulmonary disease, pulmonary fibrosis **and** lungworm infection. *(48 marks)*
5. You are presented with a 19-year-old, male neutered domestic shorthair cat. His owner's presenting complaint is 'night-crying'. He is reported to be vocalising loudly in the middle of the night. In addition, he has started urinating outside of his litter tray. Physical examination is normal.

Answer **all** parts to this question:

- a) List and justify your top **five (5)** differential diagnoses for **each** presenting problem. *(10 marks)*
- b) What is the most likely differential diagnosis for this patient, **and** what further investigations would you recommend? *(10 marks)*
- c) Results from your investigations reveal no abnormalities. Create a comprehensive management plan for this patient **and** justify your recommendations. *(28 marks)*

End of paper