



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 marks .....total 240 marks

# Paper 1: Feline Medicine

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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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**Feline Medicine**

**Paper 2**

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

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

Answer **ALL FIVE (5)** questions

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

# Paper 2: Feline Medicine

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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
<b>Urea</b>	<b>UREA</b>	<b>mmol/L</b>	<b>40</b>	<b>5.7–12.9</b>
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
<b>Total Protein</b>	<b>TP</b>	<b>g/L</b>	<b>42</b>	<b>57–89</b>
Albumin	ALB	g/L	22	22–40
<b>Globulin</b>	<b>GLOB</b>	<b>g/L</b>	<b>20</b>	<b>28–51</b>
Albumin:Globulin Ratio	A:G Ratio		<b>1.1</b>	
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
<b>Haematocrit</b>	<b>HCT</b>	<b>L/L</b>	<b>0.18</b>	<b>0.28–0.45</b>
<b>Red Blood Cells</b>	<b>RBC</b>	<b>x 10<sup>12</sup>/L</b>	<b>3.9</b>	<b>5.5–10</b>
Reticulocyte %	Retic %	%	1.8	
Reticulocytes ABs	Retic	x 10 <sup>9</sup> /L	50	<81
<b>Haemoglobin</b>	<b>Hb</b>	<b>g/L</b>	<b>55</b>	<b>80–140</b>
Mean Corpuscular Volume	MCV	fL	48	40–52
Mean Corpuscular Haemoglobin	MCH	pg	14	13–18
<b>Mean Corpuscular Haemoglobin Concentration</b>	<b>MCHC</b>	<b>g/L</b>	<b>299</b>	<b>310–350</b>
White Blood Cells	WBC	x 10 <sup>9</sup> /L	13.1	6–16
<b>Neutrophils</b>		<b>x 10<sup>9</sup>/L</b>	<b>11.9</b>	<b>3.8–10.1</b>
Lymphocytes		x 10 <sup>9</sup> /L	0.8	1.6–7
Monocytes		x 10 <sup>9</sup> /L	0.3	<0.7
Eosinophils		x 10 <sup>9</sup> /L	0.13	<1.41
Basophils		x 10 <sup>9</sup> /L	0	0.00–0.10
Platelet Count	PLT	x 10 <sup>9</sup> /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:

- Interpret the haematological and biochemical abnormalities provided above, (include in your answer a prioritised list of differential diagnoses). *(8 marks)*
- 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**