Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2014

Medicine of Cats

Paper 1

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

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

Answer **ALL <u>FOUR (4)</u>** questions

Answer **<u>FOUR</u>** questions each worth 30 marks .....total 120 marks

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Paper 1: Medicine of Cats

Answer all four (4) questions

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

   a) Describe the pathogenesis and clinical manifestations of disease due to feline herpesvirus-1 and feline calicivirus. *(20 marks)*

   b) For **each** virus listed in part a) above, discuss:

      i. disease transmission *(5 marks)*

      ii. vaccine efficacy. *(5 marks)*

2. Briefly discuss the nutritional principles for **each** of the following diseases. Your answer should emphasise why particular strategies are important in the context of the disease pathogenesis.

   Answer **all** parts of this question:

   a) Management of chronic kidney disease. *(10 marks)*

   b) Dissolution of struvite urolithiasis. *(10 marks)*

   c) Diagnosis of food allergy dermatitis. *(10 marks)*

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3. For **each** of the following diagnostic tests in cats listed below, explain the:

- indication(s) for conducting the test
- principles of interpretation of the test
- any limitations of the test

a) Feline immunodeficiency virus (FIV) antibody test. *(10 marks)*

b) Serum cobalamin assay. *(10 marks)*

c) Serial blood glucose curve generated through home monitoring of blood glucose. *(10 marks)*

4. Answer **both** parts of the question:

a) Explain the process by which dirofilariasis causes disease in cats. *(15 marks)*

b) Explain the relationship between hyperthyroidism and myocardial dysfunction in feline thyrotoxic cardiomyopathy. *(15 marks)*

End of paper

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Paper 2

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

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Answer **ALL <u>FOUR (4)</u>** questions

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Paper 2: Medicine of Cats

Answer all four (4) questions

1. A five-year-old, male neutered Siamese cat presents with a history of chronic intermittent coughing that has become progressively worse in frequency and severity over four months. The coughing is paroxysmal, harsh and non-productive. Wheezing may occasionally follow the coughing fits. The current frequency is one to three coughing fits per day, and there do not appear to be any specific patterns or triggers.

   On examination, the cat's vital parameters are within normal limits, but there is a mild increase in tracheal sensitivity.

   Answer **all** parts of this question:

   a) Provide a problem list and prioritised list of differential diagnoses for this patient. Justify the diagnosis you think is most likely. *(5 marks)*

   b) Describe the diagnostic approach to this patient. Justify any diagnostic tests you choose and describe how the results would be used in a diagnostic investigation. *(15 marks)*

   Bronchoalveolar lavage and cytology demonstrated an eosinophilic bronchitis with increased mucus and cellular debris. Culture and sensitivity testing is pending, but no infectious agents were identified in the other tests.

   c) State the most likely diagnosis; describe and justify an appropriate long-term management plan for this case. *(10 marks)*

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2. A 10-year-old, female neutered domestic shorthair cat presents with an acute onset of generalised tonic-clonic cluster seizures.

On physical examination, the cat weighs 4.5 kg and has a body condition score of 5/9. Heart rate is 160 beats per minute with normal auscultation, respiratory rate is 32 breaths per minute, temperature is 38.9°C. Heart/lung field auscultation, abdominal palpation, peripheral lymph nodes and coat condition are unremarkable.

Answer **all** parts of this question:

a) Describe an appropriate neurological examination in this patient. Your answer should relate potential abnormal results to the neuroanatomical diagnosis. *(10 marks)*

b) List and briefly justify additional information you would like to obtain and diagnostic tests you would perform to further investigate this case. *(5 marks)*

c) List the differential diagnoses for this cat's seizures in order from **most** likely to **least** likely. *(5 marks)*

d) No abnormalities are found on any diagnostic tests. Outline a long-term management plan for the cat, including any monitoring recommended. *(10 marks)*

3. A ten-year-old male neutered Burmese cross cat presents with a two-day history of lethargy, inappetence and vomiting. Some weight loss and alteration in drinking habits has occurred in the past three weeks.

On examination, the cat is weak and approximately 10% dehydrated. His respiratory rate is 80 breaths per minute; heart rate 180 beats per minute. Thoracic auscultation is otherwise unremarkable. There is mild abdominal pain on palpation. His temperature is 38.0°C, mucous membranes are tacky with capillary refill time of approximately two seconds.

Blood and urine are collected for haematology, serum biochemistry and urinalysis.

Question 3 continued over page

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Apart from a mild mature neutrophilia attributable to stress, there are no abnormal findings on complete blood count or blood smear.

Parameter	Result	Reference Range FELINE
ALB	**46**	22–44 G/L
ALP	**398**	10–90 U/L
ALT	**432**	20–100 U/L
TBILI	**12**	2–10 µmol/L
BUN	10.0	3.6–10.7 mmol/L
Ca	2.53	2.00–2.95 mmol/L
PHOS	1.39	1.10–2.74 mmol/L
CRE	180	27–186 mmol/L
GLU	**26.4**	3.9–8.3 mmol/L
Na^+	143	142–164 mmol/L
K^+	**3.5**	3.7–5.8 mmol/L
TP	**87**	54–82 G/L
GLOB	41	15–57 G/L
cholesterol	**7.8**	1.95–5.2 mmol/L
HCO_3	**15**	18–23 mmol/L

Urinalysis: (cystocentesis)
pH 7, USG 1.040, glucose 4+, ketones 3+, protein 1+, bilirubin negative, blood trace
Sediment: occasional RBCs, otherwise unremarkable.

Answer **both** parts of this question:

a) Briefly explain **each** of the clinical pathological abnormalities in this cat and relate them to the diagnosis you consider most likely. *(10 marks)*

b) Describe in detail the management of this cat in the first 48 hours after presentation. Justify your treatment and any additional monitoring or tests you consider appropriate. *(20 marks)*

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4. A nine-year-old female speyed domestic shorthair cat is presented with a history of inappetence, vomiting hair balls and diarrhoea for several months. She is currently eating very little, vomits most days, with or without food or hair balls and passes semi-formed faeces two or three times a day. No mucus, blood or melena is associated with defecation. The cat is treated monthly with topical imidocloprid-moxidectin (Advocate ^{R}) and three monthly with praziquantel; vaccinations are up to date.

On examination the cat is thin (body condition score 3/9) and has mild pain on abdominal palpation. Heart rate, respiratory rate and temperature are within normal limits and hydration appears adequate.

Answer **all** parts of this question:

a) Construct a problem list for this cat from the history and physical examination findings. *(3 marks)*

You collect blood and urine for haematology, serum biochemistry and urinalysis.

Parameter	**Result**	**Reference Range FELINE**
WBC	18.2	5.5–19.5 x 10^9/L
lymphocytes	**1.2**	1.5–7 x 10^9/L
monocytes	0.81	0–1.5 x 10^9/L
neutrophils	**16.2**	2.5–14 x 10^9/L
eosinophils	0.03	0–1 x 10^9/L
basophils	0	0–0.2 x 10^9/L
RBC	8	5–10 x 10^{12}/L
haemoglobin	12	8–15 g/dL
HCT	38	24–45 %
MCV	42	39–55 fl
MCH	14.9	12.5–17.5 pg
MCHC	32	30–36 g/dL
platelets	480	300–800 x 10^9/L

Blood smear: RBC and WBC morphology normal, platelets adequate.

Question 4 continued over page

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Parameter	Result	Reference Range FELINE
ALB	**21**	22–44 g/L
ALP	**356**	10–90 U/L
ALT	**298**	20–100 U/L
AMY	940	300–1100 U/L
TBILI	**16**	2–10 µmol/L
BUN	9.4	3.6–10.7 mmol/L
Ca	2.47	2.00–2.95 mmol/L
PHOS	1.98	1.10–2.74 mmol/L
CRE	165	27–186 mmol/L
GLU	10.2	3.9–8.3 mmol/L
Na+	148	142–164 mmol/L
K+	3.7	3.7–5.8 mmol/L
TP	**39**	54–82 g/L
GLOB	**18**	19–57 g/L
cholesterol	4.8	1.95–5.2 mmol/L

Urinalysis: (cystocentesis)

USG 1.040 pH 7, protein 1+, bilirubin negative, glucose negative, ketones negative, blood trace

Sediment: no significant findings

b) Interpret the results of the haematology, biochemistry and urinalysis.
(10 marks)

c) Present a rational hypothesis for the cause or causes of this cat's problems.
(7 marks)

d) List and justify any further tests that are indicated in this cat in the light of your hypothesis. *(10 marks)*

End of paper

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