Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2013

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

Paper 1: Medicine of Cats

Answer all four (4) questions

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

   a) Explain the aetiopathogenesis of hepatic lipidosis in cats. *(12 marks)*

   b) The following drugs are commonly used in the management of hepatic lipidosis in cats. For **each** drug describe its mechanism of action **and** any adverse effects or precautions for use:

      i. ursodeoxycholic acid *(3 marks)*

      ii. S-adenosyl methionine. *(3 marks)*

   c) Outline the principles of nutritional management and fluid therapy for a cat with idiopathic hepatic lipidosis. *(12 marks)*

2. For **each** of the following lesions in cats:

      i. describe the abnormalities likely to be identified on neurological examination

      ii. relate these abnormalities to the relevant neuroanatomy

   a) tail-pull injury with radiographic evidence of sacrococcygeal separation *(10 marks)*

   b) unilateral brachial plexus nerve root avulsion *(10 marks)*

   c) unilateral otitis media. *(10 marks)*

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3. Answer **both** parts of this question:

a) Explain the pathogenesis of diabetes mellitus in cats. Include in your answer risk factors which affect the likelihood of a cat developing diabetes mellitus.

(20 marks)

b) Certain endocrine conditions lead to insulin resistance and diabetes mellitus in cats. Briefly outline the aetiopathogenesis of **two (2)** such conditions, including the mechanism by which they predispose to diabetes mellitus.

(5 marks each)

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

a) Describe the pathogenesis of feline immunodeficiency virus infection.

(15 marks)

b) Describe the potential effects on renal function in cats of **both** of the following:

(15 marks)

i. hyperthyroidism

ii. the treatment of hyperthyroidism.

End of paper

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Paper 2

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Paper 2: Medicine of Cats

Answer all four (4) questions

1. For **each** of the following clinical scenarios list likely differential diagnoses **and** outline a logical diagnostic plan and justify your use of diagnostic tests:

   a) a 16-week-old kitten with diarrhoea of two weeks duration which has failed to improve following a broad spectrum anthelminthic, five days of amoxicillin-clavulanate and a commercial, highly digestible diet. *(15 marks)*

   b) non-regenerative anaemia in a five-year-old Siamese cat. *(15 marks)*

2. A six-year-old castrated male domestic short-haired cat was referred to you after being diagnosed with feline chronic gingivostomatitis (FCGS). On physical examination; gingivitis, caudal stomatitis, and submandibulary lymphadenopathy were noted. The cat did not respond to repeated long-acting steroid injections or seven-day courses of amoxicillin-clavulanate.

   Answer **both** parts of this question:

   a) Outline a rational diagnostic approach for re-assessment of this case. *(12 marks)*

   b) Outline the goals for treatment and discuss treatment options for managing FCGS. *(18 marks)*

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3. A 14-month-old female spayed Birman cat is presented in poor body condition (3/9). The cat has been owned since she was three months old and came from a local breeder. Appetite has been variable over the last few weeks and is much reduced at present. She has occasional diarrhoea.

On clinical examination, mucous membranes are pale but pink. There is a mild fever (39.5°C) and an irregular, non-painful mass mid-abdomen. The abdomen feels somewhat doughy and you suspect there may be effusion.

The results of blood and urine testing are as follows:

Haematology:

Parameter	Value	Reference interval
Hb	**58**	**80–140 g/L**
RCC	**4.5**	**5.5–10.0 x10^{12}/L**
PCV	**0.18**	**0.25–0.48 L/L**
MCV	44	43–55 fL
MCH	13	13–17 pg
MCHC	330	282–333 g/dL
platelets	312	300–800 x 10^9/L
reticulocyte %	0.1	<0.5%
reticulocytes	4	<61 x 10^9/L
WBC	**22.5**	**5.5–19.0 x 10^9/L**
neutrophils	**18.6**	**2.0–13.0 x 10^9/L**
lymphocytes	**0.5**	**0.9–7.0 x 10^9/L**
eosinophils	0.9	<1.1 x 10^9/L
blood smear:	platelets clumped and adequate	

Biochemistry:

Parameter	Value	Reference interval
sodium	148	144–158 mmol/L
potassium	3.7	3.7–5.4 mmol/L
chloride	107	106–123 mmol/L
BUN	**20.2**	**5.0–15.0 mmol/L**
creatinine	0.12	0.08–0.20 mmol/L
glucose	7.4	3.2–7.5 mmol/L
bilirubin	4	<10 μmol/L
ALT	46	19–100 U/L
ALP	48	5–50 U/L

Question 3 continued over page

Biochemistry continued:

Parameter	Value	Reference interval
total protein	**120**	**60–84 g/L**
globulin	**96**	**31–52**
albumin	**24**	**25–38 g/L**
total calcium	2.4	2.1–2.8 mmol/L
phosphate	1.2	1.0–2.3 mmol/L
cholesterol	3.5	2.2–5.5 mmol/L

Urinalysis:

Parameter	Value
specific gravity	1.040
pH	6.5
protein	1+
glucose	negative
ketones	negative
bilirubin	negative
blood	negative

Answer **all** parts of this question:

a) Explain possible mechanisms for hypoalbuminaemia and hyperglobulinaemia in cats. *(4 marks)*

b) List differential diagnoses for this cat. Indicate which of these are most likely and justify your choice. *(6 marks)*

c) Outline **further** diagnostic tests you would recommend in this cat, including any inherent limitations of these tests. Justify your decisions with respect to the most likely diagnosis. *(15 marks)*

d) Outline options for management of this cat. *(5 marks)*

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4. A 10-year-old male castrated domestic short haired cat is presented to you with signs of intermittent weakness, polyuria and polydipsia. Body condition score is 3/5 and temperature is normal. There is a grade 2/6 systolic heart murmur with a regular heart rate of 200 beats per minute. Respiratory rate is normal and mucous membranes are pink with normal capillary refill. Fundic examination reveals tortuosity of the retinal vessels.

Answer **all** parts of this question:

a) List the major problems evident from the history and clinical examination and your broad differentials for **each**. *(6 marks)*

Haematology, biochemistry and urinalysis results for this cat are as follows:

Haematology – no significant findings

Biochemistry:

Parameter	Value	Reference interval
sodium	155	146–156 mmol/L
potassium	**3.0**	**4.0–4.6 mmol/L**
chloride	115	115–130 mmol/L
BUN	**18**	**6.1–12.8 mmol/L**
creatinine	**178**	**76–164 mmol/L**
glucose	**8.0**	**3.6–6.6 mmol/L**
bilirubin	2.3	<10 μmol/L
ALT	45	<60 U/L
ALP	35	0–50 U/L
total protein	65	54–73 U/L
albumin	27	19–38 g/L
globulin	38	26–51 g/L
total calcium	2.5	2.0–2.8 g/L
phosphate	1.1	0.9–2.3 mmol/L
CK	220	<300 U/L
total T4	49	19–65 nmol/L

Question 4 continued over page

Urinalysis:

Parameter	Value
specific gravity	1.025
pH	6
protein	2+
glucose	negative
ketones	negative
bilirubin	negative
blood	negative
microscopic sediment examination	normal

Oscillometric measurement of arterial blood pressure revealed an average systolic pressure of 186 mmHg (reference < 160 mmHg)

b) Interpret the above results in the context of the clinical findings for this case. Provide a revised problem list. *(10 marks)*

c) List and justify additional tests that you would require to investigate this case further. *(7 marks)*

d) State what you consider to be the most likely diagnosis and justify your choice. Outline an appropriate management strategy for this condition. *(7 marks)*

End of paper