Australian College of Veterinary Scientists

Membership Examination

June 2010

Small Animal Medicine

Paper 1

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

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

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

All questions are of equal value. (25 marks)

Subsections of questions are of equal value unless stated otherwise.

Paper 1: Small Animal Medicine

Answer four (4) from the five questions only.

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

   a) Briefly outline the pathogenesis of upper respiratory tract infection in the cat. Include in your answer a list of the most common aetiologic agents. (10 marks)

   b) Infection with the **two (2)** common viruses can result in a 'chronic carrier state'. Explain how this occurs. Include in your answer how the chronic carrier state differs between the two viruses. (15 marks)

2. Answer **all** the following questions:

   a) Describe the method for performing cardiac auscultation in the dog and cat. (7.5 marks)

   b) Explain the terminology used to characterise a heart murmur. (7.5 marks)

   c) Describe the murmur typically associated with **three (3)** of the following: (10 marks)

      i. mitral valve insufficiency

      ii. aortic regurgitation

      iii. patent ductus arteriosus

      iv. left ventricular outflow tract turbulence in a cat.

3. Answer **both** the following questions:

   a) Outline briefly the origin of blood urea nitrogen (BUN) and creatinine. (5 marks)

   b) Describe the factors that increase and decrease these biochemical parameters. (20 marks)

4. Answer **both** the following questions:

   a) Describe the functions of the cerebellum. Include a brief description of the cerebellum's interaction with other parts of the central nervous system.(10 marks)

   b) Explain the pathophysiological basis of the clinical signs that may be seen with cerebellar disease. (15 marks)

Continued over page

5. Describe the indications, clinical significance and limitations of **two (2)** of the following tests:

   a) parathyroid hormone assay

   b) faecal occult blood

   c) specific canine pancreatic lipase

   d) bronchoalveolar lavage.

End of paper

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Paper 2

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Paper 2: Small Animal Medicine

Answer four (4) from the five questions only.

1. You have diagnosed a 16-week-old male rottweiler puppy with parvovirus. The puppy currently has frequent vomiting and haemorrhagic diarrhoea and is moderately dehydrated. A complete blood count has shown severe neutropenia and lymphopenia. Serum biochemistry has shown severe hypoalbuminaemia and hypoglobulinaemia and moderate hypokalaemia. Mild hypoglycaemia is also present. A faecal ELISA is positive for parvovirus.

   Describe your therapeutic management of this puppy. Briefly explain your reasoning behind **each** therapeutic decision.

2. A five-year-old female spayed Jack Russell terrier presents with a three-month history of polyuria/polydipsia (PU/PD) and intermittent urinary incontinence when asleep. On physical examination, the dog is panting, restless and has a pot-bellied appearance. There is a palpable hepatomegaly on abdominal palpation. The remainder of a complete physical examination is normal. Blood and urine tests follow:

Complete blood count:

Parameter	Value	Units	Reference range
Haemoglobin	162	g/L	115–180
Red blood cells	6.9	10^{12}/L	5.0–8.0
Haematocrit	0.47	%	0.37–0.55
MCV	68	fL	63–74
MCH	23	pg	20–25
MCHC	346	g/L	310–360
White blood cells	7.2	10^9/L	6.0–14.0
Neutrophils	**12.1**	10^9/L	4.1–9.4
Lymphocytes	0.9	10^9/L	0.9–3.6
Monocytes	0.3	10^9/L	0.2–1.0
Eosinophils	0.14	10^9/L	0.10–1.20
Basophils	0	10^9/L	<0.11
Platelets	208	10^9/L	200–900

Leucocytes appear normal and mature. Red cells appear normal.
Platelets are clumped and appear normal in number.

Question 2 continued over page

Biochemistry

Parameter	Value	Units	Reference range
Sodium	149	mmol/L	140–155
Potassium	4.0	mmol/L	3.8–5.8
Chloride	111	mmol/L	100–120
Bicarbonate	18	mmol/L	16–24
Anion gap	24	mEq/L	15–25
Urea	4	mmol/L	2.5–9.0
Creatinine	80	µmol/L	40–140
Glucose	4.1	mmol/L	3.5–6.7
Bilirubin	3	µmol/L	0–10
AST	31	U/L	1–80
ALT	70	U/L	0–80
ALP	**870**	**U/L**	**1–120**
Protein	66	g/L	55–78
Albumin	39	g/L	22–36
Globulin	27	g/L	25–40
Calcium	2.4	mmol/L	2.0–2.80
Phosphate	1.5	mmol/L	0.8–2.0
Creatine kinase	328	U/L	0–400
Amylase	560	U/L	0–2400
Lipase	60	U/L	1–70
Cholesterol	5.2	mmol/L	3.6–8.8
Triglyceride	0.5	mmol/L	0.2–1.7

Urinalysis

Collection method	cystocentesis
USG	1.014
pH	6
Glucose	negative
Ketones	negative
Bilirubin	negative
Protein	+
Blood	negative
Casts	negative
Sediment	no inflammatory cells, multiple Gram-negative rods seen

Question 2 continued over page

Answer **all** the following questions:

a) List the problems evident from the history, physical examination and clinical pathology. (2½ marks)

b) List the most likely differential diagnoses for this case. (2½ marks)

c) Outline your subsequent diagnostic plan. Explain your reasoning for the test(s) you will perform. (10 marks)

d) Discuss the management of the disease you believe would be most likely in this case. (10 marks)

3. A three-year-old male neutered cat presents with a six-month history of intermittent but regular episodes of difficulty breathing, wheezing and coughing. On physical examination the cat is mildly tachypnoeic. Soft crackles and wheezes can be heard on auscultation of both sides of the chest. The cat is otherwise well. Answer **all** the following questions:

a) List differential diagnoses for this case. Indicate which diagnosis you think is most likely. (5 marks)

b) Describe your diagnostic approach to this patient. Briefly explain your reasoning for the diagnostic tests you choose. (10 marks)

c) Assuming your most likely differential diagnosis is correct, outline your treatment plan. (10 marks)

4. Answer **two (2)** of the following:

a) Describe the management of giardiasis in a cat with diarrhoea from a multi-cat household.

b) Describe the diagnostic approach to a mature adult dog with megaoesophagus.

c) Describe the treatment and prognosis of an adult dog with lymphangiectasia.

5. Describe the diagnostic approach for **two (2)** of the following. Include a list of differential diagnoses in your answer:

a) A 10-year-old German shepherd dog with left forelimb lameness and a large, bony swelling in the left proximal humerus.

b) A two-year-old poodle with a swollen left carpal joint.

c) A 10-year-old domestic shorthair cat with findings on neurologic examination consistent with a T3-L3 spinal cord lesion.

End of paper