

**AFIP MINIBOARD EXAMINATION  
MAY 2007**

**CLINICAL PATHOLOGY**

1. Causes of microcytic, hypochromic anemia include all EXCEPT:
  - A. Chronic hemorrhage
  - B. Copper deficiency
  - C. Iron toxicity
  - D. Portosystemic shunt
  - E. Pyridoxine deficiency
  
2. \_\_\_\_\_ is the major cytokine that controls eosinophil production.
  - A. IL-5
  - B. IL-3
  - C. GM-CSF
  - D. TNF-alpha
  - E. RANTES
  
3. Which leakage enzyme is liver-specific in birds:
  - A. ALT
  - B. AST
  - C. GDH
  - D. GGT
  - E. SDH

4. Typical laboratory findings in animals with portosystemic shunts include all of the following EXCEPT:
- A. Increased ALP
  - B. Decreased BUN
  - C. Increased ammonia
  - D. Microcytic erythrocytes
  - E. Increased postprandial bile acids
5. Total T4 (tT4) blood values from an 11-year-old Domestic shorthair cat before and after TRH stimulation and T3 suppression tests:

	<u>Patient tT4</u>	<u>Reference Range</u>
Baseline	4.0	0.8 – 4.0 µg/dl
TRH stimulation	4.2	
T3 suppression	3.9	

The most likely diagnosis is:

- A. Sick euthyroidism
- B. Pituitary adenoma
- C. Lymphocytic thyroiditis
- D. Adenomatous thyroid hyperplasia
- E. Surgical thyroid gland destruction

6. Blood cortisol results from an 8-year-old intact female Basenji before and 4 and 8 hours after low and high dose dexamethasone suppression tests:

	<u>Patient</u>	<u>Reference Range (mg/dL)</u>
Baseline	7.0	0.5 to 6.0
LDDST 4 hrs	0.9	<1.4
LDDST 8 hrs	3.4	<1.4
HDDST 4 hrs	0.6	<1.4
HDDST 8hrs	0.4	<1.4

LDDST = Low dose dexamethasone suppression test  
HDDST = High dose dexamethasone suppression test

The most likely diagnosis is:

- A. Pituitary adenoma
  - B. Ovarian steroid cell tumor
  - C. Adrenal cortical carcinoma
  - D. Ketoconazole administration
  - E. Iatrogenic hypoadrenocorticism
7. Volume and specific gravity are inversely related in most conditions EXCEPT:
- A. Hyperadrenocorticism
  - B. Diabetes mellitus
  - C. Hypoadrenocorticism
  - D. Diabetes insipidus
  - E. Pyometra

8. Regarding the UP/UC ratio, all of the following are true EXCEPT:
- A. It gives a more quantitative estimate of proteinuria
  - B. Hemorrhage into the urinary tract can falsely elevate the UP/UC ratio
  - C. Inflammation in the urinary tract can falsely elevate the UP/UC ratio
  - D. A UP/UC ratio greater than 3 is indicative of primary tubular disease
  - E. Dogs with renal amyloidosis often have UP/UC ratios greater than 18

9. Selected serum chemistry results from a young horse:

<u>TEST</u>	<u>PATIENT</u>	<u>REFERENCE RANGE</u>
Sodium	120	128-142
Potassium	5.2	2.9-4.6
Chloride	92	98-109
Phosphorus	4.9	1.5-4.7
Calcium	10.0	10.2-13.4

The results are most consistent with:

- A. Diarrhea
- B. Profuse sweating
- C. Adipsia
- D. Selenium deficiency
- E. Hyperaldosteronism

10. Which statement is TRUE concerning albumin influences on anion gap (AG):
- A. Hyperalbuminemia increases AG and alkalemia increases AG
  - B. Hyperalbuminemia decreases AG and alkalemia increases AG
  - C. Hyperalbuminemia increases AG and alkalemia decreases AG
  - D. Hyperalbuminemia increases AG and alkalemia has no effect on AG
  - E. Hyperalbuminemia has no effect on AG and alkalemia decreases AG
11. All of the following are causes of hyperlipidemia EXCEPT:
- A. Hypothyroidism
  - B. Feline hepatic lipidosis
  - C. Acute pancreatic necrosis
  - D. Enterocolitis in horses
  - E. Diabetes mellitus
12. All of the following may increase in acute liver disease EXCEPT:
- A. Albumin
  - B. Transferrin
  - C. Complement (C3)
  - D. Hemopexin
  - E. IgM

13. Selected blood values from a 6 year-old German Shepherd Dog:

<u>TEST</u>	<u>PATIENT</u>	<u>REFERENCE RANGE</u>
CBC:		
WBC	20.45	5.0-14.1
Seg	17.5	2.9-12.0
Bands	0.25	0.0-0.45
Lymph	0.3	0.4-2.9
Mono	1.4	0.1-1.4
Eos	1.0	0.0-1.3
Baso	0.0	0.0-0.14

WBC Morphology: many large abnormal lymphocytes observed.

Hematocrit	30	35-57
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RBC Morphology: Normal

Platelets	180	211-621
Serum Calcium	14.2	9.1-11.7
BUN	50	8-28
Creatinine	2.9	0.5-1.7

The most likely diagnosis is:

- A. Acute renal failure
- B. Lymphoma
- C. Immune mediated thrombocytopenia
- D. Multiple myeloma
- E. Renal calculi

14. All of the following are true about bovine lymphoma EXCEPT:
1. Most bovine lymphomas are due to infection with BLV
  2. Most bovine lymphomas are not associated with BLV infection
  3. The most common presentation is multicentric lymphoma
  4. The most common presentation is alimentary lymphoma
  5. Most affected cattle are older
- A. 1, 3, 5
- B. 2, 4
- C. 2, 5
- D. 1, 3
- E. 2

15. Typical leukogram findings in hypercortisolemia include all EXCEPT:
- A. Lymphocytosis
  - B. Monocytosis
  - C. Neutrophilia
  - D. Lymphopenia
  - E. Eosinopenia

16. Selected laboratory data from a 2-year-old female dog with continuous vaginal bleeding since parturition 8 weeks ago:

<u>Hematology:</u>		(Reference Range)	<u>Urinalysis:</u>	
Hct	41%	(35-57%)	Sp. Gr.	1.036
Platelets	253,000/ $\mu$ l	(200,000-600,000)	pH	6.5
WBC	8,300/ $\mu$ l	(5,000-14,100)	Blood	2+ (voided specimen)

<u>Serum Chemistry:</u>		(Reference Range)	<u>Other Tests:</u>		(Ref Range)
BUN	17 mg/dl	(8-28)	Bleeding time	6 minutes	(1-5)
Total protein	6.7 g/dl	(5.4-7.5)	APTT	14.2 sec	(13.1-17.4)
			PT	6.3 sec	(5.8-7.9)
			FDP	<10 $\mu$ g/ml	(0-32)
			Fibrinogen	200 mg/dl	(150-300)

The most likely diagnosis is:

- A. Canine thrombopathia
- B. Factor VIII deficiency
- C. von Willebrand's disease
- D. Glanzmann's thrombasthenia
- E. Chediak-Higashi syndrome

17. All of the following are true regarding amylase EXCEPT:
- A. It is increased in avian pancreatitis
  - B. It may be affected by corticosteroids
  - C. It is a good indicator of feline pancreatitis
  - D. It has poor specificity for pancreatic disease
  - E. It is less sensitive than lipase for pancreatitis in dogs
18. All of the following most likely increase alkaline phosphatase (ALP) EXCEPT:
- A. Osteosarcoma
  - B. Corticosteroids
  - C. Hepatic lipidosis
  - D. Canine herpesvirus-1
  - E. Pyrrolizidine alkaloid containing plants
19. Causes of hypercalcemia include all EXCEPT:
- A. Acidosis
  - B. Paraproteinemia
  - C. Cantharidin toxicity
  - D. Hypoadrenocorticism
  - E. Granulomatous disease

20. Selected blood chemistry values and cytological results from a 7-year-old, spayed female Siamese cat with dyspnea:

Thoracic fluid cytology:

Color: Pink; opaque

Nucleated cell count: 5500 cells/ $\mu$ l

Protein: 2.5 g/dl

Triglycerides: 68 mg/dl

Cholesterol: 102 mg/dl

Microscopic: Small lymphocytes and macrophages predominate, with fewer intact neutrophils

Blood chemistry results:

	<u>Patient</u>	<u>Reference Range</u>
Albumin	3.3	2.8–3.9 g/dl
Cholesterol	150	71-156 mg/dl
Fibrinogen	300	150-300 mg/dl
Total protein	6.5	6.0-7.9 g/dl
Triglycerides	39	27-94 mg/dl

The most likely diagnosis is:

- A. Cardiac failure
  - B. Toxoplasmosis
  - C. Thymic lymphoma
  - D. Streptococcal pneumonia
  - E. Feline infectious peritonitis
21. All of the following cause hyperglycemia and glucosuria EXCEPT:
- A. Canine Fanconi-like Syndrome
  - B. Diabetes mellitus
  - C. Hyperadrenocorticism
  - D. Hyperthyroidism
  - E. Acromegaly

22. All of the following are associated with renal disease in the cow EXCEPT:
- A. Hypocalcemia
  - B. Hyponatremia
  - C. Hypochloridemia
  - D. Metabolic acidosis
  - E. Hyperphosphatemia
23. All of the following are effective osmoles that cause shift of water from the ICF to the ECF EXCEPT:
- A. Sodium
  - B. Glucose
  - C. Ethylene glycol
  - D. Propylene glycol
  - E. Urea
24. Hypocalcemia is a clinical chemistry finding in a horse with:
- A. Renal failure
  - B. Excess vitamin D dietary supplementation
  - C. Osteomyelitis
  - D. Blister beetle toxicosis
  - E. Immobilization

25. The major negative acute-phase proteins include all of the following EXCEPT:

- A. Albumin
- B. Prealbumin
- C.  $\alpha_2$ -macroglobulin (cattle)
- D.  $\alpha_1$ -antitrypsin
- E. Transferrin