

**2012 Miniboard Exam
Clinical Pathology Blank**

Candidate # _____

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____

2012 Miniboard Exam

Clinical Pathology

1. Which of the following biomarkers is most specific for heart failure?
 - a. Cardiac troponin-1
 - b. RPA-1
 - c. NCX-1
 - d. Creatinine Kinase
 - e. None of the above
2. Which of the following is most accurate in diagnosing peritonitis in dairy cows?
 - a. Total protein
 - b. D-Dimer
 - c. LDH
 - d. SAAG
 - e. All are equally accurate
3. Which of the following nephrotoxicity markers is most specific for injury to the collecting ducts in laboratory animals?
 - a. α GST
 - b. μ GST
 - c. Clusterin
 - d. RPA-1
 - e. Troponin-1
4. Hemophilia A is caused by a deficiency in which factor?
 - a. VII
 - b. VIII
 - c. IX
 - d. X
 - e. XI
5. Which of the following erythrocyte abnormalities are seen in portosystemic shunts in dogs?
 - a. Microcytosis
 - b. Leptocytes
 - c. Spherocytes
 - d. Keratocytes
 - e. a. and b.
6. Which of the following clinical pathologic abnormalities is NOT seen in dogs with extravascular hemolysis?
 - a. Neutrophilia
 - b. Thrombocytosis
 - c. Monocytosis
 - d. Reticulocytosis
 - e. Non-regenerative anemia

7. Which of the following clinical pathologic findings was predictive of mortality following severe trauma in rhesus macaques?
 - a. Elevated serum lactate
 - b. Increased base excess
 - c. Elevated serum bicarbonate
 - d. Decreased blood pH
 - e. All of the above

8. Which of the following erythrocyte abnormalities may be seen on a blood smear following oxidative damage to erythrocytes?
 - i. Dohle bodies
 - ii. Howell Jolly bodies
 - iii. Heinz bodies
 - iv. Keratocytes
 - a. i.
 - b. i. and ii.
 - c. i., ii., and iii.
 - d. ii. and iv.
 - e. iii. and iv.

9. Which of the following is NOT a cause of macrocytic anemia?
 - a. Low vitamin B12
 - b. FeLV infection
 - c. Low serum cobalt
 - d. Low serum copper
 - e. Erythroleukemia

10. Toxic changes in neutrophils include all of the following except:
 - a. Döhle bodies
 - b. Nuclear hypersegmentation
 - c. Cytoplasmic basophilia
 - d. Toxic granulation
 - e. Cytoplasmic vacuolation

Polly the Pomeranian arrives at the clinic at 1600. Her retired flag officer owner is concerned that Polly no longer seems interested in her “num-nums” or in playing with Geronimo, the Chihuahua from down the block. PE reveals an obviously depressed, severely dehydrated bitch with a tense, painful abdomen.

CBC results:

HCT:	28%	↓
Hb:	10g/dL	↓
RBC:	4×10^6	↓

MCV:		N
MHC:		N
MCHC:		N
Retics:	0	
RBC morphology:	Normal	
WBC:	45x10 ³	↑
Segs:	10x10 ³	↑
Bands:	25x10 ³	↑
Metas:	4x10 ³	↑
Lymphs:	2x10 ³	N
Monos:	4x10 ³	↑

Neutrophil morphology: Cytoplasmic basophilia and vacuolation

11. Which of the following interpretations are most consistent with the above CBC data?
- Anemia of chronic disease and a stress leukogram
 - Hemolytic anemia and physiologic neutrophilia
 - Iron lack anemia with inflammatory leukogram
 - Anemia of chronic disease and inflammatory leukogram
 - Regenerative anemia with a leukemoid response

Scooter, a 10 year old male neutered border collie, contracted Lyme's disease several months ago, according to his owner. Recently he has been losing weight, developed PU/PD, and has become very lethargic. On PE he is emaciated, has fetid breath, dyspnea, dependant edema, and an abdominal effusion.

Urinalysis:		Serum Chemistry:		
USG:	1.012	BUN:	51 mg/dL	↑
Color:	Yellow	Creat:	3.0 mg/dL	↑
Turbidity:	Cloudy	TP:	4.1 g/dL	↓
pH:	7.0	Alb:	1.9 g/dL	↓
Protein:	4+	A/G:	0.5	↓
Glucose:	Neg	ALP:	99 U/L	N
Ketones:	Neg	ALT:	57 U/L	N
Bilirubin:	Neg	Glu:	118 mg/dL	N
Blood:	Neg	An Gap:	25	↑
WBC:	Neg	Ca:	7.6 mg/dL	↓
UP/UC ratio:	9	Phos:	11.1 mg/dL	↑
		Chol:	352 mg/dL	↑

12. Which of the following best summarizes this dog's clinical pathologic abnormalities?

- a. Prerenal azotemia
 - b. Renal azotemia
 - c. Postrenal azotemia
 - d. Both prerenal and renal azotemia
 - e. Both renal and postrenal azotemia
13. What is your interpretation of the UP/UC ratio?
- a. Normal
 - b. Primary tubular disease
 - c. Primary glomerular disease
 - d. Renal amyloidosis
 - e. Hemorrhage into the urinary tract
14. What is this dog's acid base status?
- a. Titrational acidosis
 - b. Titrational alkalosis
 - c. Secretional acidosis
 - d. Secretional alkalosis
 - e. There is not sufficient data to determine acid base status
15. Which of the following findings would not support a diagnosis of nephrotic syndrome in this dog?
- a. Hyperglobulinemia
 - b. Proteinuria
 - c. Hypoalbuminemia
 - d. Edema
 - e. Hypercholesterolemia

16. Glucosuria occurs in the BIRD when blood glucose levels reach:
- a. 50 mg/dL
 - b. 100 mg/dL
 - c. 180 mg/dL
 - d. 280 mg/dL
 - e. 600 mg/dL
17. All of the following are cytologic characteristics of estrus except:
- a. >90% keratinized cells
 - b. Variable number of erythrocytes
 - c. Lack of cellular debris in smear
 - d. Bacteria present
 - e. Abundant neutrophils

Thyroid panel from a dog:

TT4: 0.8 ug/mL ↓
fT4: 1.0 ug/mL ↓
TSH: 0.7 ng/mL ↑
TgAA: Negative

18. Which of the following is the most appropriate diagnosis based on this thyroid panel?
- a. Normal thyroid function
 - b. Lymphocytic thyroiditis
 - c. Primary thyroid atrophy
 - d. Nonthyroidal illness
 - e. Thyroiditis without thyroid dysfunction

Clotting panel from a dog:

Platelets	320x10 ³ /uL	N
BMBT	6 min.	↑
APTT	22 sec.	↑
PT	9 sec.	↑
TT	10 sec.	↑
FDP	31 ug/mL	N

19. What is the most appropriate diagnosis for this dog?
- a. Disseminated intravascular coagulation
 - b. von Willebrand's disease
 - c. Liver disease
 - d. Congenital fibrinogen deficiency
 - e. Platelet function defect

The following are clinical data from a dog with chronic pasty diarrhea and weight loss:

Folate	17.2 ug/L	↑
Cobalamine	115 ng/L	↓
TLI	10.2 ug/L	N

20. Which of the following is the most likely diagnosis for this dog?
- a. Exocrine pancreatic insufficiency
 - b. Bacterial overgrowth
 - c. Proximal small intestinal disease

- d. Distal small intestinal disease
- e. Diffuse small intestinal disease

21. All of the following are biochemical pathways found in mature erythrocytes EXCEPT:
- a. Hexose-monophosphate
 - b. Glucose-6-phosphatase
 - c. Embden-Meyerhof
 - d. Methemoglobin reductase
 - e. Rapoport-Luebering
22. Which of the ALP isoenzymes in the dog RESISTS levamisole inhibition and is therefore helpful in determining the source of the isoenzyme?
- a. Liver isoenzyme
 - b. Bone isoenzyme
 - c. Corticosteroid isoenzyme
 - d. Placental isoenzyme
 - e. Renal isoenzyme
23. In the bird, which is the BEST induced enzyme for measuring cholestasis?
- a. GGT
 - b. GDH
 - c. SDG\H
 - d. ALT
 - e. ALP

Electrolyte data from a dog:

Sodium	151 mEq/L	N
Potassium	4.5 mEq/L	N
Chloride	118 mEq/L	N
Calcium	22 mg/dL	↑
Phosphorous	2.9 mEq/L	N

24. What is the most likely diagnosis in this dog?
- a. Renal failure
 - b. Hyperparathyroidism
 - c. Vitamin D toxicosis
 - d. Lymphoma
 - e. Hemoconcentration

Selected serum chemistry data from a dog:

TCO ₂	28 mmol/L	↑
AG	15 mmol/L	N
Sodium	141 mmol/L	N
Chloride	98 mmol/L	↓
Potassium	3.2 mmol/L	↓
Urine pH	7.6	↑

25. What is the most appropriate classification of the dog's acid base status?

- a. Respiratory acidosis
- b. Metabolic titrational acidosis
- c. Metabolic secretional acidosis
- d. Respiratory alkalosis
- e. Metabolic alkalosis