Comprehensive Exam

QUESTIONS

DIRECTIONS: Each of the numbered items or incomplete statements in this section is followed by answers or by completions of the statement. Select the ONE numbered answer or completion that is BEST in each case.

1. A herd of cattle is experiencing production losses characterized by chronic diarrhea, poor growth rates, and lower than expected reproductive performance. Secondary haircoat changes include generalized hair loss, a brittle texture, and changes to the hair color (lightening). What would be the most likely diagnosis?
   (1) Ergot alkaloid contamination of feed
   (2) Iodism
   (3) Selenium toxicosis
   (4) Molybdenum deficiency
   (5) Copper deficiency

2. A farmer who manages a veal operation has had a series of calves exhibiting anorexia, fever, and drooling. The examination of affected calves reveals fevers, puffy cheeks, and a foul odor to the breath. The most likely diagnosis is:
   (1) Actinobacillosis
   (2) Oral necrobacillosis
   (3) Actinomycosis
   (4) Vesicular exanthema
   (5) Bovine papular stomatitis

3. Which one of the following etiologic agents is most likely to cause bacterial endocarditis (BE) in a pig less than 1 year of age?
   (1) Actinobacillus species or Staphylococcus aureus
   (2) Actinomyces pyogenes or Streptococcus species
   (3) Streptococcus species or Erysipelothrix rhusiopathiae
   (4) Staphylococcus aureus or Actinomyces pyogenes
   (5) Streptococcus species or Actinobacillus species

4. The polyuria seen in animals with equine Cushing's disease may result from:
   (1) Pyelonephritis
   (2) Excessive cortisol secretion
   (3) Polydipsia
   (4) Gluconephritis
   (5) Polydipsia
5. A female goat has been losing weight for 6 weeks. This is the only animal affected out of a flock of 75 does, although the owner remembers one or two similar does last year that went on to die. Postmortem examinations were not performed. The clinical examination rules out dental disease, primary undernutrition, arthritis, and diarrhea. Two other differential diagnoses high on your list include:

(1) Johne’s disease and coccidiosis.
(2) Johne’s disease and visceral caseous lymphadenitis (CLA).
(3) Gastrointestinal helminths and visceral CLA.
(4) Abomasal emptying defect and coccidiosis.
(5) Gastrointestinal helminths and abomasal emptying defect.

6. In a horse that has an acute onset of blepharospasm, tearing, and photophobia in one eye, what is the most appropriate approach to further evaluation and treatment?

(1) Apply fluorescein to the eye; if possible to nurse from the cow, it readily suckled the calf is septicemic.
(2) Cecal torsion, abomasal emptying defect, and coccidiosis.
(3) The calf is septicemic.
(4) Nervous system signs may be seen in individual cattle.
(5) Diagnosis depends on the demonstration of organisms in the feces.

11. Coccidiosis is a disease common to many domestic animals. Which of the following statements is correct?

(1) Coccidiosis is usually associated with high mortality rates but low morbidity rates.
(2) Clinically, species are the pathogenic organism in all domestic animals.
(3) Treatment with coccidiostats during episodes of clinical disease is the best course of action.
(4) Nervous system signs may be seen in individual cattle.
(5) Diagnosis depends on the demonstration of organisms in the feces.

12. One of your colleagues asks you for a consultation on the serum chemistry profile of a 2-day-old embryo-transfer calf that has been slightly weak since birth. The calf was born in posterior presentation and had to be delivered by forced extraction. Your colleague tube-fed the calf with 2 L of colostrum immediately after delivery, and although the calf was unable to nurse from the cow, it readily sucked colostrum offered by nurse bottle after that time.

A. Which of the following statements is correct when examining a horse with abdominal pain?

(1) Traumatic reticuloperitonitis (TRP), abomasal displacement, and a painless udder swelling of all four quarters.
(2) Cecal torsion, abomasal volvulus, and a painless udder swelling of all four quarters.
(3) The calf is septicemic.
(4) Nervous system signs may be seen in individual cattle.
(5) Diagnosis depends on the demonstration of organisms in the feces.

B. A swine farmer has a group of feeder pigs that are off-feed. Many of these pigs have high fever and some exhibit reddened, raised lesions with a diamond shape. The most likely diagnosis is:

(1) Erysipelas.
(2) Exudative dermatitis.
(3) Ringworm.
(4) Sporotrichosis.
(5) Sarcoptic mange.

17. A farmer describes an outbreak of mastitis that caused a sudden drop in milk production and a painless udder swelling of all four quarters in affected cows. New animals recently have been introduced to this large herd, and there is a concurrent problem with pneumonia and lameness in the heifers. Milk secretion looks relatively normal, but if a sample is left to stand, a fine grit settles to the bottom of the sample cup. The most likely diagnosis is:

(1) Actinomyces pyogenes mastitis.
(2) Mycoplasma mastitis.
(3) Nocardia mastitis.
(4) Streptococcus uberis mastitis.
(5) Staphylococcus epidermidis mastitis.
18. A 4-year-old mare with acute colitis develops head edema, a painful neck, depression, and anorexia on the fourth day of intravenous fluid and plasma therapy. What is the most likely diagnosis and its treatment?

(1) Jugular vein thrombosis is the diagnosis and should be treated with catheter removal, topical dimethylsulfoxide (DMSO) or hydrotherapy, and systemic antibiotics.

(2) Congestive heart failure (CHF) is the diagnosis and should be treated with diuretics and positive inotropics agents, such as digoxin, and reduce sodium in the diet.

(3) Electrolyte deficiencies causing cardiac arrhythmias is the diagnosis and should be treated with the correction of the underlying electrolyte imbalance, lidocaine for ventricular arrhythmias, or quinidine for atrial fibrillation if arrhythmia persists after electrolyte replacement.

(4) Acute equine purpura hemorrhagica is the diagnosis and should be treated with hyperthermia, intravenous fluid and plasma therapy. What is the prognosis for return to function, euthanasia is recommended.

(5) Because many toxins have a specific site of action, such as glomerular or proximal tubular damage, the best test on horses is a renal biopsy to diagnose the site of damage, leading to the early recognition and removal of the toxin.

19. A veterinarian is consulted regarding a 4-year-old horse with a fetid mass on the eyelid. The owner noticed the mass in February. What should be on the veterinarian's list of differential diagnoses?

(1) Habronemiasis

(2) Sarcoïd

(3) Squamous cell carcinoma (SCC) and habronemiasis

(4) Sarcoïd, SCC, and habronemiasis

20. Which one of the following statements regarding acute renal failure in horses is correct?

(1) Causes of acute renal failure in horses include the administration of nephrotoxic medications [e.g., amphotericin B], magnesium sulfate (vitamin B6), the consumption of red maple leaves, and the accidental consumption of mercury.

(2) Adult horses that develop uroliths usually show signs of renal failure because of post renal urinary obstruction.

(3) Urine sediment analysis in horses with suspected renal tubular disease that shows only a large amount of calcium carbonate crystals in alkaline urine is most suggestive of uroliths because the absence of tubular casts rules out tubular disease.

(4) A high serum creatinine level combined with low urine specific gravity in a foal 2 days old that has few other clinical signs suggests an underlying congenital renal disorder.

(5) Because many toxins have a specific site of action, such as glomerular or proximal tubular damage, the best test on horses is a renal biopsy to diagnose the site of damage, leading to the early recognition and removal of the toxin.

21. A veterinarian is consulted regarding transient bouts of loose feces in a 5-year-old riding horse. On examination of the horse, no definitive findings are noted, and the veterinarian recommends routine deworming, vaccinations, and dental care. Four months later, the horse appears to be thin and has a plaque of ventral, midline edema. Upon questioning, the owner reports that the horse's feces also continue to be non-formed. What is the most likely diagnosis?

(1) Granulomatous enteritis

(2) Equine monocytic ehrlichiosis (Potomac horse fever)

(3) Chronic impaction of the small intestine

(4) Gastric ulceration

(5) Equine pancreatitis

22. Which one of the following statements regarding anhidrosis in horses is correct? Anhidrosis:

(1) can be diagnosed with serum sodium measurements.

(2) is a genetic condition.

(3) may be complete or partial.

(4) is seen most commonly in obese mares.

(5) is treated most commonly with thyroxine and calcium salts.

23. A veterinarian is called to examine a small flock of sheep with swelling and stiffness of the limbs, ventral abdominal distention, and depression. Two young sheep have died. A postmortem examination reveals dilated right and left ventricles of the heart, acute congestion of the liver, and significant pleural, pericardial, and peritoneal fluid. The sheep were fed a 3-kg mixture of 50:50 oat hay and alfalfa hay, 1-kg of a 15% grain mix labeled for sheep, and they had free access to a 22% protein/trace mineral supplement labeled for beef cattle. Vaccination and de-worming prophylaxis appeared adequate. What is the most likely diagnosis and how should this diagnosis be confirmed?

(1) Chronic parasitism caused by intestinal parasites found in fecal flotations.

(2) Congestive heart failure (CHF) due to toxic exposure (most likely gossypol toxicity) confirmed by free gossypol found in the protein and mineral supplement and concentrate mix.

(3) Acute hepatic toxicity due to plant toxicity confirmed by pathognomonic lesions or rumenotomy found in a liver biopsy.

(4) Oxine progressive pneumonia serology or viral isolation from blood.

(5) Liver flukes confirmed by a Baermann float of feces.

24. Blindness can be associated with a variety of conditions in domestic animals. Which conditions often result in blindness?

(1) Leptospirosis in horses, vitamin D toxicity in cattle.

(2) Polioencephalomalacia in calves, lead poisoning in cattle.

(3) Lead poisoning in cattle, listeriosis in sheep.

(4) Leptospirosis in horses, listeriosis in sheep.

(5) Vitamin D toxicity in cattle, polioencephalomalacia in calves.

25. Which one of the following pairs describing the etiologic agent and treatment of liver abscesses in cattle is correct?

(1) Escherichia coli gentamicin

(2) Salmonella typhimurium trimethoprim-sulfamethoxazole

(3) Actinomyces bovis tilimicosin

(4) Fusobacterium necrophorum penicillin

(5) Aspergillus thiamphenicol

26. Which one of the following is most likely to cause intravascular hemolysis in cattle?

(1) Anaplasma marginale

(2) Ehrlichia chaffeensis

(3) Ehrlichia equi

(4) Onion toxicosis

(5) Babesia bigemina

27. A client has a 9-day-old Standardbred filly foal that has had diarrhea of 1 day's duration. The veterinarian examines the foal and finds no abnormalities other than watery feces. What is the appropriate next measure?

(1) The owner should apply petroleum jelly to the perineum and call the veterinarian if the diarrhea persists for more than another 48 hours.

(2) The owner should consider having a galactose tolerance test run on the foal.

(3) Flunixin meglumine and lincomycin should be administered to the foal.

(4) The owner should observe the foal for 2 more days. The mare and foal should be separated, except for two daily feedings.

(5) An enema should be administered to treat meconium impaction.

28. An 8-year-old horse has a persistent cough when stabled but is otherwise afebrile and maintains a good appetite and demeanor. Which one of the following statements apply to this case?

(1) The cough is usually an immunologic reaction to airborne allergens, and cellular infiltration of the lower airways is a neutrophilic type because of secondary bacterial colonization.

(2) Finding eosinophils in the lower airways is highly consistent with a diagnosis of allergic lower airway disease, such as chronic obstructive pulmonary disease (COPD) or heaves.

(3) Using the atropine challenge test for a diagnostic test, failure to relieve the signs suggests that clinical signs are caused by a disease other than COPD.

(4) After changing management practices to reduce the dust in the environment and using corticosteroids to reduce airway irritation, both treatments can be eliminated gradually as clinical signs abate.

(5) Other signs might include exercise intolerance and abdominal muscle hypertrophy, with changes in intrapleural pressure larger than 10 mm Hg.
44. A dairy client has an unacceptable prevalence of Staphylococcus aureus mastitis. Which one of the following statements is the best advice?

1. Treat all cases of clinical mastitis with intramammary penicillin during lactation.
2. Cull animals with S. aureus or segregate and milk separately.
3. Immediately cease milking all culture-positive cows and dry teat.
4. Treat all culture-positive cows with intramuscular penicillin.
5. Strip out affected quarters from culture-positive cows every 2 hours.

45. In a pig barn with problems of low-grade cough, prolonged time to reach market weight, and some carcasses showing cranioventral lung consolidation and peribronchial lymphoid cuffing, what is the most likely diagnosis?

1. Porcine reproductive and respiratory syndrome (PRRS)
2. Enzootic pneumonia caused by inadequate ventilation
3. Chronic form of Actinobacillus pleuropneumonia
4. Swine influenza followed by secondary Pasteurella multocida pneumonia
5. Mycoplasma pneumoniae infection in the herd

46. Hypomagnesemic tetany of ruminants also may be known as:

1. milk fever, grass staggers, or alkali disease
2. grass tetany, milk fever, or alkali disease
3. “downer cow” syndrome, wheat pasture poisoning, or grass tetany
4. lactation tetany, grass staggers, or wheat pasture poisoning
5. “downer cow” syndrome, lactation tetany, or eclampsia

47. In ruminants with obstructive urolithiasis, which one of the following clinical scenarios is most likely?

1. In cases of complete urethral obstruction with bladder rupture, there is inappetence, depression, and colic signs with kicking at the abdomen.
2. Straining to urinate may be sufficient to prolapose the rectum, and obstructed sheep may show tail wriggling.
3. For early cases in which urethral or bladder rupture have yet to occur, it is possible to attempt medical therapy by passing a catheter retrograde into the bladder.
4. If the bladder is ruptured, surgical closure of the defect is usually required for the steer to resume urinary flow.
5. In sheep and goats, the obstruction at the veriform appendage is often a solitary calculus that can be crushed to allow the free flow of urine.

48. A veterinarian is called to examine a 1 year-old, grey, Hunter-type gelding because the owner had noticed that the horse had been losing weight over the past 2 months. Clinical examination reveals the horse to be severely underweight, but there are no other abnormal findings. Weight loss without other abnormal findings could be caused by:

1. Chronic obstructive pulmonary disease (COPD), liver flukes, or lymphosarcoma
2. Lymphosarcoma, squamous cell carcinoma of the stomach, or COPD
3. Liver flukes, malnutrition, or intestinal clostridiosis
4. Squamous cell carcinoma of the stomach, malnutrition, or granulomatous enteritis
5. Intestinal clostridiosis, lymphosarcoma, or squamous cell carcinoma of the stomach

49. A 4-day-old calf has stopped nursing during the previous 12 hours. It is depressed, lacks a menace reflex, has a rectal temperature of 39.9°C, and is showing signs of a stiff neck. The calf had a normal birth and suckled well on the first day. Which one of the following statements is correct?

1. If this were a foal, the signs are typical for neonatal maladjustment syndrome (NMS).
2. Intrauterine bovine virus diarrhea (BVD) infection at mid-gestation could explain these signs.
3. An important part of the diagnostic regimen is a cerebrospinal fluid (CSF) sample and test for passive transfer.
4. The depression and lack of menace reflex suggest hydrocephalus or hydranencephaly; therefore, there is no treatment for this calf.
5. The proper treatments for sole ulcer include:

- Corrective trimming, pressure bandaging, and claw elevation (block).
- Systemic antibiotics, corrective trimming, and footbaths.
- Claw elevation (block), systemic antibiotics, and footbaths.
- Corticosteroids, pressure bandaging, and corrective trimming.
- Tetracycline sprays, systemic antibiotics, and pressure bandaging.

50. Which one of the following conditions regarding bovine leukosis is true?

1. It manifests as lymphosarcoma in most patients.
2. It has been proven to be a zoonosis.
3. It manifests as lymphosarcoma in most patients.
4. It manifests as lymphosarcoma in most patients.
5. Vitamin A deficiency

51. Of the following treatments, the best therapy for acute coliform mastitis is:

1. Systemic antibiotics, corrective trimming, and footbaths.
2. Oral fluids.
3. Systemic antibiotics, corrective trimming, and footbaths.
4. Corticosteroids, pressure bandaging, and corrective trimming.
5. Tetracycline sprays, systemic antibiotics, and pressure bandaging.

52. Which one of the following conditions would likely cause abdominal pain in foals?

1. Meconium impaction, gastric ulceration, cryptosporidiosis
2. Gastric ulceration, granulomatous enteritis, ascarid impaction
3. Meconium impaction, intussusception, ascarid impaction
4. Intussusception, cryptosporidiosis, abdominal hemias
5. Abdominal hemias, granulomatous enteritis, small intestinal volvulus

53. In the late summer, a 6-month-old Holstein heifer has had signs of depression and recumbency over the last 24 hours. Two other calves (of a group of 10) have died in the past week. The owner thinks the animals may have convulsed before they died. The other calves had loose, bloody stools and were being treated for presumed coccidiosis with amphotericin, as well as with trimethoprim-sulfa and a multivitamin complex.

On physical examination of this 6-month-old calf, all vital signs are mildly elevated. The animal is depressed, is in left lateral recumbency, and has its head back (i.e., opisthotonos). Reflexes are intact, but the calf will not support itself in sternal recumbency. Menace reflex is absent bilaterally, but pupillary light reflexes are intact, and there is a dorso medial strabismus. The state of hydration and mucous membranes are normal, feces appear to be formed, and there is normal rumen motility. What is the most likely diagnosis?

1. Lead toxicity
2. Polioencephalomalacia
3. Nervous coccidiosis
4. Thromboembolic meningencephalitis (TEME)
5. Vitamin A deficiency

54. Of the following treatments, the best therapy for acute coliform mastitis is:

1. Intramammary treatment with gentamicin.
2. Systemic antibiotics, corrective trimming, and footbaths.
3. Stripping the affected quarters frequently.
4. Intravenous calcium.
5. 500 mg of dexamethasone twice daily for 7 days.

55. A veterinarian auscultates a 2-month-old calf that is small for its age. On auscultation, the veterinarian hears a grade III pansystolic murmur on both sides of the chest. When a cardiac catheterization is performed, elevated cardiac pressures, particularly in the right ventricle, are found. The most likely heart defect is:

1. Patent ductus arteriosus (PDA)
2. Ventricular septal defect (VSD)
3. Vegetative endocarditis involving the right atrioventricular (AV) valve.
4. Right AV valve insufficiency.
5. Aortic insufficiency.
66. An effective intestinal parasite control program for sheep in North America would NOT include:  
(1) prelambing deworming of adults withivermectin.  
(2) deworming of lambs in the spring before turning them out on pasture.  
(3) raising lambs indoors and feeding hay from elevated racks.  
(4) use of pastures grazed by cattle for rotation into sheep grazing.  
(5) deworming of feeder lambs every 3 weeks during the winter with thiabendazole.

67. Clinical findings with dental disease in horses include all of the following EXCEPT:  
(1) quidding.  
(2) eating hay in preference to grain.  
(3) slow, painful mastication.  
(4) weight loss.  
(5) choke.

68. A dairy cow in the second week of lactation is noted to have pale mucous membranes, tachycardia, weakness, and atony. Which one of the following would NOT be a logical course of action?  
(1) Increase efforts to control arthropods.  
(2) Examine the phosphorous content of the ration.  
(3) Examine urine by dark-field microscopy.  
(4) Check the animal’s diet for oxidant-containing plants.  
(5) Examine erythrocytes for rickettsial organisms.
69. All of the following patients should undergo surgical repair for patent urachus EXCEPT:

(1) A hospitalized foal younger than 5 days old with a normal rectal temperature, normal results on a complete blood count (CBC), and a normal fibrinogen concentration.

(2) A foal with urine continuing to dribble from the urachus 1 week following cauterization with silver nitrate.

(3) A foal in which ultrasound examination of the umbilicus reveals urachal abscess.

(4) A foal with an umbilicus that is hot and painful on palpation and exuding a purulent discharge.

(5) A foal that has evidence of subcutaneous fluid accumulation in the area of the external umbilical remnants.

70. A Holstein calf is suspected of having bovine leukocyte adhesion deficiency (BLAD). Which one of the following findings is NOT characteristic of BLAD?

(1) Persistent neutropenia

(2) Lymphadenopathy

(3) Gingivitis

(4) Fever

(5) Bronchopneumonia

71. Several weanling beef calves die from excessive hemorrhage after dehorning. The farmer has additional calves to dehorn. Which one of the following recommendations would NOT be correct?

(1) Determine that the prothrombin time is normal before dehorning more calves.

(2) Only feed sweet clover as silage.

(3) Analyze feed for dicoumarol or related compounds.

(4) Treat calves with vitamin K1.

(5) Discard all moldy sweet clover hay.

ANSWERS AND EXPLANATIONS

1. The answer is 5 [Chapter 16 III D 2]. This clinical picture best fits primary copper deficiency or molybdenum excess. Ergot (Claviceps purpurea) contamination of feed results in gangrene of the extremities. Chronic selenium toxicity results in laminitis and hair loss, which is usually most prominent on the tail. Lactone toxicity clinically presents as increased lacrimation, epiphora, nasal discharge, seborrhea, and hair loss.

2. The answer is 2 [Chapter 11 I 1]. The set of clinical findings best describes oral necrobacillosis (necrotic stomatitis). Actinobacillosis involves the tongue, whereas actinomycosis is an osteomyelitis usually of the mandible. Vesicular exanthema is a disease of swine. Bovine papular stomatitis produces only mild clinical signs with oral papules or coalescent lesions on the muzzle and oral mucous membranes.

3. The answer is 3 [Chapter 8 II 6 c]. Bacterial endocarditis (BE) in swine is frequently caused by either Streptococcus species or Erysipelothrix rhusiopathiae. Actinobacillus equuli is one of the two common organisms associated with the disease in horses. Actinomyces pyogenes is frequently isolated from affected cattle.

4. The answer is 2 [Chapter 10 III A 3 b (1)]. In equine Cushing's disease, polyuria may result from excessive cortisol secretion. Excessive cortisol secretion results from chronic adrenocorticotropic hormone (ACTH) release by the pituitary gland. High cortisol levels may block antidiuretic hormone (ADH) or its effect on the kidney. Also, the hyperglycemia resulting from excessive corticosteroid levels may cause an osmotic diuresis.

5. The answer is 2 [Chapter 4 II B 1, 2]. Both Johne's disease and visceral caseous lymphadenitis (CLA) cause chronic weight loss in adult goats. Coccioidosis causes diarrhea in young ruminants, whereas gastrointestinal helminths usually produce a herd level problem with poor growth rates and poor performance. Abomasal emptying defect is a specific condition reported only in Suffolk sheep.

6. The answer is 5 [Chapter 12 I A 3 a, 4]. In a horse with the acute onset of diphtheritic, tearing, and photophobia, fluorescein dye should be applied to the cornea to detect any ulcers. If ulcers are present, correct therapy entails the administration of antibiotics and antivirals. Antiviral agents have not been employed with any reliability and in this case, the lesion is only in one eye, decreasing the likelihood of a systemic viral event, which more commonly results in bilateral lesions. Broad-spectrum antibiotics are not necessary if there is no ulcer or severe conjunctivitis present. If overused, broad-spectrum antibiotics may lead to myotic superinfection.

7. The answer is 5 [Chapter 5 II II A 3 a, 2]. Recurrent abdominal pain, obstructive icterus (as evidenced by the increased serum levels of cholestatic enzymes, conjugated bilirubinemia, and bilirubinuria), and an inflammatory leukogram are most consistent with a diagnosis of choledolithiasis. Thelier's disease does not present as recurrent abdominal pain, or with laboratory evidence of obstructive icterus. Tyzzer's disease is a disease of young foals, not adult horses. Horses with either thromboembolic colic or a mesenteric abscess will present with recurrent abdominal pain and an inflammatory leukogram, but not with signs of obstructive icterus.

8. The answer is 2 [Chapter 2 I A 2]. Some colics that respond to medical management, such as those due to gastric dilatation, present with severe pain and anxiety. Clinical examinations should be performed as much as possible without sedation of the animal so as not to mask clinical findings. Rectal examinations should always be performed as part of the complete physical examination when presented with a horse exhibiting abdominal pain. Abdominal distention is not present in cases of small intestinal obstruction because any distention is restricted by the thoracic cage. High rectal temperatures are most often associated with non-surgical conditions, such as bacterial infections.

9. The answer is 2 [Chapter 3 I C 2]. Cecal torsion or abomasal volvulus are the most likely causes of this cow's distress. The gas-filled viscus on the right side of a mature cow...
must be either the ocum or the abomasum. This cow is clearly in shock, suggesting that circulation to the viscus must be compromised. Therefore, the viscus is most certainly twisted (as a result of torsion or volvulus), rather than simply displaced or distended. A diffuse peritonitis may produce auscultable abdominal gas, but the ability to detect the displaced viscus via rectal palpation defines the involvement of the abomosum or cecum.

10. The answer is 3 [Chapter 14: T A 2 c (1)]. Compared with human beings and small animal species, all large animals, particularly small ruminants, have relative microcytosis. True microcytosis is most commonly seen with iron deficiency, when erythrocytes contain less hemoglobin than normal.

11. The answer is 4 [Chapter 11: T D 2]. Individual cattle may exhibit nervous signs (convulsions) with coccidiosis. Coccidiosis is most common in a disease associated with high morbidity rates, many animals are affected but low mortality rates (i.e., few animals die). Although Eimeria species are commonly pathogenic to ruminants, Isospora species cause less frequent outbreaks. Feeding of individuals is less rewarding than prevention, which is carried out through a combination of coccidiosis and improvements in hygiene. Animals may be exposed to disease (i.e., prior to the passage of oocysts in the feces, but healthy animals can also shed fecoal oocysts.

12. The answer is 2 [Chapter 18: VC 3]. γ-Glutamyl transferase activity greater than 300 IU/L usually indicates that a calf has consumed adequate amounts of colostrum. Colostal GGT concentration in the bovine is approximately 300 times the serum GGT concentration. Diagnoses of sepsisemia or liver involvement are unlikely in a calf that appears systemically healthy. Renal failure should not cause an increase in GGT activity in serum.

13. The answer is 1 [Chapter 9: II B]. Hyperkalemic periodic paralysis (HYPP) is described as a disease of horses (Quarter horses, Appaloosas, American pointer, and Quarter horse crosses) and humans. In humans, it is referred to as HYPP or adynamia episodica hereditaria. Defective sodium channels in the nervous system remain open after membrane depolarization, allowing excessive inward sodium movement and heightened membrane depolarization.

14. The answer is 5 [Chapter 7: B 4 b]. Acinobacter pleuropneumoniae causes porcine pleuropneumonia. When introduced into naive herds, the bacteria cause signs of pneumonia (fever, coughing, abnormal respiratory patterns). Morbidity and mortality rates are usually highest in the feeder pig population.

15. The answer is 2 [Chapter 13: II B 2.5]. This set of clinical findings (i.e., swollen abscesses on the mandibles that discharge a thick, yellowish material and do not resolve with antibiotic treatment) best describes actinomycosis (lumpy jaw). Cancerous, degenerative, or nutritional deficiencies do not match the clinical findings or subjective information presented.

16. The answer is 1 [Chapter 16: V F 2]. Diamond-shaped skin lesions occurring in pigs that are anorexic and feverish are most likely caused by porcine dermatitis and stress syndrome. Greasy pig disease is a seborrheic skin condition. Ringworm is not accompanied by systemic signs. Sporotrichosis is a nodular disease of horses. Sarcotic mange affects pigs, but the primary clinical finding is pruritus.

17. The answer is 2 [Chapter 17: I C 6 b]. The set of clinical findings (i.e., sudden drop in milk production, papillary swelling of all four quarters in affected cows, concurrent problems with pneumonia and lameness, fine grit in the bottom of the sample cup) best fits the pattern of disease experienced with an outbreak of Mycoplasma mastitis.

18. The answer is 1 [Chapter 8: II C 2. 5]. The horse is suffering from jugular vein thrombophlebitis. The horse has several of the predisposing factors for the development of this condition, including protracted duration of catheter indwelling (more than 3 days), indwelling endotoxemia or septicaemia from colitis leading to a coagulopathy, and administration of plasma and other fluid products through the catheter. Chronic impaction of the small intestine would more likely be associated with colic than diarrhea.

22. The answer is 3 [Chapter 10: VII C 2]. Horses with anhidrosis may be completely unable to sweat or exhibit only partial sweating. Serum sodium levels are not affected, and the condition is not known to be inherited. There is no age, breed, or sex predilection. Anhidrosis is diagnosed by clinical findings, and treatment is symptomatic.

23. The answer is 2 [Chapter 8: V B 1]. Sheep and goats (particularly young animals) are more susceptible to the signs of gosspol toxicosis than cattle. Adult ruminants are able to detoxify gosspol by forming stable complexes with soluble proteins in the rumen. The 22% protein/trace mineral supplement labeled for beef cattle, which was being fed, revealed high amounts of gosspol/kg in the supplement, and there were also high amounts of gosspol in the concentrate mix. Gosspol toxicity results in cardiomyopathy by inactivating enzymes that are important in allowing myocardial cells to respond to oxidative stress. The sheep were adequately dewormed, so chronic parasitism or liver flukes were unlikely. Acute hepatic intoxication (resulting in gastrointestinal or neurologic signs before causing congestive heart failure (CHF)), Ovine progressive pneumonia virus infection usually results in pneumonia in older goats or may be a cause of I III or mastitis.

24. The answer is 2 [Chapter 11: I C 1 b (1), 2 (b) (1)]. Blindness is a finding in calves with polioencephalomalacia and in cattle with lead poisoning. Recurrent uveitis (blindness) in horses often develops as a sequelae to systemic leptospirosis; however, neither listeriosis in sheep nor vitamin D intoxication in cattle have blindness associated with the clinical picture.

25. The answer is 4 [Chapter 5: I A 1 c e]. The organism most often responsible for causing liver abscesses is Fusobacterium necrophorum. Long-term penicillin or tetracycline therapy is indicated for the treatment of individual affected animals.

26. The answer is 5 [Chapter 14: I D 2 a (2) (c), d)]. The intraerythrocitary protozoan of genus Babesia commonly cause intravascular hemolysis, whereas rickettsial organisms and oxidative agents frequently cause intravascular hemolysis. Cobalt deficiency is associated with depression anemia but not hemolysis.

27. The answer is 1 [Chapter 21: II B 11]. The most likely diagnosis in this case is feal beat
diarrhea. These patients require symptomatic and supportive care only (e.g., application of petroleum jelly to the perineum). Other tests and treatments are only warranted if clinical signs deteriorate or if the condition persists. Observing the foal closely is valuable advice but separating the foal and the mare and providing for only two daily feedings would surely limit calorie intake for the foal. Mecocinosis is a condition in younger foals presenting with straining, inappetence, abdominal distention, and an inability to pass feces.

28. The answer is 5 [Chapter 7 F 2 b]. The clinical examination best fits chronic obstructive pulmonary disease (COPD). The cough reflects a pulmonary hyperreactivity to airborne antigens, and the lower airway cytology will be neutrophilic because of immune, rather than bacterial, stimulation. Failure of the atopic challenge test reflects a chronic, irreversible bronchospasm, which indicates limited value of bronchodilator therapy. Management practice to reduce environment dust and pollution must be continuous and permanent. Likewise, low-dose corticosteroids may be instituted as long-term therapy in the chronically affected horse. Finally, nondegenerative neutrophils in the bronchoalveolar exudate is suggestive of COPD.

29. The answer is 5 [Chapter 8 II B 6 e]. The clinical findings best support a diagnosis of right-sided heart failure and tricuspid regurgitation. Right-sided heart failure and tricuspid regurgitation may be caused by bacterial endocarditis, septic pericarditis, and myocardial lymphosarcoma, as well as by cor pulmonale. Aortic valve insufficiency produces a left-sided heart murmur with subsequent signs of congestive heart failure (CHF). Pyrrolizidine alkaloid toxicosis produces hepatic dysfunction with resultant liver, central nervous system (CNS), gastrointestinal, or skin disease. Acute grain overload causes bloating, depression, dehydration, acidemia, diarrhea, and death.

30. The answer is 2 [Chapter 4 A 1 3]. Pulpy kidney disease (i.e., overeating diarrhea) is caused by Clostridium perfringens Type D. The most common manifestation is sudden death in growing sheep on high-energy feeding (i.e., bloat diarrhea). Clinical signs usually present as fever, depression, and hemorhagic diarrhea. Shipping fever is a disease of beef cattle characterized by pneumonia. Abomasal empyema defect, a condition of Sulfolk sheep, causes signs of anorexia and chronic wasting. Coccidiosis causes a severe, watery diarrhea in lambs.

31. The answer is 5 [Chapter 18 II C 2 c (3); IV A 2 b (1), B 1 a (2)]. Table 18-31. The risk factors present in this foal are poor colostral quality, fetal distress/anoxia in utero, delayed colostral intake, and dysmaturity. The mare leaked colostroin prior to delivery, therefore, colostral quality is probably poor. Mecocinum staining indicating that fetal distress/anoxia was present during the birth process. Colostral intake was delayed; foals should start suckling no later than 3 hours after birth. Although the foal was not born prematurely by any definition, many characteristics indicating dysmaturity, including a silky haircoat, lax flexor tendons, and a domed forehead.

32. The answer is 1 [Chapter 3 B 2 e (3); Chapter 4 B 1 B 1]. Both clinically and subclinically affected animals will shed Mycobacterium paratuberculosis, which may then be ingested by susceptible animals. M. paratuberculosis infection, also known as Johne's disease or paratuberculosis, can affect cattle and small ruminants, but is not known to infect pigs. Infection initially causes histologic lesions in the small intestines and associated mesenteric lymph nodes and later affects the large intestine. M. paratuberculosis is not invariably fatal. There is evidence that the organism may be acquired and eliminated by many animals. Although diarrhea occurs in diseased cattle, in small ruminants (i.e., sheep and goats) it is more common to find emaciation without diarrhea.

33. The answer is 2 [Chapter 13 A 2 a (2); a)]. White muscle disease is the most likely condition given the set of clinical findings. Paralytic myoglobinuria occurs in older, heavily muscled animals. Tying-up syndrome is a condition of horses, and blackleg of cattle results most commonly in death of older animals. With myoglobinemia, there should be evidence of a swollen, painful lesion usually over a joint.

34. The answer is 5 [Chapter 6 B 8]. The Jersey cow has clinical signs that are typical for allergic rhinitis (i.e., characteristic color to the nasal discharge, bilateral nature of the discharge, nasal pruritus). The discharge from ethmoid carcinoma is more often unilateral and signs of blocked nasal passages are prominent, with no sneezing or nasal pruritus. Nasal bottle is not known to affect cattle. Malignant bovine cartilage (MBC) is a systemic disease with far more severe signs, such as erosion of the nares, fever, and lymphadenopathy. Infectious bovine rhinitritis (IBR) does not present with signs specific to nasal irritation.

35. The answer is 2 [Chapter 9 1 b 2 b]. Dairy calves on whole-milk diets are able to absorb less magnesium than they age. This set of clinical findings best fits a diagnosis of hypomagnesemic tetany. With polioencephalomalacia and lead poisoning, calves are blind or apparently blind. Tetanus presents with more tetanic signs, and nervous ketosis is a disease of early lactation mature cows.

36. The answer is 3 [Chapter 10 VI A 3]. In horses, primary hyperparathyroidism is the result of parathyroid hyperplasia or neoplasia.

37. The answer is 1 [Chapter 14 1 A 1 b (1)]. Multicentric lymphoma in adult cat (older than 3 years) is almost always associated with infection with the bovine leukemia virus (BLV). One of the other forms of lymphoma in horses is thought to have a viral etiology.

38. The answer is 5 [Chapter 2 B 4 c (2)]. Laminitis (caused by gastrointestinal disease), neonatal septicemias (many of which are caused by gram-negative infections), and proximal enteritis (believed to be associated with gram-negative overgrowth) can all be associated with endotoxemia. Endotoxin (lipopolysaccharide endotoxin) is the cell wall of dying gram-negative organisms. Therefore, stranges (Streptococcus equi) and colitis (Clostridium, and dermatophilis (Dermatophilus congolensis infection) — conditions produced by gram-positive organisms — do not result in endotoxemia. White muscle disease is a vitamin E deficiency of calves.

39. The answer is 2 [Chapter 7 A 3-4, B 4 a]. Clinical signs of pneumonia is described in calves, growing (feeder) pigs, sheep (particularly lambs), and kids. Enzootic pneumonia is a chronic, nonprogressive pneumonia characterized by a low mortality rate but producing significant growth retardation in affected animals. It is most prevalent under conditions of overcrowding and intensive management. In calves, the disease process may begin as a viral respiratory infection that may resolve or become complicated by bacterial infection, mycoplasma (e.g., Mycoplasma bovis, Mycoplasma dispar, Myco- plasma bovirhinis, Ureaplasma), or both (multifactorial). Mycoplasma hypopneumoniae is the most common cause of respiratory infection in feeder pigs. In lambs, infections caused by Mycoplasma ovipneumoniae, Bordetella parapertussis, Chlamydia, and some viruses are believed to predispose the lung to invasion by Pasteurella haemolytica, resulting in pulmonary damage.

40. The answer is 1 [Chapter 3 II B 3]. Although there are many possible, rational recommendations a veterinarian can make regarding prevention of neonatal calf diarrhea, the only sound one in this subset of selections is to decrease contamination in the calving area by improving hygiene. Vaccination of cows must occur at a time prior to production of colostrum to ensure adequate levels of maternal antibody (i.e., 8 weeks prior to parturition). Oral antibiotics have not been shown efficacious in the treatment of enterotoxigenic Escherichia coli (ETEC) and are certainly of no value against viral pathogens. Limiting the amount of milk fed to healthy calves has not been shown to prevent diarrhea and there is a growing body of literature that recommends maintaining scouring calves on at least some milk. Milk should never be mixed with oral electrolytes for feeding.

41. The answer is 2 [Chapter 6 II A 3 a (3) (d) (iii), (c)]. Respiratory signs may be accompanied by stiffness and transient limb edema. Mycoplasma bovis infection for the arrhythmia, may develop in complicated cases of equine influenza virus infection. Equine adenovirus infection is associated with only mild signs of respiration, and there are other complications. Equine rhinopneumonitis, caused by a herpesvirus, is unlikely to result in muscle damage. Equine viral arthritis (EVA) is unlikely to cause stiffness and is not associated with myositis or myocardiitis. The clinical signs described are not consistent with stranges.

42. The answer is 4 [Chapter 13 B 2 b]. Degenerating muscle cells release myoglobin at levels that exceed renal threshold and color the urine brown. Tying-up syndrome is caused by vitamin E or selenium deficiency. It is seen in all ages of horses, and although this syndrome may be an inherited disorder of glycosogen storage, it is not associated with liver disease.
43. The answer is 3 [Chapter 8 VA 1 b] 5 (3); V A 5 b. Bovine leukemia virus (BLV) sporadically causes multicentric lymphosarcoma. The right atrium is one of four common sites of neoplastic infiltration, including the uterus, internal and external lymph nodes, and the abomasum. The disease is virus-associated. Diagnosis includes the isolation of BLV from lymphocytes and histocardiographic evidence of a mass on the right atrium. Persistent lymphocytosis occurs in 33% of cattle infected with BLV. Bacterial endocarditis (BE) usually involves the tricuspid valve in cattle. Signs of right-sided heart failure, including dependent edema and distended jugular or mammary veins, are found in approximately one-third of cases. No lymphadenopathy would be expected. A complete blood count (CBC) often reveals hyperfibrinogenemia, neutrophilia, and monocytosis. Similar hematologic findings may be found with traumatic reticulopericarditis. Cranial abdominal pain and poor rumen motility may also be found. Borella burgdorferi has not been definitively identified in my smokable tissues in cattle. In other species, other clinical findings usually occur in conjunction with cardiac signs, including lameness and fever. Cor pulmonale caused by pulmonary hypertension usually results in respiratory signs as well as cardiac signs. Neither lymphadenopathy nor lymphocytosis usually occur.

44. The answer is 2. [Chapter 17 BI 2 a (7)]. The most economic and medically sound recommendation is to cull or segregate affected animals. Lactation therapy (systemic or intra-mammary) is an ineffective treatment. Dry cow therapy is routinely employed, but it does not make economic sense to dry off all cows immediately. Stripping affected quarters is recommended for individual cows suffering from an acute or severe episode of mastitis, but this is not appropriate with the subacute or subclinical mastitis seen on a herd basis with Staphylococcus aureus.

45. The answer is 5. [Chapter 7 8 4 a]. Mycoplasma hypopneumoniae is the causative agent for enzootic pneumonia in growing pigs. Porcine reproductive and respiratory syndrome (PRRS) appears as respiratory distress in piglets. Actinobacillus pleuropneumoniae can cause a chronic pneumonia but does not exhibit the same pathologic features as enzootic pneumonia. The subclinical and pathologic findings in the questibest describes an enzootic pneumonia. Although Pasteurella multocida is often a secondary invader, swine influenza virus is not known as a primary initiator. Inadequate ventilation by itself does not produce enzootic pneumonia.

46. The answer is 4. [Chapter 9 II 1]. Lactation tetany, grass tetany, grass staggers, and wheat pasture poisoning are synonyms for hypomagnesemic tetany. Milk fever is hypercalcemia. Alkaline disease is selenium toxicity. Capillosis is hypocalcemia (e.g., in lambs). "Downer" cow syndrome is recumbent without systemic signs (i.e., there is no tetany).

47. The answer is 2. [Chapter 15 II F 1]. Straining to urinate may be sufficient to pro-lapse the rectum, and obstructed sheep may also show tail wriggling. Signs of colic or discomfort usually abate when the bladder ruptures. A diverticulum in the penile urethra prevents the passage of a catheter. The ruptured bladder often spontaneously seals over in the steer. In sheep and goats, the blockage is usually sabulous (sandy), and the vermiform appendage may need amputation.

48. The answer is 4. [Chapter 2 III]. Squamous cell carcinoma of the stomach, malnutrition, granulomatous enteritis (lymphocytic-plasmacytic enteritis), or parasitism could all cause weight loss without other obvious clinical signs. A patient with chronic obstruction pulmonary disease (COPD) shows evidence of a compromised respiratory system (e.g., an increased respiratory rate and abnormal pattern) by the time the disease is advanced enough to cause weight loss. Liver fluke infestation (fasciolasis) is a disease of cattle, sheep, and goats. Lymphosarcoma is usually a disease of younger horses.

49. The answer is 3. [Chapter 11 E 2 b]. These signs suggest sepsis and possible meningitis, which can be detected by a CSF sample. In a foal, these signs are not typical for neonatal maladjustment syndrome (NMS). The animal was normal up until 3 days after birth. NMS usually causes clinical signs within the first 24 hours. Signs for BVD infection are cerebellar and are noted immediately at birth. Hydrocephalus and hydroptic encephaly should be noted at birth, and fever and stiff neck are not part of these brain diseases.

50. The answer is 1. [Chapter 13 II A 3 e]. Sole ulcer is a circumscribed ulcer at the heel—sole junction of the foot. It is best treated by trimming to expose the ulcer or pro-truding granulation tissue and paring away ex- cess granulation tissue followed by a pressure bandage over the site. Blocking up the unaf-fected claw on the lame leg will aid in ambu-lation and healing.

51. The answer is 2. [Chapter 14 II A 1 b]. Tumors within the spinal canal (such as lymphosarcoma) put pressure on the cord, pro-ducing signs of spinal cord disease (particu-larly in the hindlimbs). The bovine leukemia virus (BLV), which causes bovine leukemia, is spread via contact with blood of infected ani-mals. There is no effective vaccine against BLV. Many cows may be infected (virus-posi-tive), but few (possibly as low as 2%) develop solid tissue tumors (lymphosarcoma). There is no record of transmission of this disease to humans.

52. The answer is 3. [Chapter 21 B 1 3 f (1)-(2)]. All of the following may produce a b dominal pain in foals: meconium impaction, gastric ulceration, intussusception, ascarid impaction, abdominal hernias (if a loop of bowel is included within the hernial sac), and small intestinal volvulus. Cryptosporidiosis causes a nonpainful diarrhea in foals. Granulomatous enteritis causes a protein-losing and wasting enteropathy in adult horses.

53. The answer is 2. [Chapter 11 II C 1 b]. The animal most likely has poliopneumo-lacia (PEM) with cortical blindness and do-medial strabismus. The drug of choice for this calf is thiamine (vitamin B1). With lead toxicity, the rumen is usually static, and there should be no motility of the eyelids. Nerve coccidiosis is not associated with cold months, and there is no sign of coccidiosis. Also, the calf is cortically blind, which suggests poliopneumo-lacia as the lead toxicity.

54. The answer is 3. [Chapter 17 1 C 1 g]. Stripping the affected quarters as often as possible removes the endothorax, which causes the clinical signs. Intramammary therapy is not warranted because the growth phase of the organism has passed by the time clinical signs are evident. Also, intramammary therapy does not likely diffuse well in the swollen udder. Oral fluids are not efficacious unless combined with intravenous fluids (hypertonic or isotonic). Calcium salts may be an adjunct to therapy but are not invariably necessary and can cause cardiac toxicity if administered too rapidly intravenously. Subcutaneous ad-ministration of calcium may be considered. Dexamethasone is often indicated but only early in the course of the disease and only for one or two treatments.

55. The answer is 2. [Chapter 8 II A 1]. The calf has a ventricular septal defect (VSD). The small size of the calf suggests that the defect is large, producing a significant amount of blood that is shunted through the pulmonary circulation and a subsequent rise in venous re-turn to the left atrium and ventricle. The murmur associated with a VSD is usually pan-nicpid valvular disease usually produces a holo-systolic murmur with a point of maximal in-tensity (PMM) on the right side near the cardiac apex. The murmur associated with aortic insufficiency is holodiastolic, with the PMI over the aortic valve and radiating toward the left cardiac apex. Volume overload of the left ventricle may be present, resulting in impairment, in left ventricular function.

56. The answer is 2. [Chapter 14 ID]. The findings of acuteness of signs, anemia, icterus, a decreased packed cell volume (PCV), and plasma discoloration, and pigmenturia all sup-port a diagnosis of acute hemolytic anemia, which can be caused by babesiosis, equine infectious anemia (EIA), red maple leaf toxico-sis, and immune-mediated causes. Anaplasmo-sis is a hemolytic anemia of ruminants. Equine rhododendronphymiosis produces anemia (myoglobinuria) in sheep and goats. Pyelonephritis is most common in sows and cows, and is associated with the discharge of pus or blood from the urinary tract.

57. The answer is 1. [Chapter 11 II A 3 a-b, d]. These signs suggest equine protozoal myelo-neoplasia (EPM) because the animal is older than 3 years [the age when wobbles and equine degenerative myelopathy (EDM) have occurred] and because muscle atrophy (lower motor neuron) is present. Cervical radiographs with myelography are for vertebral malformation, which occurs earlier in life and has no muscle atrophy of unilateral nature. Green pasture and fodder with supplemental vitamin E suggests EDM, which has no muscle atrophy and usually occurs later in age. A cerebrospinal fluid (CSF) sample of high protein with the lack of inflammatory
cells suggests EHV-1, which has a more sudden onset and often involves other illnesses (e.g., respiratory disease, abortion). Equine protozoal myelitis (EPM) is the likely diagnosis, but eosinophils are not a feature of the CSF cytology.

58. The answer is 1 [Chapter 13 III A 1 b]. The clinical findings best describe infectious pododermatitis or pasture foot rot. Laminitis may precede stable foot rot or underrun sole, which are conditions of the sole.

59. The answer is 4 [Chapter 9 III B 1, C]. Neonatal hypoglycemia of piglets results in hypothermia, weakness, and failure to move out of the way of saws. Lactation tetany occurs in mares, whereas vitamin E selenium deficiency, iron deficiency, or liver disease are not commonly related to piglet crushing deaths.

60. The answer is 2 [Chapter 3 II B 3 d]. Cryptosporidium parvum causes cryptosporidiosis in young calves. Transmission of the organism is by the fecal-oral route. Cryptosporidiosis, characterized by transient secretory diarrhea in affected calves, is usually associated with a full recovery; however, C. parvum can be a serious pathogen in immunocompromised individuals or those with mixed enteric infections.

61. The answer is 1 [Chapter 14 I D 1 b (1) fl]. Neonatal isoerythrynosis in mule foals is due to the production of antibodies by the mare dam against the donkey blood antigen. Erythrocytes from any donkey would also be susceptible to lysis, and the mare's blood would contain additional antibody. Washed erythrocytes or whole blood from a horse donor would be the most effective treatment because plasma would not supply the necessary erythrocytes.

62. The answer is 3 [Chapter 2 I B 2 c (2), (3)]. Penduculated lipoma, parasitic larval migration, and intestinal foreign body can all cause chronic, recurrent bouts of colic in horses as a result of large colon impaction. Other correct differential diagnoses include enterolith, thromboembolic infarction, sand impaction, and feed impaction. Salmonellosis may cause signs of colic, but only in the acute phases of the disease and not chronically. Dictyocaulus arnfieldi is a lungworm that affects donkeys and horses.

63. The answer is 1 [Chapter 11 II C 2 b]. The chronic form of lead toxicity results in recurrent choke, regurgitation of food, and aspiration pneumonia. Snapping eyelids, cortical blindness, head pressing, facial or trigeminal nerve deficits, aggressive behavior, and convulsions are signs of cranial nerve deficits and are not features of acute lead poisoning. Blindness should be accompanied by pupils that react to light (cortical blindness) in subacute lead toxicity. The differential signs between polioencephalomalacia (PEM) and lead toxicity include normal motility in PEM and an atonic rumen in lead toxicity.

64. The answer is 5 [Chapter 18 IV D 3 a (1) b)]. An immunoglobulin G (IgG) concentration that exceeds 400 mg/dL in a healthy foal on a well-managed farm is usually considered adequate and a plasma transfusion is not required to supplement immunoglobulin. It would be futile to supplement the foal with oral immunoglobulins, because she would absorb very little at the age of 22 hours. Because the foal is not systemically ill, broad-spectrum bactericidal antibiotics are not indicated, and in fact may create resistant bacterial populations on this farm.

65. The answer is 5 [Chapter 4 II A 5 d]. Intensive deworming is not usually necessary in winter months in North America. Furthermore, repeated use of thiabendazole promotes parasite resistance to this anthelmintic. An effective intestinal parasite control program for sheep in North America would include pre-lambing deworming of adults with ivermectin, deworming of lambs in the spring before turning them out on pasture, raising lambs indoors and feeding hay from elevated racks, and the use of pastures grazed by cattle for rotation into sheep grazing.

66. The answer is 3 [Chapter 14 I E 1 a]. The regenerative response is most common following anemia caused by acute blood loss or hemolysis. Hemoglobin synthesis is impaired with iron deficiency anemia, and the marrow's ability to respond to anemia through increased erythrocyte production is depressed.

67. The answer is 2 [Chapter 11 I C 1 a]. Horses with dental disease often prefer grain over hay because there is less chewing involved. Symptoms of dental disease in horses include quidding; slow, painful mastication; weight loss; and choke.