

Name: _____

VMP 930 -- Lecture Exam #1
(100 points total)

Arthropods (32 points)

Multiple Choice (2 points each)

1. At a confinement hog farm, the farmer complains that some of his hogs have red crusty patches on their skin, especially their ears and that the hogs are scratching so much that they are destroying their pens and causing themselves harm (cuts, etc.). You suspect *Sarcoptes scabiei*, which diagnostic test will you use to confirm? [Circle the correct answer] (2 points)
 - A. Hair pluck
 - B. Superficial skin scrape
 - C. Deep Skin Scrape
 - D. Fecal Floatation
 - E. Fecal Sedimentation

2. Which is NOT a tick-associated pathology? [Circle the correct answer] (2 points)
 - A. Tick worry (decreased grazing, weight loss)
 - B. Wound production (potential bacterial and/or screw-worm invasion)
 - C. Generalized erythema and hyperkeratosis
 - D. Blood loss
 - E. Disease transmission

3. Which type of lice infestations can be treated with systemic insecticides? [Circle the correct answer] (2 points)
 - A. Chewing Lice
 - B. Sucking Lice

4. Which of the following control measures provides the most immediate efficacy of decreasing the flea population in a house? [Circle the correct answer] (2 points)
- A. Treatment of pets with an Adulticide
 - B. Treatment of pets with a Larvacide
 - C. Treatment of pets with a Larvacide and an Adulticide.
 - D. Vacuum carpets and upholstery
5. What types of diseases are transmitted by ticks? [Circle the correct answer] (2 points)
- A. Protozoal diseases
 - B. Bacterial diseases
 - C. Viral diseases
 - D. Rickettsial diseases
 - E. All the above
6. A client has an outdoor cat that has been diagnosed with flea bit allergy. Which of the following is NOT recommended? [Circle the correct answer] (2 points)
- A. Keep cat and other pets on flea preventative.
 - B. Clean pet beds often
 - C. Vacuum house frequently.
 - D. Continue to allow the cat to go outdoors
7. An organic dairy farm near Elon NC has recently invested in a Fly Vac. Whenever, the cows return to the milking parlor, they walk under the vacuum, which removes large numbers of flies that are almost always found on the backs of cows. Which fly is the Fly Vac most likely targeting? [Circle the correct answer] (2 points)
- A. *Musca domestica*
 - B. *Musca autumnalis*
 - C. *Calliphora vomitoria*
 - D. *Stomoxys calcitrans*
 - E. *Haematobia irritans*

8. When treating cattle for *Hypoderma spp.* infestations, one should follow recommended treatment fly dates. So that one does not treat the cattle too late. Why? [Circle the correct answer] (2 points)
- A. drug efficacy against late stage migrating larvae is much less than against early stage larvae.
 - B. late stage larvae secrete toxins leading to muscle paralysis
 - C. late stage larvae sensitize the host to have immediate type hypersensitivity reactions even without drug treatment
 - D. late stage larvae migrate through the wall of the esophagus or the spinal canal where dead larvae from delayed drug treatment cause tissue reactions leading to bloat or paralysis.
9. Which poultry mite attacks birds at night but hides in the environment during the day; and causes irritation and decreased production? [Circle the correct answer] (2 points)
- A. *Dermanyssus gallinae*
 - B. *Ornithonyssus sylviarum*
 - C. *Otodectes cynotis*
 - D. *Demodex gallinarium*
 - E. *Eimeria tenella*
10. What type of tick life cycle does the following describe? *Rhipicephalus evertsi* male & female ticks feed and mate on their cattle host. After feeding, the female tick drops off the cow and lays eggs in the environment. Larvae hatch from the eggs and attack a rabbit. The larvae and nymph stages live and feed on the same rabbit. After feeding, the nymph drops off the rabbit, molts, and attacks a cow host. [Circle the correct answer] (2 points)
- A. 1-host tick
 - B. 2-host tick
 - C. 3-host tick

15. Which of the following adult flies is an important mechanical vector for pink-eye in cattle? [Circle the correct answer] (2 points)

A. *Musca domestica*

B. *Musca autumnalis*

C. *Phaenicia sericata*

D. *Stomoxys calcitrans*

E. *Haematobia irritans*

16. As a Small Animal Veterinarian, one of your first cases is a very emaciated rescue dog that has a strong smell of necrosis. When you take off his very large leather collar, you find a much-neglected wound that has many fly larvae infesting the necrotic wound. Which fly larvae are these? [Circle the correct answer] (2 points)

A. *Oestrus sp.*

B. *Musca autumnalis*

C. *Phormia regina* (blow fly)

D. *Stomoxys calcitrans*

E. *Cuterebra sp.*

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Protozoa (68 points)

17. Which protozoan parasite is rare in the US and causes chronic heart disease in dogs? [Circle the correct answer] (2 points)

A. *Leishmania infantum*

B. *Cystoisospora canis*

C. *Trypanosoma cruzi*

D. *Sarcocystis cruzi*

E. *Neospora caninum*

18. Which protozoan parasite is rare in US dogs, infecting the macrophage system and manifests various clinical signs including skin & eye issues as well as lymphadenopathy? [Circle the correct answer] (2 points)
- A. *Leishmania infantum* B. *Cystoisospora canis*
C. *Sarcocystis cruzi* D. *Trypanosoma cruzi*
E. *Neospora caninum*
19. Which Systemic Apicomplexan of canids is a double threat by causing neurologic issues in dogs as well as late term abortions in cattle? [Circle the correct answer] (2 points)
- A. *Trypanosoma cruzi* B. *Cystoisospora canis*
C. *Sarcocystis cruzi* D. *Neospora caninum*
E. *Leishmania infantum*
20. *Sarcocystis neurona* causes neurologic disease in horses. What is the best diagnostic test for diagnosing *S. neurona*? [Circle the correct answer] (2 points)
- A. Fecal Floatation B. Gram-stained blood smear
C. Fecal Sedimentation D. Baermann Test
E. Western Blot assay of spinal fluid
21. A young cat, purchased from a breeder, is brought into your clinic with persistent smelly diarrhea. The cat is healthy, bright, and alert. The owner reports diarrhea that is waxing and waning, with the cat frequently straining but producing small amounts of diarrhea with each effort. Which feline protozoan should you most suspect? [Circle the correct answer] (2 points)
- A. *Cystoisospora rivolta* B. *Tritrichomonas foetus* (feline)
C. *Giardia spp.* Assemblage F D. *Cystoisospora felis*
E. *Toxoplasma gondii*

26. Which bovine protozoan invades the microvilli of intestinal epithelial cells ?
[Circle the correct answer] (2 points)

A. *Eimeria bovis*

B. *Tritrichomonas foetus*

C. *Neospora caninum*

D. *Cryptosporidium parvum*

E. *Eimeria zuernii*

27. Bloody calf scours, when the calf is over 21 days old, is most likely caused by which protozoan parasite ? [Circle the correct answer] (2 points)

A. *Cystoisospora ohioensis*

B. *Cryptosporidium parvum*

C. *Sarcocystis cruzi*

D. *Tritrichomonas foetus*

E. *Eimeria bovis*

28. Piglets, 10 days old, have yellowish-gray diarrhea. You suspect *Cystoisospora suis*. But to confirm you take a fecal sample and incubate for 4 days, You then do a fecal float and find sporulated oocysts. You confirm that the offending protozoan is indeed *Cystoisospora suis* because the sporulated oocysts contain _____ . [Circle the correct answer] (2 points)

A. 4 sporocysts

B. 2 sporocysts

29. A shepherd complains of lamb abortions. Once you arrive at the farm, the shepherd informs you also that 2 sheep were put down due showing signs of neurologic deficits, specifically they had developed a circling behavior. During your visit to the farm, you notice many "barn cats" roaming around. Which apicomplexan parasite do you suspect? [Circle the correct answer] (2 points)

A. *Haemonchus contortus*

B. *Cryptosporidium parvum*

C. *Toxoplasma gondii*

D. *Tritrichomonas foetus*

E. *Eimeria ovinoidalis*

30. Which feline protozoan causes a disease that is seasonal (spring & summer), with clinical signs of febrile disease, dyspnea, jaundice, and lab diagnostics showing pancytopenia, hyperbilirubinemia and schizont-laden macrophages on blood smear? (2 points)
- A. *Toxoplasma gondii* B. *Cytauxzoon felis*
C. *Babesia gibsoni* D. *Cystoisospora rivolta*
E. *Tritrichomonas foetus feline*
31. Because Imidocarb is used for the treatment of *Babesia canis*, while a combo of Atovaquone & Azithromycin is used for *Babesia gibsoni*; it is best to distinguish between an infection of *Babesia canis* and *Babesia gibsoni*. Which is the best, most reliable test to determine between the *Babesia* species? [Circle the correct answer] (2 points)
- A. PCR B. Serology
C. Fecal Centrifugation D. Blood Smear
E. CBC & Chemistry Panel
32. Which parasite is endemic in South and Central America and is often transmitted by Triatomid (Reduviid) bugs by Stercorarian transmission? [Circle the correct answer] (2 points)
- A. *Leishmania infantum* B. *Cystoisospora canis*
C. *Sarcocystis cruzi* D. *Trypanosoma cruzi*
E. *Neospora caninum*
33. Although this parasite is often associated with travel to Southern Europe & the Mediterranean, autochthonous infections have also been reported from US Foxhounds. What is this protozoan parasite? [Circle the correct answer] (2 points)
- A. *Neospora caninum* B. *Cystoisospora canis*
C. *Sarcocystis cruzi* D. *Trypanosoma cruzi*
E. *Leishmania infantum*

34. Which Systemic Apicomplexan of canids not only causes late term abortions in cattle, but may also pass via transuterine transmission to successive cattle generations (transgenerational), resulting in the potential need to cull infected cattle? [Circle the correct answer] (2 points)
- A. *Trypanosoma cruzi* B. *Cystoisospora canis*
C. *Sarcocystis cruzi* D. *Neospora caninum*
E. *Leishmania infantum*
35. A horse becomes infected with *Sarcocystis neurona* by _____ .
[Circle the correct answer] (2 points)
- A. ingesting sporocysts from dog feces
B. being bitten by an infected *Amblyomma americana*
C. being bitten by an infected *Lutzomyia* Sandfly
D. ingesting sporocysts from opossum feces
E. ingesting oocysts from cat feces
36. Although neurotoxic with a narrow safety margin, what is the recommended treatment for cats with *Tritrichomonas foetus* (feline)? [Circle the correct answer] (2 points)
- A. Metranidazole B. Ivermectin
C. Rodinazole D. Monensin
E. Fenbendazole
37. Kittens infected with *Cystoisospora felis* often suffer from diarrhea. What tissue is this coccidian infecting? [Circle the correct answer] (2 points)
- A. Cardiac Muscle B. Red Blood Cells
C. Macrophages D. Intestinal Epithelium
E. Neural Tissue

38. What is the result of *Tritrichomonas foetus* infections in cattle? [Circle the correct answer] (2 points)
- A. Watery calf scours
B. Early abortions
C. Bloody calf scours
D. Late abortions
E. Asymmetric muscle atrophy
39. True or False. Because of the concern over *Giardia sp.* developing resistance to Metronidazole and Fenbendazole, CAPC recommends treating all patients whether they have diarrhea or not. [Circle the correct answer] (2 points)
- A. True
B. False
40. How might one control the abortion causing protozoan, *Sarcocystis cruzi*? [Circle the correct answer] (2 points)
- A. Elimination of Stray Canids, Don't feed offal / scraps to dogs
B. Fecal sanitation, Coccidiostats
C. Use Sanitary Artificial Insemination, Surveillance of Bulls
D. Elimination of Stray Felids, Eliminate Rodent paratenic hosts
E. Keep Opossums out of feed bins, Eliminate fruit trees in pastures
41. Watery diarrhea or pale, yellow calf scours, when the calf is between 7 to 14 days old, is most likely cause by which protozoan parasite? [Circle the correct answer] (2 points)
- A. *Eimeria bovis*
B. *Cryptosporidium parvum*
C. *Sarcocystis cruzi*
D. *Tritrichomonas foetus*
E. *Eimeria tenella*

47. Which 2 apicomplexans are of serious zoonotic concern, especially for immunodeficient people? [Circle the correct answer] (2 points)
- A. *Sarcocystis neurona* & *Sarcocystis cruzi*
 - B. *Eimeria zuernii* & *Cystoisopora rivolta*
 - C. *Toxoplasma gondii* & *Cryptosporidium parvum*
 - D. *Neospora caninum* & *Tritrichomonas foetus*
 - E. *Cystoisopora ohioensis* & *Babesia gibsoni*
48. Which protozoan parasite produces thin-shelled oocysts that allow the oocyst to hatch within the same host, resulting in autoinfection and possibly a fatal hyperinfection? [Circle the correct answer] (2 points)
- A. *Cryptosporidium parvum*
 - B. *Eimeria bovis*
 - C. *Sarcocystis cruzi*
 - D. *Tritrichomonas foetus*
 - E. *Eimeria tenella*
49. *Toxoplasma gondii* is a serious zoonotic disease for pregnant women, with the potential for causing fetal defects. There are 4 important points of advice for a pregnant female to do if she is concerned about becoming infected with *Toxoplasma gondii*. Which one of the following is NOT one of those 4 points of advice? [Circle the correct answer] (2 points)
- A. Know your immune status, as well as your cat's immune status
 - B. Treat cat with coccidiostats daily for first 3 months of female's pregnancy
 - C. No litter box duty
 - D. No raw meat
 - E. Sanitary kitchen (wash raw vegetables, wash meat knives & cutting boards)

50. Paratenic hosts are of concern for controlling parasites, as they are important for the continuation of the parasite life cycle and population. Which list for parasites can utilize paratenic hosts to transport them to the host? [Circle the correct answer] (2 points)

- A. *Cystoisospora* spp., *Toxoplasma gondii*
- B. *Eimeria bovis*, *Sarcocystis cruzi*
- C. *Giardia* spp., *Tritrichomonas foetus*
- D. *Cryptosporidium parvum*, *Eimeria zeurnii*
- E. *Babesia canis*, *Cytauxzoon felis*