Name: _____

VMP 930 -- Final Exam

(2 points each question; 200 points total)

(Each question has one correct answer)

1. Paratenic vertebrate hosts help to maintain the parasite population. Which of the parasites below can utilize paratenic hosts?

A. *Eimeria bovis*
B. *Tritrichomonas foetus*
C. *Cystoisospora canis*
D. *Cryptosporidium parvum*

2. Of the following protozoa, which is **not** known to be zoonotic?

A. *Giardia duodenalis*
B. *Cryptosporidium parvum*
C. *Neospora caninum*
D. *Toxoplasma gondii*

3. A dog presents to you with diarrhea. Based on the clinical presentation and history, you are highly suspicious of Giardia. What are the best next steps to confirm diagnosis?

A. Antigen ELISA detection test
B. Direct microscopic fecal analysis
C. Fecal PCR test
D. Combine options A and B

4. Choose the primary mechanisms by which most pathogenic protozoa are able to damage cells of host animals.

A. Sexual multiplication
B. Asexual multiplication (also known as binary fission)
C. DNA mutation
D. Cyst formation

5. Equine Protozoal Myeloencephalitis (EPM) _____

A. can be completely cured using antiprotozoal drugs.
B. will always resolve on its own.
C. can be treated using a short course of anti-inflammatory drugs.
D. can be treated using antiprotozoal drugs leading to clinical remission, but the horse will likely never be completely cleared of the organism.

6. Which of the following sources of meat is not likely to contain infectious *Toxoplasma organisms*?

A. Pork sausage
B. Lamb chops
C. Fresh raw salmon
D. Smoked chicken sausage

7. *Tritrichomonas foetus* infection in cows and heifers_____

A. is self-limiting and the pathogen is eventually cleared.
B. does not cause significant clinical disease, but cows can remain infected for life.
C. can cause diarrhea.
D. can encyst in the muscle.

8. A new pig farmer is worried about a recent outbreak of *Cystoisospora suis* in his piglets. Of the options below, what is the risk to his pig?

A. Low Morbidity and High Mortality
B. Low Mortality and High Morbidity

9. What measures are most appropriate for controlling *Sarcocystis neurona*?

A. Elimination of stray canids, don't feed offal to dogs
B. Fecal sanitation, coccidiostats
C. Use sanitary artificial insemination, surveillance of bulls
D. Keep opossums out of feed bins, eliminate fruit trees in pastures

10. Calf scours in a calf that is over 21 days old is most likely caused by which protozoan parasite?

A. *Tritrichomonas foetus*
B. *Cystoisospora* spp.
C. *Eimeria zurneii*
D. *Cryptosporidium parvum*

11. *Leishmania infantum* primarily infects which mammalian host cell?

A. Erythrocyte
B. Macrophage
C. Enterocyte
D. Cardiac muscle cells

12. *Sarcocystis cruzi* has a heteroxenous life cycle involving which of the following pairs of hosts?

A. Felids and rodents
B. Opossums and horses
C. Canids and small mammals
D. Canids and cattle

13. A farmer consults with you because his chickens have coccidiosis. You recommend several management changes, one of which includes:

A. Raise the water troughs up off the floor
B. Put a thick layer of liter to absorb all the waste
C. Keep young birds in with adults so they will acquire immunity
D. Only treat the chickens that are sick

14. The species of coccidia infecting _____can be determined by examining lesions that develop in different regions of the gastrointestinal tract.

A. sheep
B. chickens
C. horses
D. cows

15. Promastigote and amastigote are life stages of which vector-transmitted flagellate?

A. *Trypanosoma cruzi*
B. *Leishmania infantum*
D. *Giardia duodenalis*
E. *Tritrichomonas blagburni*

16. Of the options below, how can an animal become infected with *Sarcocystis neurona*?

A. ingesting sporulated oocysts from raccoon feces
B. ingesting sporulated oocysts from dog feces
C. ingesting cattle afterbirth
D. ingesting sporocysts from opossum feces

17. Giardia infection may result in maldigestion and malabsorption due to which of the following?

A. Inflammatory disease in the colon
B. Direct destruction due to intracellular expansion inside epithelial cells and intestinal villi
C. Indirect destruction due to damage to the epithelial cells and blunted intestinal villi
D. Initiating an autoimmune response in the small intestines

18. Which apicomplexan can cause abortions in cattle and neurological disease in puppies?

A. *Sarcocystis neurona*
B. *Toxoplasma gondii*
C. *Neospora caninum*
D. *Sarcocystis cruzi*

19. *Cystoisospora* species are:

A. able to infect hooved stock and poultry
B. not very host specific
C. common coccidian of carnivores
D. not able to form cysts in tissues of paratenic hosts

20. The primary therapy for calves with scours caused by coccidia **_____.**

A. probiotics
B. intravenous fluid support
C. antibiotics
D. vitamins

21. Which is the best, most reliable diagnostic test to determine the infective *Babesia* species?

A. Blood smear and microscopy
B. Lymph node aspirate and microscopy
C. Serology
D. PCR test

22. Which protozoa infection is transmitted by *Amblyomma americanum* and often results in high fever, dyspnea, jaundice, pancytopenia, hyperbilirubinemia, and death if not treated?

A. *Toxoplasma gondii*
B. *Leishmania infantum*
C. *Babesia vogeli*
D. *Cytauxzoon felis*

23. How do cattle become infected with *Sarcocystis cruzi*?

A. ingesting oocysts from racoon feces
B. ingesting sporocysts from opossum feces
C. invertebrate tick vector
D. ingesting sporocysts from dog feces

24. You are presented with pit bull breed dog that has several old bite wounds. The dog is febrile and has an enlarged spleen. Evaluation of a stained blood smear revealed small piroplasms inside erythrocytes. You perform blood work. What is the most common blood abnormality typically seen with this type of protozoal infection?

A. Neutrophilia (elevated neutrophils)
B. Lymphocytosis (elevated lymphocytes)
C. Hypoproteinemia (low protein)
D. Thrombocytopenia (low platelets)

25. Chronic infection with which of the following parasite can cause cardiac disease by infecting and destroying myocardial cells?

A. *Babesia vogeli*
B. *Leishmania infantum*
C. *Trypanosoma cruzi*
D. *Cytauxzoon felis*

26. Cats become infected with *Tritrichomonas blagburni* by ingesting_____.

A. trophozoites in feces
B. rodents infected with tissue cysts
C. cysts in feces
D. sporulated oocysts in feces

27. *Neospora caninum*:

A. can have many different paratenic hosts
B. can cause neurological disease in horses
C. can cause persistent infection in calves but not cause clinical disease
D. can cause severe systemic disease in cattle including death

28. *Sarcocystis cruzi*:

A. can have many different paratenic host possibilities
B. can cause neurological disease in horses
C. can cause persistent infection in calves but not cause clinical disease
D. can cause severe systemic disease in cattle including death

29. *Sarcocystis neurona*:

A. can cause dogs to shed oocysts
B. can cause neurological disease in horses
C. can cause persistent infection in calves but not cause clinical disease
D. can cause severe systemic disease in cattle including death

30. *Cryptosporidium parvum*:

A. can infect the microvilli of enterocytes
B. can only infect one specific host species
C. cannot infect humans
D. can form cysts in tissues of paratenic hosts

31. *Eimeria* species:

A. are able to infect dogs and cats
B. are not very host specific
C. are common coccidians of hooved stock and poultry
D. are able to form cysts in tissues of paratenic hosts

32. A feral cat is brought into your clinic. It shakes its heads frequently and scratches at the base of its ears. Which mite do you suspect?

A. *Sarcoptes scabiei* B. *Notoedres cati* C. *Demodex canis*
D. *Otodectes cynotis* E. *Ornithonyssus sylviarum*

33. Which mite causes red mange in dogs?

A. *Sarcoptes scabiei* B. *Notoedres cati* C. *Demodex canis*
D. *Otodectes cynotis* E. *Ornithonyssus sylviarum*

34. A swine farmer calls you out to the farm to examine his pigs. He is concerned because the pigs are destroying his pens by scratching against them. You notice some hyperkeratosis on the pigs, especially on the ear pinna. You do a deep skin scrape. For what parasite are you looking?

A. *Sarcoptes scabiei* B. *Cystoisospora suis* C. *Demodex canis*
D. *Otodectes cynotis* E. *Acaris suum*

35. For which of the follow are ticks vectors?

A. All of the following B. Protozoal diseases C. Rickettsial Diseases
D. Viral Diseases E. Bacterial Diseases

36. Brown Dog tick (aka Kennel tick)

A. *Amblyomma americanum* B. *Ixodes scapularis* C. *Haemaphysalis longicornis*
D. *Dermacentor variabilis* E. *Rhipicephalus sanguineus*

37. When treating for lice, why should one treat twice at 7 to 14 day intervals?

A. Lice show very low host specificity.
B. Lice populations increase significantly in the summer
C. Insecticides do not kill nits.
D. Only 20 percent of the lice population is found on the host.

38. Which type of insecticide can be used against both sucking and chewing lice?

A. Topical insecticides B. Systemic insecticides

39. Which of the following control measures provides the most immediate efficacy for decreasing the overall flea population in a house environment?

A. Treatment of pets with an Adulticide.
B. Treatment of pets with a Larvicide
C. Treatment of pets with a Larvicide and an Adulticide.
D. Vacuum carpets and upholstery

40. Which fly is a mechanical vector for pinkeye (*Morexella bovis*) in cattle?

A. *Musca domestica* B. *Stomoxys calcitrans* C. *Musca autumnalis*
D. *Haematobia irritans* E. *Gasterophilus nasalis*

41. Neighbors of a dairy complained to the farm manager that during the summer, when seated outside, they would frequently experience painful fly bites that they suspected were coming from his farm. The manager assured his neighbors that he was controlling flies by giving his cows an in-feed insecticide that kills developing larvae in cattle manure, and he had seen a major reduction in flies on the faces and backs of his cattle. However, the neighbors continued to experience fly bites. Which fly is likely to be the source of the neighbors' irritation?

A. *Musca domestica* B. *Stomoxys calcitrans* C. *Musca autumnalis*
D. *Haematobia irritans* E. *Gasterophilus nasalis*

42. A nursing one month old foal presents with diarrhea, and fecal flotation shows embryonated ova. What is the most likely nematode infection causing these clinical signs?

A. *Strongyloides westeri* B. small strongyles
C. *Trichostrongylus axei* D. *Strongylus vulgaris*

43. Adult stage *Ancylostoma* in dogs or cats is found at what organ site?

A. small intestine B. large intestine
C. lungs D. liver

44. Routine treatment with anthelmintic drugs for puppies usually starts at 2-3 weeks of age, whereas for kittens it usually starts at 6 weeks of age. Why is this initial routine treatment at different ages for puppies and kittens?

A. there is transuterine infection by *Toxocara canis* in dogs but not for *Toxocara cati* in cats
B. both have major transmammary infection potential with *Toxocara*, but the prepatent time by this route in kittens is much longer
C. kittens cannot tolerate treatment with anthelmintic drugs before 6 weeks of age

45. What is an important aid in diagnosing *Trichinella spiralis* infection in humans (and dogs)?

A. presence of bipolar ova in feces

B. presence of biopolar ova in sputum

C. clinical signs of anemia

D. serum with antibody titers specific for *Trichinella*

46. Which adult parasitic nematode infection of dogs and cats is readily diagnosed by endoscopic exam of the stomach?

A. *Toxocara* B. *Ancylostoma*

C. *Trichuris* D. *Physaloptera*

47. Grazing pastures is the only route of infection for the trichostrongyle nematodes that infect small ruminants and cattle, and the large and small strongyles that infect horses. What are the environmental parameters that influence the development of ova to infective larvae outside of the host?

A. trees or small bushes at the edge of the pasture

B. constantly wet, standing water, somewhere in the pasture

C. climate providing warmth and moisture sufficient for larval development and movement on herbage

D. heavily thatched pastures that support large populations of plant mites

48. Clinical signs of *Ostertagia* infection in calves appear toward the end of their first year of grazing on a pasture (no rotation of pastures). Why do clinical signs appear at the end of the grazing season?

A. nutritional value of pastures at the end of the season is greatly decreased and causes lower resistance to infection in calves at this time

B. shorter grass length causes calves to graze closer to the ground

C. infective larval numbers on pastures increase during the grazing season due to increasing adult worm burdens producing more ova to contaminate the pasture

D. many infective larva are present on pasture early in the grazing season but grass growth is inadequate for transmission

49. Many of the mammals of veterinary importance, including both companion and production animals, are infected by species specific ascarid nematodes. The life cycles can differ markedly with regard to routes of infection and larval migration depending on the host. However all ascarids infecting mammals covered in this course and of primary veterinary importance have the adult stage in what organ?

A. large intestine B. lungs

C. small intestine D. liver

50. What is the risk of establishing an adult worm infection of *Dirofilaria immitis* by transfusing blood from a microfilaremic dog to a non-infected dog?

A. no risk
B. moderate risk, depending on age of recipient
C. high risk

51. Prior to treatment of a heartworm infected dog with the adulticide, Immiticide, it is recommended that the dog be on monthly prophylaxis for two months. Why?

A. monthly prophylaxis clears highly pathogenic microfilariae
B. monthly prophylaxis prevents replacement of adult worms with migrating L4 larvae that are not killed by the adulticide treatment
C. monthly prophylaxis will remove enteric nematodes and reduce stress on the dog

52. What are the pathological changes caused by small strongyles in horses?

A. blood loss anemia and hypoproteinemia
B. gastric gland dysfunction, abomasal mucosal cell hyperplasia, increased systemic protein catabolism
C. colitis caused by emergence of larvae from the mucosa of the large intestine
D. thromboembolism causing ischemia and infarction of the arteries flowing to the large intestine, subsequent necrosis of the bowel

53. Treatment and control of *Haemonchus contortus* infection in small ruminants is very difficult due to what feature of this nematode?

A. it has developed drug resistance to almost all of the current anthelmintic drugs
B. it is transmitted by transmammary infection
C. it has infective larvae that are highly resistant to cold
D. it has adult worm stages outside of the host that can generate infective larvae

54. What is the prepatent time for *Parascaris equorum* in foals? Remember that it determines the timing of strategic deworming of foals.

A. 10 days B. 80 days
C. 200 days D. 360 days

55. What is the prepatent time for *Toxocara canis* in new born puppies infected in utero?

A. 10 days B. 3 weeks C. 8 weeks

56. Adult stage *Ancylostoma* in dogs or cats is found at what organ site?

A. small intestine B. large intestine
C. lungs D. liver

57. A three year old cat is presented to your clinic with a chronic cough, loss of weight and lack of appetite. Thoracic radiographs show density in parenchymal tissue of the lungs. Examination of sputum from the cat produced during a coughing episode shows nematode larvae with a "S" shaped tail or spine. What nematode is most likely infecting this cat?

A. *Aelurostrongylus abstrusus* B. *Ancylostoma tubaeforme*
C. *Toxocara cati* D. *Paragonimus kellicotti*

58. Because of the growing threat of resistance to anthelmintic drugs by small strongyles in horses it is being recommended that horses be treated on a selected individual basis rather than one deworming program for an entire herd. This approach is thought to preserve a refugia population of worms that will not be selected for resistance. What approach is used to select which horses to treat?

A. measurement of anemia by FAMACHA
B. measurement of fecal egg count by McMasters
C. Baermann technique

59. Bowel obstruction and possible rupture can be the consequence of which nematode infection in horses 3 to 10 months of age.

A. *Dictyocaulus arnfieldi* B. *Parascaris equorum*
C. small strongyles D. *Oxyuris equi*

60. Visceral larval migrans leading to pathological changes in the eye or brain of humans is most often caused by ingestion of infective larva/infective ova of what nematode?

A. *Ancylostoma* B. *Strongyloides*
C. *Toxocara* D. *Capillaria*

61. What is the most common pathological process associated with chronic heartworm infection in dogs?

A. inflammation and fibrosis of pulmonary arteries.
B. blockage of the posterior vena cava leading to the caval syndrome.
C. liver damage and kidney failure due to increased venous blood pressure.
D. inflammation around alveoli and terminal bronchi resulting in asthma-like signs

62. There is no justification for doing an antigenemia test for *Dirofilaria immitis* in dogs or cats under the age of 7 months. Why?

A. the antigen being detected in blood is only present when adult female worms have become patent at 6 to 7 months after infection.
B. the antigen being detected will be masked by host antibodies in younger animals.
C. you cannot use the adulticide melarsomine on animals under 7 months of age.
D. it takes at least 6 months of exposure for a strong antibody response to be detectable.

63. The major source of *Strongyloides sp* contamination of the environment that leads to increased levels of infection and disease in newborn, and restoring larvae in the tissues of the mother is from which one of the following?

A. larvae or larvated eggs shed by the very young host.
B. the mother passing large numbers of larvae or larvated eggs in her feces.
C. snails shedding infective larvae.

64. A frequently used variation of life cycle progression that allows some nematodes (trichostrongyles and hookworms are examples) to optimize transmission to a new generation of hosts or to bridge from one grazing season to the next is called what?

A. arrested development B. asexual replication C. morphogenesis

65. The attending veterinarian for a multi-million dollar feedlot operation in Iowa where 8-month-old calves, after a week of vaccination and quarantine, are placed on dirt lots and fed grain out of elevated troughs is concerned about type II ostertagiasis in animals coming from Louisiana in September. He should do which one of the following?

A. extend the quarantine period to prevent transmission on the feedlot
B. treat with an anthelmintic drug that kills L4 larvae and adults
C. don't do anything because it will be a subclinical disease without consequence

66. How is *Dictyocaulus* (lungworm) infection acquired by cattle, sheep and horses? Hint: remember *Dictyocaulus* is in the trichostrongylus family of nematodes.

A. skin penetration
B. ingestion of infective larvae while grazing pasture
C. ingestion of snail intermediate hosts

67. What is the life stage form of *Dirofilaria immitis* detected on blood examination of infected dogs?

A. microfilariae
B. L4 larvae
C. circulating immature adult females and males

68. Detection of circulating adult heartworm antigen in a one-year-old dog that was adopted from an animal shelter at 4 months of age and put on a monthly preventative at that time is most likely because of which circumstance?

A. the dog was infected 3 months before the monthly preventative was started
B. the monthly preventative failed to protect
C. the dog was infected one month after the monthly preventative was started

69. How many adult stage small strongyle nematodes can develop from the ingestion of a single L3 in a horse?

A. one B. 10 -100 C. 100 – 1,000

70. Selective deworming based on fecal egg counts in horses, and deworming of sheep and goats based on the anemia scoring system FAMACHA are done for what purpose?

A. to preserve a refugia population of nematodes and slow development of worm drug resistance.
B. to determine drug efficacy levels.
C. to assist breeding for nematode resistant horses and small ruminants.

71. If you are suspicious of *Ostertagia* infection in calves, in what organ do you expect to find adult worms?

A. abomasum B. ileum
C. cecum D. lungs

72. What is the route of infection by trichostrongyles for ruminants?

A. skin-penetration by L3 found around watering sites and in feed lots.
B. ingestion of larvated ova contaminating water sources.
C. ingestion of L3 while grazing pastures.
D. ingestion of L3 deposited by flies around the mouth and eyes

73. How are *Strongylus* species (large strongyles) different from cyathostomes (small strongyles)?

A. larvae of *Strongylus* species (*S. vulgaris*, *S. edentatus*, *S. equinus*) migrate in abdominal organs or tissues outside of the intestinal wall whereas cyathostomes do not.
B. larvae of cyathostomes migrate in abdominal organs or tissues outside of the intestinal wall whereas *Strongylus* species do not.
C. larvae of *Strongylus* species undergo arrested development whereas cyathostomes do not.
D. larvae of *Strongylus* species are resistant to many deworming drugs whereas larvae of cyathostomes are easily killed by deworming drugs.

74. A breeder of toy poodles brings a 2 week old puppy to your practice with a concern that this puppy is lethargic and one of its siblings died yesterday. Your exam shows pale membranes, a PCV of 12% indicating severe anemia, and loose dark feces but no parasite ova. What is the mostly likely cause of these clinical signs?

A. *Toxocara canis* B. *Haemonchus contortus*
C. *Ancylostoma caninum* D. *Uncinaria*

75. The antibiotic doxycycline is given to a heartworm infected dog before adulticide therapy to reduce lung inflammatory reactions by killing what organism?

A. *E. coli* B. *Rickettsia*
C. *Mycoplasma* D. *Wolbachia*

76. Arrested, hypobiotic larvae of *Ancylostoma* in the tissues of an intact (not neutered) female dog are not killed by deworming drugs. What are the 2 most important risks from these larvae when they reactivate?

A. migration to brain tissue and cause encephalitis, and tracheal migration causing lung inflammation.
B. migration to the kidney and to the liver causing fibrous tracts in these tissues.
C. stimulate inflammation in the tissue where they are located and generate fibrous nodules.
D. migration to mammary tissue to be a source of infection to nursing puppies, and migration to the small intestine to become adult worms replacing a previous population of adults.

77. The success of ascarid nematodes being world-wide infections of high frequency in pigs (*Ascaris suum*) and horses (*Parascaris equorum*) is most likely due to which two characteristics of *Ascaris suum* and *Parascaris equorum*?

A. both have highly resistant long-lived infective ova containing larva, and mature female worms that produce very large numbers of ova.
B. pigs can be infected transuterine by *Ascaris suum*, and horses are infected transmammary by *Parascaris equorum*.
C. horses can be infected transuterine by *Parascaris equorum*, and pigs are infected transmammary by *Ascaris suum*.
D. both have skin-penetrating infective stage larvae, and potential for somatic migration.

78. Why is diagnosis of *Dirofilaria immitis* infections in cats much more difficult than in dogs?

A. most cats lack an antibody response to *Dirofilaria immitis*.
B. most cats show no radiographic changes in the lungs during *Dirofilaria immitis* infection.
C. most cats show no clinical signs during *Dirofilaria immitis* infection.
D. most cats lack consistent presence of detectable *Dirofilaria immitis* antigen in serum during *Dirofilaria immitis*.

79. Why is the treatment of adult *Dirofilaria immitis* infections in cats much more difficult than in dogs?

A. the drug used to kill adult worms, melarsomine, is much more toxic to cats than dogs, and not recommended for use in cats.
B. the strain of *Dirofilaria immitis* that infects cats is much more resistant to the drug used to kill the strain of *D. immitis* in dogs.
C. prednisone treatment to reduce inflammation is not effective in cats.
D. cats have a much higher level of *Wolbachia* presence in adult *D. immitis* than dogs.

Matching: *Fasciola hepatica* and *Haemonchus contortus* are parasitic worms of ruminants. Match each of these parasitic worms with the appropriate association.

_____ **80.** Anemia
_____ **81.** Nematode
_____ **82.** Bile ducts
_____ **83.** Sedimentation

A. *Haemonchus contortus*
B. *Fasciola hepatica*
C. Both

Matching: Many digenetic trematodes utilize a second intermediate host or an environmental substrate to infect the definitive host. Knowledge of these 2nd intermediate hosts assists the veterinarian in planning means for controlling fluke infections. Match each listed fluke with the appropriate 2nd intermediate host or environmental substrate with which the fluke utilizes.

_____ **84.** *Fasciola hepatica*
_____ **85.** *Nanophyetus salmincola*
_____ **86.** *Dicrocoelium dendriticum*
_____ **87.** *Paragonimus kellicotti*

A. Ants
B. Aquatic Vegetation
C. Crayfish
D. Fish

88. This lung fluke often cause respiratory signs like cough, but in rare cases it can cause acute pneumothorax and death.

A. *Heterobilharzia americana*
B. *Nanophyetus salmincola*
C. *Dicrocoelium dendriticum*
D. *Paragonimus kellicotti*
E. *Platynosomum fastosum*

89. The canid/raccoon blood fluke, *Heterobilharzia americana*, infects the canid or raccoon host by:

A. direct skin penetration by the cercaria.
B. ingestion of the metacercariae in vegetation.
C. ingestion of the mesocercariae in frogs or snakes.
D. ingestion of the metacercariae in terrestrial isopods (rolly-polly bug).
E. ingestion of the rediae in the aquatic snail.

Matching: Humans can become infected with both adult tapeworms & important larval tapeworms. Match the tapeworm / stage with the mode of infection in which a human may acquire the tapeworm / stage.

_____ **90.** *Echinococcus sp.* hydatid cyst
_____ **91.** *Taenia solium* larvae
_____ **92.** *Taenia saginata* adult tapeworm
_____ **93.** *Spirometra sp.* larvae
_____ **94.** *Taenia solium* adult tapeworm

A. Ingest larval tapeworm from raw pork
B. Ingest tapeworm egg from dog feces
C. Ingest larval tapeworm from raw beef
D. Ingest tapeworm egg from human feces
E. Ingest larval tapeworm in copepod

95. The main pathology caused by adult *Taenia pisiformis* and *Dipylidium caninum*?

A. Brain damage
B. Liver Necrosis
C. Segments in feces, client worry, aesthetics
D. Lung inflammation

96. Cats become infected with the tapeworm, *Taenia taeniaformis*, when they ingest a _____, that contains a strobilocercus larval stage.

A. Pasture Mite
B. Bird
C. Flea
D. Rodent
E. Rabbit

97. True / False: Ivermectin is a highly effective dewormer against trematodes and cestodes.

A. True
B. False

98. How does a sheep become infected with the tapeworm *Moniezia expansa*? While ingesting grass (grazing), a goat inadvertently ingests a _____, which is infected with a cysticercoid larval stage.

A. Pasture Mite
B. Bird
C. Flea
D. Rodent
E. Rabbit

99. Which tapeworm requires complete elimination, as this tapeworm has the ability to asexually reproduce in the host. This allows the tapeworm to repopulate the host without reinfection?

A. *Mesocestoides corti*
B. *Spirometra sp.*
C. *Moniezia expansa*
D. *Platynosomum fastosum*
E. *Dipylidium caninum*

100. True / False: Some *Dipylidium caninum* isolates have been reported to be resistant to treatments (with praziquantel & epsiprantel.)

A. True
B. False.