

Name: _____ KEY _____

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

Protozoa (67 points)

Matching (1 point each)

Matching I

Trypanosoma cruzi and *Leishmania infantum* are 2 uncommon, "imported" hemoflagellates that can cause systemic pathology in dogs. Match each of these hemoflagellates with the appropriate association. (1 point each)

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|---------|------------------------------|-------------------------------|
| ___B___ | 1. Mediterranean | A. <i>Trypanosoma cruzi</i> |
| ___A___ | 2. Cardiac Disease | B. <i>Leishmania infantum</i> |
| ___B___ | 3. Foxhounds | |
| ___A___ | 4. Stercorarian transmission | |
| ___B___ | 5. Sandflies | |

Matching II

Eimeria bovis and *Cryptosporidium parvum* cause diarrhea in cattle. Match each of these intestinal apicomplexans with the appropriate association. (1 point each)

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|---------|---|----------------------------------|
| ___B___ | 1. Infects microvilli of epithelial cells | A. <i>Eimeria bovis</i> |
| ___A___ | 2. High Host Specificity | B. <i>Cryptosporidium parvum</i> |
| ___C___ | 3. Dehydration | C. Both |
| ___B___ | 4. Watery diarrhea @ 7-14 days | |
| ___A___ | 5. Destruction of epithelial cells and gut lining | |

Matching III

Tritrichomonas foetus and *Giardia sp.* can cause diarrhea in cats. Match each of these Mucoflagellates with the appropriate association. (1 point each)

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|---------|---------------------------------|--|
| ___B___ | 1. Infective cyst | A. <i>Tritrichomonas foetus feline</i> |
| ___A___ | 2. Rodinazole | B. <i>Giardia sp.</i> Assemb. F |
| ___B___ | 3. Small Intestine | C. Both |
| ___A___ | 4. Cat remains bright and alert | |
| ___C___ | 5. Persistent smelly diarrhea | |

Matching IV

Eimeria spp. and *Cystoisospora spp.* are coccidians that cause diarrhea in domestic animals. Match each of these coccidians with the appropriate association. (1 point each)

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|---------|-----------------------------------|------------------------------|
| ___A___ | 1. Four sporocysts | A. <i>Eimeria spp.</i> |
| ___C___ | 2. Ingest infective oocyst | B. <i>Cystoisospora spp.</i> |
| ___B___ | 3. Kitten | C. Both |
| ___B___ | 4. Ingest infected paratenic host | |
| ___C___ | 5. Very High Host Specificity | |

Matching V

Tritrichomonas foetus bovine and *Neospora caninum* are protozoans that cause abortions in cattle. Match each of these protozoa with the appropriate association. (1 point each)

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|---------|-------------------------------------|--|
| ___B___ | 1. Late term abortions | A. <i>Tritrichomonas foetus</i> bovine |
| ___A___ | 2. Prepuce washings | B. <i>Neospora caninum</i> |
| ___B___ | 3. Apicomplexan | |
| ___A___ | 4. Sanitary artificial insemination | |
| ___B___ | 5. Ingest oocysts from canid feces | |

Multiple Choice (2 points each)

- The systemic / abortion apicomplexan, _____, can be transmitted from female dog to puppies via transplacental transmission and often causes Flaccid Hind-limb Syndrome in puppies. [Circle the correct answer] (2 points)

A. <i>Sarcocystis neurona</i>	B. <i>Toxoplasma gondii</i>
C. <i>Cystoisospora canis</i>	D. <i>Neospora caninum</i>
E. <i>Sarcocystis cruzi</i>	

- Because Imidocarb is used for the treatment *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	

3. _____ is a systemic apicomplexan that can accidentally infect a horse, causing neural pathology; with disease manifestations including ataxia and muscle atrophy. [Circle the correct answer] (2 points)
- A. *Sarcocystis neurona* B. *Toxoplasma gondii*
C. *Spirometra mansonioides* D. *Neospora caninum*
E. *Sarcocystis cruzi*
4. *Cystoisospora suis* is the most important coccidian of piglets; causing scours, dehydration, and weight loss. Within the "piglet herd", this coccidian manifests _____ . [Circle the correct answer] (2 points)
- A. High Morbidity and Low Mortality
B. Low Morbidity and High Mortality
5. Which protozoan parasite shows high host specificity for its feline definitive host; but very low host specificity for paratenic host, allowing it to infect any warm-blooded animal? [Circle the correct answer] (2 points)
- A. *Toxoplasma gondii* B. *Eimeria tenella*
C. *Cystoisospora felis* D. *Neospora caninum*
E. *Sarcocystis cruzi*
6. Puppies infected with this coccidian parasite may break with diarrhea due to stressful situations, like being in an animal shelter or after a plane trip or other shipping stress. [Circle the correct answer] (2 points)
- A. *Sarcocystis neurona* B. *Toxoplasma gondii*
C. *Eimeria zuernii* D. *Cystoisospora canis*
E. *Sarcocystis cruzi*

7. 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? [Circle the correct answer] (2 points)
- A. *Toxoplasma gondii* B. *Cytauxzoon felis*
C. *Babesia gibsoni* D. *Cystoisopora rivolta*
E. *Tritrichomonas foetus feline*
8. Which 2 apicomplexans are of serious zoonotic concern, especially for immunocompromised people? [Circle the correct answer] (2 points)
- A. *Sarcocystis neurona* & *Sarcocystis cruzi*
B. *Eimeria zuernii* & *Cystoisopora rivolta*
C. *Neospora caninum* & *Tritrichomonas foetus*
D. *Cystoisopora ohioensis* & *Babesia gibsoni*
E. *Toxoplasma gondii* & *Cryptosporidium parvum*
9. *Toxoplasma gondii* is a serious zoonotic disease for pregnant women, with the potential for causing fetal defects. Which of the following presents the greatest risk for congenital toxoplasmosis in the human fetus? [Circle the correct answer] (2 points)
- A. A mother whose primary infection occurs early in pregnancy.
B. A mother who is seropositive before pregnancy.
C. An old indoor cat.

10. What is the prognosis for an untreated cat infected with *Cytauxzoon felis* ?
[Circle the correct answer] (2 points)
- A. Acute but mild febrile illness, recovery within 5 days.
 - B. Chronic disease that may cause cardiac failure years after infection.
 - C. Acute febrile disease, with death 5 days after clinical signs.
11. Which tick-borne canine parasite should you consider if presented with an American Pit Bull Terrier with lethargy, pale mucous membranes, fever, lymphadenomegaly? [Circle the correct answer] (2 points)
- A. *Babesia gibsoni*
 - B. *Leishmania infantum*
 - C. *Cytauxzoon felis*
 - D. *Neospora caninum*
 - E. *Babesia canis*

Fill-in-the-Blank (2 points each)

1. Due to being highly toxic to these animals, Ionophore Coccidiostats, such as Monensin and Lasalocid, should be strictly kept away from _____HORSES_____. (2 points)
2. The primary supportive therapy for calves with scours caused by *Cryptosporidium parvum* or the coccidian, *Eimeria bovis* is _____FLUID THERAPY_____. (2 points)

Lists (2 points each)

List I

1. Coccidiosis in production animals, like cattle, can cause severe diarrhea, list 4 management tactics required for the control of coccidiosis. (2 points each)

1. _____SANITATION_____ also ___don't mix age groups_____
2. _____COCCIDISTATS_____ also ___isolate at 1st sign of DZ_____
3. _____GOOD NUTIRTION_____ also ___treat whole herd at 1st sign of DZ_
4. _____LOW STRESS_____

List II

1. *Toxoplasma gondii* is a serious zoonotic disease for pregnant women, with the potential for causing fetal defects. List 4 important things to advise a pregnant female to do if she is concerned about becoming infected with *Toxoplasma gondii*. (2 points each)

1. _____KNOW IMMUNE STATUS_____ also ___know cat's immune status___
2. _____NO LITTER BOX DUTY_____
3. _____NO RAW MEAT_____
4. _____SANITARY KITCHEN_____

Trematodes & Cestodes (33 points total)Multiple Choice I (2 points each)

1. The effects of the pathology caused by *Dicrocoelium dendriticum* infections are seen in _____. [Circle the correct answer] (2 points)
 - A. lambs
 - B. older sheep

2. The small intestinal fluke _____, can be a carrier of the bacterium *Neorickettsia helminthoeca*, which in turn can cause a severe disease called "Salmon Poisoning" in canids. [Circle the correct answer] (2 points)
 - A. *Paragonimus kellicotti*
 - B. *Platynosomum fastosum*
 - C. *Nanophyetus salmincola*
 - D. *Heterobilharzia americana*
 - E. *Spirometra sp.*

3. Control measures for *Fasciola hepatica* may include: [Circle the correct answer] (2 points)
 - A. Elimination of ants and terrestrial snails
 - B. Elimination of aquatic snails and wet areas in the pasture
 - C. Prevent human defecation in pastures & human ingestion of raw meat
 - D. Prevent access of canids into the pasture and prevent canid access to offal

4. This blood fluke is generally found in the mesenteric vessels of raccoons and other wildlife, but can also infect dogs causing a severe disease, characterized by diarrhea, anorexia, weight loss and eventual death. [Circle the correct answer] (2 points)
 - A. *Heterobilharzia americana*
 - B. *Nanophyetus salmincola*
 - C. *Dicrocoelium dendriticum*
 - D. *Paragonimus kellicotti*
 - E. *Platynosomum fastosum*

5. Which one of the following groups do ALL the flatworms (flukes and/or tapeworms) listed result in economic loss to a cattle farmer because of condemnation of cattle meat and/or liver? [Circle the correct answer] (2 points)

- A. *Echinococcus granulosus*, *Moniezia sp.*, *Taenia pisiformis*
- B. *Fasciola hepatica*, *Taenia saginata*, *Fascioloides magna*
- C. *Moniezia sp.*, *Dipylidium caninum*, *Fascioloides magna*
- D. *Taenia solium*, *Taenia taeniaformis*, *Taenia pisiformis*
- E. *Dicrocoelium dendriticum*, *Taenia pisiformis*, *Spirometra sp.*

6. Which one of the following canine tapeworms does NOT shed its proglottids in the host's feces? The lack of segments in the feces requires the veterinarian to utilize fecal sedimentation to diagnose this tapeworm infection. [Circle the correct answer] (2 points)

- A. *Taenia pisiformis*
- B. *Mesocostoides corti*
- C. *Dipylidium caninum*
- D. *Taenia taeniaeformis*
- E. *Spirometra sp.*

True / False

1. *Anoplocephala perfoliata* is very easily and often diagnosed using the simple, passive fecal floatation technique. Circle the correct answer. (2 points)

A. True

B. False

Matching (1 point each)**Matching I**

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. (1 point each)

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|---------|-------------------------------------|--|
| ___C___ | 1. <i>Fasciola hepatica</i> | A. Ants |
| ___B___ | 2. <i>Nanophyetus salmincola</i> | B. Fish |
| ___A___ | 3. <i>Dicrocoelium dendriticum</i> | C. Aquatic Vegetation |
| ___E___ | 4. <i>Heterobilharzia americana</i> | D. Grasshopper |
| ___D___ | 5. <i>Eurytrema procyonis</i> | E. This fluke does not use a 2 nd intermediate host |

Matching II

All tapeworms utilize at least one intermediate host to infect the definitive host. Knowledge of these intermediate hosts assists the veterinarian in planning means for controlling tapeworm infections. Match each listed tapeworm with the appropriate intermediate host with which the tapeworm utilizes. (1 point each)

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|---------|-------------------------------|-----------------|
| ___D___ | 1. <i>Dipylidium caninum</i> | A. Rabbit |
| ___C___ | 2. <i>Moniezia sp.</i> | B. Rodent |
| ___A___ | 3. <i>Taenia pisiformis</i> | C. Pasture Mite |
| ___B___ | 4. <i>Taenia taeniaformis</i> | D. Flea |

Matching III

Compare & Contrast the two helminth parasites of dogs & cats: *Spirometra sp.* and *Paragonimus kellicotti*. Some characteristics of the worms are shared, while other characteristics differ between the worms. (In front of the characteristic listed in the left-hand column, write the correct Letter that represents *Spirometra sp.*, *Paragonimus kellicotti* or Both, which are listed in the right-hand column.) (1 point each).

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|-------|--------------------------|----------------------------------|
| __A__ | 1. Lungs | A. <i>Paragonimus kellicotti</i> |
| __C__ | 2. Sedimentation | B. <i>Spirometra sp.</i> |
| __B__ | 3. Cestode | C. Both |
| __A__ | 4. Crayfish | |
| __B__ | 5. Intermittent diarrhea | |

Matching IV

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. (1 point each)

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|-------|--|
| __B__ | 1. <i>Echinococcus sp.</i> hydatid cyst |
| __C__ | 2. <i>Taenia solium</i> larvae |
| __D__ | 3. <i>Taenia saginata</i> adult tapeworm |
| __E__ | 4. <i>Spirometra sp.</i> larvae |
| __A__ | 5. <i>Taenia solium</i> adult tapeworm |

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