

Registration form

Tick Control CEU Training Course \$150.00
48 HOUR RUSH ORDER PROCESSING FEE ADDITIONAL \$50.00
Rush service does not include overnight delivery or Fedex fees.

Start and finish dates: _____

You will have 90 days from this date in order to complete this course

Name _____ **Signature** _____
(This will appear on your certificate as above)

Address: _____

City _____ **State** _____ **Zip** _____ **Email** _____

Phone:
Home () _____ **Work** () _____ **Fax** () _____

License or Operator ID # _____ **Exp Date** _____

Class/Grade _____

Please circle which certification you are applying the course CEU's/PDH's.

Commercial Applicator Residential Applicator Industrial Applicator Pesticide Handler Advisor

Agricultural Applicator Aerial Applicator Other _____

California Structural California DPR Arizona Structural AZ Agricultural

Your certificate will be mailed to you in about two weeks.

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Tick Control Answer Key

Name _____

Phone Number _____

Address _____

Please write-in and circle or bold the best answer.

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Rush Grading Service

If you need this assignment graded and the results mailed to you within a 48-hour period, prepare to pay an additional rush service handling fee of \$50.00. This fee may not cover postage costs. If you need this service, simply write RUSH on the top of your Registration Form. We will place you in the front of the grading and processing line.

Thank you...

Please mail this with your final exam

TICK CONTROL CEU TRAINING COURSE PROFESSIONAL DEVELOPMENT COURSE

CUSTOMER SERVICE RESPONSE CARD

DATE: _____

NAME: _____

ADDRESS: _____

E-MAIL _____ PHONE _____

PLEASE COMPLETE THIS FORM BY CIRCLING THE NUMBER OF THE APPROPRIATE ANSWER IN THE AREA BELOW.

1. Please rate the difficulty of your course.

Very Easy 0 1 2 3 4 5 Very Difficult

2. Please rate the difficulty of the testing process.

Very Easy 0 1 2 3 4 5 Very Difficult

3. Please rate the subject matter on the exam to your actual field or work.

Very Similar 0 1 2 3 4 5 Very Different

4. How did you hear about this Course? _____

5. What would you do to improve the Course?

Any other concerns or comments.

Tick Control CEU Training Course Assignment

You will have 90 days from the start of this course to have successfully completed this assignment with a score of 70% or better. You may e-mail the answers to TLC, info@tlch2o.com or fax the answers to TLC (928) 272-0747. You can find course support under the Assignment Page on the website, look for the Assistance Page.

Select only one answer

1. _____ may be used against ticks on turf and recreational areas. Some products are available for public use, other formulations are restricted to licensed applicators. Sprays and granules reported effective against ticks.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

2. Tempo is a

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

3. This material belongs to a class of pesticides called synthetic pyrethroids. _____ may be used against ticks on turf and ornamentals. This product is available for commercial use only. It is effective against blacklegged ticks.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

4. This product may be used against ticks on lawns and backyards. It is a hose sprayer kit for homeowner use.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

5. Sevin is a

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

6. This material belongs to a class of pesticides called organophosphates.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon

7. Some products available to the public, but many restricted by label to commercial use. Sprays and granules moderately effective against blacklegged ticks.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

8. Zema Lawn Spray is a

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

9. This material belongs to a class of pesticides called synthetic pyrethroids.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

10. This material belongs to a class of pesticides called carbamates.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin

11. _____ may be used against ticks on turf and recreational areas. There are numerous brands available for public use. Both sprays and granules have been reported effective against ticks.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

12. Dursban is a

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

13. This material belongs to a class of pesticides called organophosphates.

- A. Carbaryl
- B. Chlorpyrifos
- C. Cyfluthrin
- D. Diazinon
- E. s-fenvalerate

14. Mavrik Aquaflow, Yardex is a

- A. Carbaryl
- B. Fluvalinate
- C. Cyfluthrin
- D. Diazinon
- E. Permethrin

15. This material belongs to a class of pesticides called synthetic pyrethroids. _____ may be used against ticks on turf and ornamentals. This material is effective against blacklegged ticks.

- A. Carbaryl
- B. Fluvalinate
- C. Cyfluthrin
- D. Diazinon
- E. Permethrin

16. PermaKill 4Week Tick Killer are ?

- A. Carbaryl
- B. Fluvalinate
- C. Cyfluthrin
- D. Diazinon
- E. Permethrin

17. This material belongs to a class of pesticides called synthetic pyrethroids. It is labeled for use against ticks on the lawn.

- A. Carbaryl
- B. Cyfluthrin
- C. Diazinon
- D. Permethrin

18. _____ is highly effective as a clothing toxicant against ticks.

- A. Carbaryl
- B. Fluvalinate
- C. Cyfluthrin
- D. Diazinon
- E. Permethrin

19. Commercially available _____-treated cottonballs (Damminix®) target larvae and nymphs of *I. scapularis* on white-footed mice.

- A. Carbaryl
- B. Fluvalinate
- C. Cyfluthrin
- D. Diazinon
- E. Permethrin

20. Tubes filled with cotton are distributed throughout the mouse habitat, and mice collect the cotton as nesting material. Ticks on the mice are killed which, in turn, is supposed to ultimately reduce the number of infected ticks on a treated property.

- A. Carbaryl
- B. Diazinon
- C. Permethrin

Identify the Commercial Product to the Common Name.

Tick management products labeled for indoor surface or crack and crevice treatment.

21. Pyrenone 50 is a

- A. Pyrethrins, PBO
- B. Pyrethrins
- C. Permethrin
- D. Pyrethrins, PBO, Silica Gel
- E. None of the above

22. PT P.I. Contact Insecticide is a
- Pyrethrins, PBO
 - Pyrethrins
 - Permethrin
23. _____ are excellent vectors for disease transmission. More than 800 species of these obligate blood-sucking creatures inhabit the planet.
- Mosquitoes
 - Ticks
 - Mites
 - Arachnida
24. Ticks are second only to _____ as vectors of human disease, both infectious and toxic.
- Mosquitoes
 - Ticks
 - Mites
 - Arachnida
25. The order Acarina (_____) includes mites and ticks.
- Mosquitoes
 - Ticks
 - Mites
 - Arachnida
 - None of the above
26. Members of this order differ from other arachnids in that the body is not segmented, and the _____ and abdomen are combined into one body region.
- Larval
 - Cephalothorax
 - Parasitic/Parasites
27. _____ mites and ticks have three pairs of legs, whereas **nymphs** and **adults** have four pairs.
- Larval
 - Cephalothorax
 - Parasitic/Parasites
 - Blood Poisoning
 - None of the above
28. Mites inhabit most ecological settings, ranging from deserts to rain forests, mountain tops to tundra and saltwater ocean floors to freshwater lakes. The relatively few species of _____ on humans in the U.S. produce dermatitis, often followed by allergic reactions.
- Larval
 - Cephalothorax
 - Parasitic/Parasites
 - Blood Poisoning
 - None of the above
29. Ticks are _____ during their life cycle. They are annoying pests whose bites are irritating.
- Larval
 - Cephalothorax
 - Parasitic/Parasites
 - Blood Poisoning
 - None of the above

30. When a tick is forcibly removed, its mouthparts frequently remain in the skin, resulting in a sore, an infection or even _____. In the U.S. ticks, unlike mites, transmit many serious diseases.

- A. Larval
- B. Cephalothorax
- C. Parasitic/Parasites
- D. Blood Poisoning
- E. None of the above

31. Ticks are external _____ on mammals, birds, reptiles, and amphibians.

- A. Larval
- B. Cephalothorax
- C. Parasitic/Parasites
- D. Blood Poisoning

32. Both males and females feed on blood. This course describes the biology and management of five species of ticks commonly found in park settings. These ticks are all species which _____ a disease, are capable of transmitting a pathogen to humans, or may in some other way affect human health.

- A. Larval
- B. Cephalothorax
- C. Parasitic/Parasites
- D. Blood Poisoning
- E. None of the above

33. Ticks feed by perching in low vegetation and waiting for a susceptible host on which they can attach and feed. Once on a host, the tick attaches its hypostome, a central _____ element with hooks, into the host's skin.

- A. Pathogens
- B. Ixodes
- C. Fish
- D. Spirochetes
- E. None of the above

34. Some ticks secrete a cementing material to fasten themselves to the host. In addition, _____ ticks secrete anticoagulant, immunosuppressive, and anti-inflammatory substances into the area of the tick bite.

- A. Pathogens
- B. Ixodes
- C. Spirochetes
- E. None of the above

35. From the above question, these substances presumably help the tick to obtain a blood meal without the host's noticing. These same substances also help any freeloading _____ to establish a foothold in the host.

- A. Pathogens
- B. Ixodes
- C. Fish
- D. Spirochetes
- E. None of the above

36. From the perspective of disease transmission to _____, the essential characteristic of ticks is their need to ingest a blood meal to transform to their next stage of development.

- A. Pathogens
- B. Ixodes
- C. Fish
- D. Humans

37. Ticks are not picky in their eating habits, they take their requisite blood meal from all classes of vertebrates (e.g., mammals, reptiles, birds), with the exception of _____.
- A. Pathogens
 - B. Ixodes
 - C. Fish
 - D. Spirochetes
 - E. None of the above
38. Ticks can carry and transmit a remarkable array of _____, such as bacteria, spirochetes, rickettsiae, protozoa, viruses, nematodes, and toxins.
- A. Pathogens
 - B. Ixodes
 - C. Fish
 - D. Spirochetes
 - E. None of the above
39. A single tick bite can transmit multiple pathogens, a phenomenon that has led to atypical presentations of some classic _____-borne diseases.
- A. Mosquitoes
 - B. Tick
 - C. Mites
 - D. Arachnida
 - E. None of the above
40. In the US, _____ are the most common vectors of vector-borne diseases.
- A. Mosquitoes
 - B. Ticks
 - C. Mites
 - D. Arachnida
 - E. None of the above
41. In North America, the following diseases are caused by tick bites: Lyme disease, human granulocytic and monocytic ehrlichiosis, babesiosis, relapsing fever, Rocky Mountain spotted fever, Colorado tick fever, tularemia, _____, and tick paralysis.
- A. Cat Scratch Fever
 - B. Q Fever
 - C. Elk Fever
 - D. Allergic Reactions
 - E. None of the above
42. In Europe, the list is similar, but other diseases should be considered, as well; these include _____ (caused by a less virulent spotted fever rickettsial organism), and tick-borne encephalitis.
- A. Cat Scratch Fever
 - B. Q Fever
 - C. Deer Fever
 - D. Allergic Reactions
 - E. None of the above
43. Secondary infections and _____ to proteins in tick saliva are also possible.
- A. Cat Scratch Fever
 - B. Q Fever
 - C. Lyme Disease
 - D. Allergic Reactions
 - E. None of the above

44. For each species of tick, the geographic distribution, habitat, hosts, life cycle, seasonal abundance, responses to environmental factors, and direct and indirect medical effects are described. Information concerning the removal of ticks, outbreaks of tick-borne diseases, and natural _____ are presented.

- A. Carbon Dioxide
- B. Enemies
- C. Dermacentor
- D. Humidity
- E. None of the above

45. All of these tick species are attracted to _____ and generally prefer low light intensity, high relative humidity, and protection from constant breezes.

- A. Carbon Dioxide
- B. Enemies
- C. Dermacentor
- D. Humidity
- E. None of the above

46. Temperature and _____ are the two most important environmental factors affecting survival.

- A. Scrotum
- B. Ixodes
- C. Dermacentor
- D. Humidity
- E. None of the above

47. Of the 3 families of ticks, only hard ticks (family Ixodidae) and soft ticks (family Argasidae) have medical importance. The principle difference between the 2 groups is the presence of the hard plate, or _____, that hard ticks possess.

- A. Scutum
- B. Ixodes
- C. Dermacentor
- D. Spirochetes
- E. None of the above

48. The _____ of hard and soft ticks vary.

- A. Life Cycles
- B. Ixodes
- C. Dermacentor
- D. Spirochetes

49. Most hard ticks undergo a _____-year life cycle in which they begin as 6-legged larvae.

- A. 1
- B. 2
- C. 3
- D. 4

50. Amblyomma, Dermacentor, and _____ are the 3 genera of hard ticks that transmit diseases to humans in the United States.

- A. Amblyomma
- B. Ixodes
- C. Dermacentor
- D. Spirochetes
- E. None of the above

51. These ticks generally feed for many _____, a fact that has some bearing on the treatment of tick bites.

- A. Minutes
- B. Hours
- C. Days
- D. Weeks

52. The following representative cycle is that of the *Ixodes scapularis* in the northeastern United States. The larvae hatch from eggs in summer and begin seeking hosts in _____; these ticks have only 6 legs and are the size of the period at the end of this sentence.

- A. June
- B. July
- C. August
- D. September

53. The preferred host is the _____.

- A. Human
- B. Bird
- C. Mouse
- D. Deer

54. _____ that successfully feed then fall off the host and live in the soil and decaying vegetation over the winter.

- A. Larvae
- B. Cephalothorax
- C. Parasitic/Parasites
- D. Nymphs
- E. None of the above

55. The next spring, most often in May and _____, the larvae molt into 8-legged nymphs.

- A. June
- B. July
- C. August
- D. September

56. These _____ are quite small and seek their blood meal from a small vertebrate. Humans may be infected as accidental hosts at this point in the cycle.

- A. Larvae
- B. Cephalothorax
- C. Parasitic/Parasites
- D. Nymphs
- E. None of the above

57. Then, the _____ either dies (if it fails to find a blood meal) or lives in the soil to molt into an adult in the fall season.

- A. Larvae
- B. Adult
- C. Parasitic/Parasites
- D. Nymphs

58. The 8-legged _____ tick is somewhat larger and seeks a larger host for its required blood meal.

- A. Larvae
- B. Adult
- C. Parasitic/Parasites
- D. Nymphs

59. The white-tailed deer, *Odocoileus virginianus*, is the preferred host for _____ ticks, which mate on deer over the winter months.

- A. Larvae
- B. Adult
- C. Parasitic/Parasites
- D. Nymphs
- E. None of the above

60. Because the deer plays a key role in the mating of ticks, the increase in the deer population in many parts of the country is an important factor in the epidemic of some tick-borne diseases, such as _____.

- A. Cat Scratch Fever
- B. Q Fever
- C. Lyme Disease
- D. Allergic Reactions
- E. None of the above

61. The adult female lays several _____ eggs and then dies.

- A. Hundreds
- B. Thousands
- C. Ten Thousands
- D. Millions

62. Eggs that survive the winter hatch into _____ the next season, and the 2-year cycle begins anew.

- A. Larvae
- B. Adult
- C. Parasitic/Parasites
- D. Nymphs
- E. None of the above

63. Soft ticks have no hard shell (scutum). In the United States, only ticks of the genus *Ornithodoros* transmit human disease, namely, _____.

- A. Cat Scratch Fever
- B. Q Fever
- C. Lyme Disease
- D. Relapsing Fever
- E. None of the above

64. The biology of soft ticks differs from that of hard ticks in that meals last for only short periods, and disease can be transmitted in less than 1 _____.

- A. Minute
- B. Hour

Tick Identification Section

65. ***Amblyomma americanum***

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

66. This tick species occurs from central Texas east to the Atlantic coast and north to Iowa and New York; it has also been reported in northern Mexico.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

67. The _____ is found in wooded areas, especially where there is dense underbrush, but it is also found in scrub, meadow margins, hedge rows, cane breaks, and marginal vegetation along rivers and streams. The immatures and adults feed on a wide variety of mammals (including humans) and ground-feeding birds.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

68. Each female produces 3,000-8,000 eggs, which are deposited under leaf and soil litter in middle to late spring. Incubation may take 30 days or longer, depending on temperature. The newly hatched six-legged immatures, also known as larvae or seed ticks, feed for 3 to 7 days on a host. After full engorgement the larvae drop from the host into vegetation and shed their skins 9-27 days later. The eight-legged immatures that emerge are called nymphs.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

69. _____ tick nymphs can move very quickly and may cover a person's legs or arms in less than five minutes. This is a good behavioral characteristic to note to aid in identification of this tick species.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

70. ***Dermacentor variabilis***

- A. American Dog Tick
- B. Brown Dog Tick

71. The _____ is found throughout the United States except in parts of the Rocky Mountain region. It also occurs in parts of Canada and Mexico.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

72. Its habitat includes wooded areas, abandoned fields, medium height grasses and shrubs between wetlands and woods, and sunny or open areas around woods. Larvae and nymphs feed primarily on small mammals (especially rodents); while the adults feed mainly on dogs, but will readily bite humans.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

73. _____ ticks transmit Tularemia to humans. Lone Star ticks infected with the agents of Rocky Mountain spotted fever and Lyme disease occurs in nature, but the species does not appear to be epidemiologically important in the transmission of these diseases.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

74. ***Amblyomma americanum*** ticks are found through the southeast and south-central states. Their life cycle and ecologic requirements are similar to ***Ixodes*** ticks with minor exceptions not described here.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

75. All three life stages of ***A. americanum*** aggressively bite people in the southern U.S. Research indicates that live spirochetes are observed in only 1-3% of ***A. americanum***.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

76. Even though spirochetes have been seen in *A. americanum* ticks by microscopy, attempts to culture it in the laboratory have consistently failed. Modified BSK (Barbour-Stoenner-Kelly) is the best medium for cultivating the Lyme disease spirochete, *B. burgdorferi*, but is apparently not suitable for cultivating the spirochete found in *A. americanum*.

- A. Lone Star Tick
- B. American Dog Tick

77. Persons living or traveling in southeast or southcentral states who develop a red, expanding rash with central clearing (the rash of Lyme disease, erythema migrans) following the bite of the _____, should see their physician.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

78. The female lays 4,000-6,500 ellipsoidal eggs over a 14-32 day period and then dies. The eggs usually hatch in 36-57 days. Larvae usually engorge for 3-5 days, nymphs for 3-11 days, and adult females for 5-13 days. Unfed larvae can live up to 15 months, nymphs 20 months and adults 30 months or longer.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

79. The _____ is found throughout the eastern United States.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

80. This tick is not known to spread Lyme disease, although it can transmit the causal agent of Rocky Mountain spotted fever. Only the adult tick is encountered by most people and pets.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick

81. Adult ticks can be distinguished from adult *I. scapularis* by their larger size and the white markings on the upper body surface.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

82. Female *I. scapularis* have a dark brown dorsal "*shield*" located behind the mouthparts, and when unengorged, have a reddish brown body.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

83. This species is the primary vector of Rocky Mountain spotted fever in the eastern United States, and can also transmit Tularemia and cause tick paralysis.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

84. ***Rhipicephalus sanguineus***

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

85. The _____ tick creates severe annoyance when it infests domestic pets and becomes established inside buildings.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

86. This is the most widely distributed tick in the U.S. and is characteristically a reddish-brown species that attacks dogs and other mammals, but rarely humans.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

87. It is not known to transmit human diseases. It most often attaches to the ears and between the toes of dogs.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

88. The engorged female ticks, sometimes about ½ inch long, are particularly noticeable as they crawl on walls, window frames, or around baseboards and cracks looking for protected areas in which to deposit their 1,000 to 3,000 eggs.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

89. The entire life cycle can be completed in less than two months. Homes and yards can become heavily infested after the passing of a single dog that drops an engorged female tick with thousands of eggs, eventually reaching a high density in the resident dogs' sleeping areas. This tick does not survive outside in cold climates.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

90. An adult female will feed on the host for around one week, then drop off the host and find a secluded place for egg development. Cracks and crevices in houses, garages and dog runs are ideal locations. She will start laying as soon as four days after she completes feeding and drops off the host, and can continue to lay for as long as 15 days.

- A. American Dog Tick
- B. Brown Dog Tick

91. As she lays the eggs, she passes them over her porose areas (specialized areas on the back of the basis capituli), to coat them in secretions which protect the eggs from drying out. After she finishes laying her eggs, she dies.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. Brown Dog Tick

92. The larvae hatch two to five weeks later, and begin to quest, or look for a host. All stages of this tick prefer dogs, although they will feed on other mammals. Larvae feed for three to seven days, then take about two weeks to develop into nymphs.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

93. The nymphs then feed for five to 10 days and again take about two weeks to develop into adults. As adults, both males and females will attach to hosts and feed, although the males only feed for short periods. The overall cycle can be completed in just over two months, but frequently will take longer if there are few hosts available or in cold temperatures.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

94. Ticks are notoriously long-lived, and can live as long as three to five months in each stage without feeding.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

95. ***Dermacentor andersoni***

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

96. This tick is found from the western counties of Nebraska and the Black Hills of South Dakota to the Cascade and Sierra Nevada Mountains and from northern Arizona and northern New Mexico in the United States to British Columbia, Alberta, and Saskatchewan in Canada.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

97. ***Argas persicus***

- A. Winter Tick
- B. Rodent Tick
- C. Fowl Tick

98. This soft tick feeds rapidly at night and subsequently oviposits in cracks and crevices.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

99. Although cattle are the primary host, this tick parasitizes many species of wild animals. It is generally found in drier range areas of the United States and in Nebraska is reported only in the western section, except for feedlot cattle that originated in the west or southwest.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

100. *Ornithodoros hermsi*

- A. Winter Tick
- B. Rodent Tick

101. This soft tick is a common rodent parasite and a vector of relapsing fever. It is found along the Pacific coast and in the Rocky Mountain region of the U.S. Larvae can expand to three times their normal size after a blood meal and appear bright red. They are sometimes mistakenly referred to as strawberry seed insects.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

102. Their habitat is primarily fields and forested areas. This species is especially prevalent where there is brushy vegetation that encourages the small mammal hosts of immature ticks and sufficient forage to attract the large hosts of the adults. Immatures feed mainly on small mammals such as ground squirrels and chipmunks, and adults on cattle, sheep, deer, humans, and other large mammals.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

103. Females lay about 4,000 eggs in plant debris on the soil or in crevices in construction materials, usually in masses of hundreds at a single location. Unfed larvae may live for 1-4 months, nymphs for 10 months, and adults for more than 12 months.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick

104. Adults and nymphs can be found from March to mid- summer. Larvae are active throughout the summer and are associated with cool soil temperatures, shallow soil, abundant leaf litter, and high relative humidity.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick

105. This species is the primary vector of Rocky Mountain spotted fever in the Rocky Mountain States and is also known to transmit Colorado tick fever and Tularemia. It also carries tick paralysis in the United States and Canada.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick

106. *Ixodes scapularis*

- A. Rocky Mountain Wood Tick
- B. Brown Dog Tick
- C. Deer Tick

107. _____ are small, dark-colored ticks sometimes called seed ticks. Deer ticks feed mostly on deer, cattle, and other large animals, but they will feed on people when they get a chance.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

108. The _____ tick in the East and the related western black-legged tick are the primary (and possibly the only) known transmitters of true Lyme disease in the United States. Both are hard-bodied ticks with a two-year life cycle.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

109. No bigger than a newsprinted period, a larva will wait on the ground until a small mammal or bird brushes up against it. The larva then attaches itself to its host, begins feeding, and over a few days, engorges (swells up) with blood.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

110. Because _____ larvae are not born infected, they cannot transmit Lyme disease to their human hosts. Instead, "reservoir" hosts, as mentioned above, can infect the larvae. Having already fed, an infected larva will not seek another host, human or otherwise, until after it reaches the next stage in its life cycle. Therefore, larvae do not, in themselves, pose a threat to humans or their pets.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

111. Most larvae, after feeding, drop off their hosts and molt, or transform, into nymphs in the fall. The nymphs remain inactive throughout the winter and early spring. In May, nymphal activity begins. Host-seeking nymphs wait on vegetation near the ground for a small mammal or bird to approach. The nymph will then latch on to its host and feed for 4 or 5 days, engorging with blood and swelling to many times its original size. If previously infected during its larval stage, the nymph may transmit the Lyme disease spirochete to its host.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

112. If not previously infected, the nymph may become infected if its host carries the Lyme disease spirochete from previous infectious tick bites. In highly endemic areas of the northeast, 25% of nymphs have been found to harbor the Lyme disease spirochete.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

113. Too often, humans are the hosts that come into contact with infected nymphs during their peak spring activity (late May through July). Although the nymphs' preferred hosts are small mammals and birds, humans and their pets are suitable substitutes. Because nymphs are about the size of a poppy seed, they often go unnoticed until fully engorged, and are therefore responsible for the majority of human Lyme disease cases.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

114. Once engorged, the nymph drops off its host into the leaf litter and molts into an adult. These adults actively seek new hosts throughout the fall, waiting up to 3 feet above the ground on stalks of grass or leaf tips to latch onto deer (its preferred host) or other larger mammals (including humans, dogs, cats, horses, and other domestic animals).

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Deer Tick

115. In the US, the _____ tick prefers to feed on dogs in all stages. However, it will feed on other mammals, including domestic animals and humans. This is most likely to occur if it can't find a dog nearby, so beware of trying to control the tick by removing the dogs!

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

116. Ixodid ticks require three blood meals to complete development; once each as a larva, nymph and adult.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick

117. The _____ tick is a 3-host tick; this indicates that it leaves the host to develop and molt between the larval, nymphal and adult stages. Each stage must locate a host; in a domestic environment this may result in feeding on the same dog (if there is only one or a few dogs present), but there is an opportunity for the same tick to feed on three different hosts.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

118. A fully blood-fed female _____ tick can lay up to 5000 eggs; the number of eggs laid depends on the size of the tick and the amount of blood she ingested. The length of time each stage feeds, and the time required for development and molting, are very dependent on temperature.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

119. Feeding and development times are generally faster at warmer temperatures. Survival is generally higher at cooler temperatures and higher relative humidity, but these ticks are tolerant of a wide range in conditions.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

120. Peak activity for adult deer ticks occurs in late October and early November. Of adults sampled in highly endemic areas of the northeast, 50% have been found to carry the Lyme disease spirochete.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

121. As winter closes in, adult ticks unsuccessful in finding hosts take cover under leaf litter or other surface vegetation, becoming inactive in temperatures below 40 degrees F. Generally, winters in the northeast and upper mid-west are cold enough to keep adult ticks at bay until late February or early March when temperatures begin to rise.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

122. This second activity peak typically occurs in March and early April. Adult female ticks that attach to deer, whether in the fall or spring, feed for approximately one week. Males feed only intermittently. Mating may take place on or off the host, and is required for the female's successful completion of the blood meal.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

123. The females then drop off the host, become gravid, lay their eggs underneath leaf litter in early spring, and die. Each female lays approximately 3,000 eggs. The eggs hatch later in the summer, beginning the two-year cycle anew.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

124. ***Ornithodoros spp.***

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

125. This is the most important genus of soft ticks from a medical standpoint.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Relapsing Fever Tick

126. _____ ticks are seldom seen by the average person because they are nest ticks and can survive starvation for months or even years.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

127. Bitten people may contract relapsing fever.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

128. ***Dermacentor albipictus***

- A. Winter Tick
- B. Rodent Tick

129. This one host tick is found throughout North America. It is widely distributed throughout California, but populations are concentrated around the central coastal and sierra foothill areas. It primarily feeds on horses and deer from fall through early spring.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

130. Heavy infestations of horses may cause emaciation and anemia.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick

131. After hatching from the egg, larvae attach to a host, feed and detach, remaining on the animal. Subsequently, they molt to the nymphal stage, resume feeding and detach again. After they develop into adults and feed once again, they drop to the ground and lay their eggs, where the cycle begins once again.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick

132. *Dermacentor occidentalis*

- A. Pacific Coast Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick

133. The _____ Tick is a three host tick which commonly feeds on rodents, especially squirrels, as subadults, and on cattle, horses, deer, and humans as adults.

- A. Pacific Coast Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

134. This is one of the most widely distributed ticks in California. It is found throughout the state except for the very dry regions of the central valley and the southeastern desert region. The only other areas it has been collected in are Oregon and Baja, Mexico.

- A. Pacific Coast Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

135. The tick has two or three nymphal stages before molting to the adult stage. Like the relapsing fever tick, this tick may live for months or years without a blood meal.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

136. *Argus persicus* readily attacks humans but does not transmit human disease. It is a vector of fowl spirochaetosis.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

137. The fowl tick also is known as the "**blue-bug**".

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick

138. It is a parasite of poultry, with sucking mouthparts concealed on the underside of the body. It is a member of the soft tick family and, unlike hard ticks, has no hard plate over the body.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

139. Mature _____ ticks are 1/4 to 3/8 inch long.

- A. Winter Tick
- B. Fowl Tick
- C. Relapsing Fever Tick

140. *Otobius megnini*

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

141. This soft tick gets its name from the habit of larvae and nymphs to infest the ears of cattle, horses, mules, etc., and occasionally people.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

142. This is a 1-host tick.

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

143. Larvae crawl up on vegetation, and after finding a host, move to the animal's ear. Both the larvae and nymphs feed in the ear which, because of irritation and secondary infections, causes a condition called "**canker ear**".

- A. Winter Tick
- B. Rodent Tick
- C. Spinose Ear Tick
- D. Fowl Tick
- E. Relapsing Fever Tick

144. *Ixodes scapularis*

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

145. The _____ is found in eastern North America including the New England, mid-Atlantic, and southeastern states, and the Midwestern states of Minnesota and Wisconsin. It has also been observed in Michigan, Iowa, Illinois, and Indiana.

- A. Rocky Mountain Wood Tick
- B. Deer Tick

146. _____ prefer heavily-forested or dense brushy areas and edge vegetation, but not open areas. An exception to this occurs in upstate New York where the species is found on well-maintained lawns in residential areas.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Deer Tick

147. Larvae and nymphs feed primarily on small mammals (especially the white-footed mouse, other rodents, and insectivores), and also on birds, dogs, deer, and humans. Nymphs aggressively bite humans.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

148. Adults feed primarily on deer, but also attach to large mammals (foxes, raccoons, opossums, dogs) and humans.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

149. Females lay up to 3000 eggs in soil and litter. Eggs take about 1 month to hatch. Larvae engorge for 2-3 days during the summer, detach, overwinter on the ground, and molt the following spring. Nymphs feed for 3-4 days, detach, and molt in early fall. Adult females engorge for 7-21 days, detach, oviposit the following spring, and die.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

150. The _____ is the major vector of Lyme disease in the northeastern and Midwestern United States.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. American Dog Tick
- D. Brown Dog Tick
- E. Deer Tick

151. It is incriminated as the vector of human Babesiosis in the northeastern United States.

- A. Rocky Mountain Wood Tick
- B. Deer Tick
- C. American Dog Tick

152. Larvae and nymphs typically become infected with Lyme disease bacteria when they feed on infected white-footed mice (*Peromyscus leucopus*), chipmunks (*Tamias striatus*), or certain species of birds. This mouse is the principal source (reservoir) of *B. burgdorferi* and the protozoan agent of human babesiosis in the east.

- A. Rocky Mountain Wood Tick
- B. Lone Star Tick
- C. Deer Tick

Medical Effects of Ticks

153. Ticks may cause _____ in humans that is reversible when the ticks are removed.

- A. Q Fever
- B. Babesiosis
- C. Paralysis
- D. Relapsing Fever
- E. None of the Above

154. Symptoms include paralysis of the arms and legs, followed by a general _____ which can be fatal if not reversed. The victim may recover completely within a few hours of the removal of the tick.

- A. Q Fever
- B. Babesiosis
- C. Paralysis
- D. Relapsing Fever
- E. None of the Above

155. The _____ may be caused by a salivary toxin transmitted to humans when a tick feeds.

- A. Q Fever
- B. Babesiosis
- C. Paralysis
- D. Relapsing Fever

156. Tick _____ is frequently associated with the attachment of the tick at the base of the victim's skull; however, the illness occurs from attachment to other parts of the body as well.

- A. Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

157. The highest incidence of tick _____ in North America occurs near the border of British Columbia, Canada, and the northwestern United States.

- A. Mountain Spotted Fever
- B. Ehrlichiosis
- C. Paralysis

158. The two most important tick-borne diseases in the United States are Lyme disease and _____.

- A. Rocky Mountain Spotted Fever
- B. Tularemia and Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

159. The onset of _____ is usually characterized by the development of a large, red rash which may develop a characteristic clear central area ("**bull's eye**"), one to two weeks after a tick bite, often in the area around the puncture. Other symptoms include joint pains, flu-like symptoms, and neurological or cardiac problems.

- A. Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

160. The most characteristic symptom of _____ is a rash on the ankles, wrists, and forehead one to two weeks after the victim is bitten. The rash spreads to the trunk and is accompanied by fever, chills, and prostration.

- A. Rocky Mountain Spotted Fever
- B. Tularemia and/or Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

161. Both Lyme disease and _____ are transmitted after the tick feeds for several hours. Prompt removal of attached ticks greatly reduces the chances of infection.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

162. Another important tick-borne disease is endemic _____. This disease is limited to the western states and is caused by a spirochaete carried by certain ticks in the genus *Ornithodoros*. These ticks are found on tree squirrels (*Sciurus* spp.) and western chipmunks (*Eutamias* spp.).

- A. Rocky Mountain Spotted Fever
- B. Tularemia and/or Lyme Disease
- C. Colorado Tick Fever
- D. Relapsing Fever

163. _____ (transmitted by the bite of a tick) is caused by a spirochete, a corkscrew-shaped bacterium which can travel through the bloodstream. The disease is easily diagnosed and treatable in an overwhelming majority of cases.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis

164. Early symptoms of _____ can be mild and easily overlooked.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

165. A reddish rash called erythema migrans occurs 60-80% of the time, most often at the site of the bite. Flu-like symptoms, chills, fever and fatigue are often experienced, but they may not seem serious enough to require medical attention. Later symptoms may include severe headaches, arthritis and nervous system or cardiac abnormalities.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

166. Because it takes 24-48 hours for a feeding tick to transmit the _____ bacteria, examine yourself and your children while outdoors, when you get home, and again at night.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis

167. Mouth parts of adult ticks may sometimes remain in your skin, but these will not cause _____. After removal, apply an antiseptic such as alcohol or an antibiotic ointment. Do not apply mineral oil, petroleum jelly, heat, or anything else to remove the tick.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis

168. Redness at the site of a tick bite does not mean you are infected - a true _____ rash usually lasts 2-3 weeks and often increases in size during that time.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

169. _____ is most effectively treated when diagnosed early.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

170. Most patients who are treated for 3 - 4 weeks with a standard antibiotic such as amoxicillin or doxycycline completely recover from _____.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

171. You **CAN** get _____ more than once.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

172. The Urine Antigen Test is NOT an acceptable test for diagnosing _____.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

173. An estimated 75% of _____ cases are contracted around the home.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Relapsing Fever

174. In most cases, a tick must be attached for at least 48 hours to transmit _____.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever

175. It's not the tick you remove that is likely to give you _____, it's the one you never find.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Colorado Tick Fever
- D. Ehrlichiosis

176. _____ is an intraerythrocytic parasitic infection caused by protozoa of the genus Babesia and transmitted through the bite of the Ixodes tick.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

177. The disease most severely affects patients who are elderly, immunocompromised, or have undergone splenectomy. _____ is usually an asymptomatic infection in healthy individuals.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

178. The parasite only infects red blood cells (**RBCs**). This significantly affects the hematological system, causing hemolytic anemia, thrombocytopenia, and atypical lymphocyte formation. Alterations in RBC membranes cause decreased conformability and increased red cell adherence, which can lead to development of acute respiratory distress syndrome (**ARDS**) among those severely affected.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

179. In the US: _____ is limited to those who live in, or have recently traveled to, the northeastern United States. Few cases have been reported in California, Washington, Wisconsin, and Georgia.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

180. Hundreds of cases have been reported since the first domestic case of human _____ was reported in 1966. An increasing trend over the past 30 years may be the result of restocking of the deer population, curtailment of hunting, and an increase in outdoor recreational activities.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis

181. Internationally: _____ in Europe, caused by a different species of Babesia, is a more devastating disease. Although rare, it is symptomatic and often fatal.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis

182. _____ in Europe is also seen in patients who have undergone splenectomy.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

183. Approximately 25% of patients with _____ are co-infected with Lyme disease. These patients experience more severe symptoms for a longer duration than those with either disease alone.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

184. In Europe, _____ is a life-threatening disease.

- A. Rocky Mountain Spotted Fever
- B. Lyme Disease
- C. Babesiosis
- D. Ehrlichiosis
- E. Relapsing Fever

185. _____ is a bacterial disease associated with both animals and man. Although many wild and domestic animals have been infected, the rabbit is most often involved in disease outbreaks.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

186. _____ in humans is relatively rare.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

187. Hunters or other people who spend a great deal of time out of doors are at a greater risk of exposure to _____ than people with other occupational or recreational interests. Other groups at increased risk include veterinarians and those working with birds of prey (by handling rabbits as food for the bird).

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever

188. Many routes of human exposure to _____ are known to exist. The common routes include inoculation of the skin or mucous membranes with blood or tissue while handling infected animals, bites from infected deer flies or ticks, or handling or eating insufficiently cooked rabbit meat. Less common means of spread are drinking contaminated water, inhaling dust from contaminated soil or handling contaminated pelts or paws of animals.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever

189. The symptoms of _____ are varied and depend upon where the organism enters the body. When it enters through the skin, tularemia can be recognized by the presence of a lesion and swollen glands. Ingestion of the organism may produce a throat infection, intestinal pain, diarrhea and vomiting. Inhalation of the organism may produce a fever alone or fever combined with a pneumonia-like illness.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever

190. Certain antibiotics such as streptomycin are effective in treating _____. Others such as gentamycin and tobramycin have also been reported to be effective.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

191. Currently, three species of Ehrlichia in the United States and one in Japan are known to cause disease in humans; others could be recognized in the future as methods of detection improve.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

192. In 1953, the first _____ pathogen of humans was identified in Japan. Sennetsu fever, caused by Ehrlichia sennetsu, is characterized by fever and swollen lymph nodes. The disease is very rare outside the Far East and Southeast Asia, and most cases have been reported from western Japan.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

193. In the United States, human diseases caused by _____ species have been recognized since the mid-1980s. The ehrlichioses represent a group of clinically similar, yet epidemiologically and etiologically distinct, diseases caused by Ehrlichia chaffeensis, E. ewingii, and a bacterium extremely similar or identical to E. phagocytophila.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

194. Human _____ due to Ehrlichia chaffeensis was first described in 1987. The disease occurs primarily in the southeastern and south central regions of the country and is primarily transmitted by the lone star tick, Amblyomma americanum.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

195. _____ is an illness caused by a virus carried by small mammals, such as ground squirrels, porcupines, and chipmunks, and by ticks.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever

196 Anyone can get _____ who lives or travels in areas of the western United States and Canada at elevations above 5000 feet and who comes in contact with infected ticks, especially *Dermacentor andersoni*, also known as the wood tick.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

197. People get _____ from a tick bite. There is no evidence of natural person-to-person transmission. However, rare cases of transmission from blood transfusions have been reported. The virus which causes _____ may stay in the blood for as long as 4 months after onset of the illness.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

198. The disease causes fever of about 103° F., chills, nausea, and severe headache. These symptoms usually last a few days, go away, and then return for a few days. Sometimes the symptoms include a red, raised rash.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

199. The symptoms generally begin 4 to 5 days after being bitten by an infected tick.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Paralysis

200. _____ is a zoonotic disease caused by *Coxiella burnetii*, a species of bacteria that is distributed globally.

- A. Rocky Mountain Spotted Fever
- B. Tularemia
- C. Colorado Tick Fever
- D. Ehrlichiosis
- E. Q Fever

When finished, please e-mail the answers and registration form to info@tlch2o.com or fax to (928) 272-0747. If you paid on the Internet, please write your customer number on your registration form.

If you need your material graded and sent back to you within 48 hours, add a \$50.00 rush fee, this fee may not cover the postage charges.