

PESTICIDE APPLICATION CERTIFICATION
Industrial, Institutional, Structural and Health Services Pest Control
category

REVIEW QUESTIONS with ANSWERS

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| 1. In which particularly sensitive areas must pesticide applicators take special care? | Food handling establishments and areas where young, elderly or ill persons are located. |
| 2. Why would applicators certified in this category need to be more mindful of their actions than applicator certified in other categories? | Because they have much closer contact with the public than any others. |
| 3. Which are the 5 common cockroach species in the Virgin Islands? | American, Australian, German, Brown-banded and oriental cockroaches. |
| 4. Which 3 species are particularly common? | American, brown-banded and German cockroaches. |
| 5. Which is the largest cockroach species? | American cockroach. |
| 6. Which cockroach species has yellow markings on the thorax and front wings? | Australian cockroach. |
| 7. What application treatments can be used for cockroach control in general? | Crack and crevice treatment and spot treatment. |
| 8. What application treatment may be used in food-handling areas? | Crack and crevice treatment. |
| 9. What is an important first step in cockroach control? | Sanitation. |
| 10. How does this non-chemical method help in reducing cockroach populations? | By destruction of breeding sites and removal of water and food sources. |
| 11. Which cockroaches have mottled wings? | Brown-banded cockroaches. |

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| 12. Which cockroach species flies readily when disturbed? | Brown-banded cockroaches. |
| 13. Which cockroach species has black stripes on the back? | German cockroach. |
| 14. Which cockroach is particularly common in kitchens and bathrooms? | German cockroach. |
| 15. Which cockroach has short or no wings? | Oriental cockroach. |
| 16. What is the best approach toward ant control? | Control of the nest. |
| 17. In colonies of which insects are most individuals wingless? | Ants and termites. |
| 18. Which home pest species are always wingless? | Fleas and bedbugs. |
| 19. Which three characteristics distinguish the winged stages of ants from winged termites? | Ants have narrow 'waists', termites none; ants have four clear wings with front wings longer than hind wings, termites have four milk-colored wings of equal length; ants have elbowed antennae, termite have straight antennae. |
| 20. Which are the most common indoor ant species? | Thief ant, pharaoh ant, odorous house ant and crazy ant. |
| 21. Which are the most common outdoor ant species? | Carpenter ant, fire ant and acrobat ant. |
| 22. a. What are indications of the presence of carpenter ants? b. How can they be controlled | Piles of sawdust Blow pesticide dust in nesting area or holes. |
| 23. How can ant mounds be treated? | Applying emulsion or granules directly to the nest and surrounding area. |

24. Why can ants be problems in houses built on slabs? They may nest under slabs and enter through cracks and utility openings.
25. What is a good way of controlling ants gaining entry into a house? Applying insecticide where ants gain entry or closing any gaps with caulking.
26. How may hymenopterous insects be harmful to people? By being a nuisance and by stinging.
27. Which sex of these insects is the greatest nuisance? Female.
28. Why do bees sting persons and animals? To defend their nest.
29. What type of insect is *Polistes*? A wasp.
30. What do *Polistes* and hornet have in common? How do they differ? They both make paper nests above ground. *Polistes* makes single comb nests while hornets make large complex nests.
31. Where do yellow jackets nest? In the soil.
32. Where do mud daubers nest and what do their nests look like? Particularly under eaves of buildings; their nests are made of mud and look like cylinders.
33. In what way in addition to stinging may bees be nuisances in a house? They may build their combs in walls and other parts of a house where they may become infested with other insects or melt and ruin interiors.
34. Where do carpenter bees nest? In exposed wood of buildings and dead trees.
35. What is peculiar about location of a carpenter bee's nest? It is accessible through a tunnel after this makes a 90° turn.
36. How can you distinguish carpenter bees from bumble bees? Bumble bees have yellow hair on the back of their abdomen while the top of a carpenter bee's abdomen is bare.

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| 37. When is the best time to control bees and wasps? | After dark. |
| 38. What is an effective way of controlling yellow jackets? | Blowing insecticidal dust in the nest opening. |
| 39. What is an effective way of controlling mud daubers? | Removing the entire nest. |
| 40. Where do bedbugs live during the day? | In cracks and crevices. |
| 41. What do bedbugs and fleas have in common? | Neither have wings in any life stage and both are flattened insects which feed on blood. (However, bedbugs are dorsoventrally flattened, i.e. as if they were stepped on, and fleas are laterally flattened, i.e. as if they were caught between two vehicles.) |
| 42. What type of pesticide application is helpful in bedbug control? | Application of residual sprays. |
| 43. Which fleas are the most common? | Cat and dog fleas. |
| 44. What action may cause an increase in human attacks by fleas? | Removing pets from the household. |
| 45. In addition to sucking blood what problem may fleas cause to dogs? | Act as intermediate host for the dog tapeworm. |
| 46. What two methods have to be used together for permanent flea and tick control? | Treatment of the infested animals and treatment of the premises. |
| 47. Which two species of tick are the most serious pests? | Brown and American dog ticks. |
| 48. Which is the principal host of fleas and ticks? | Dog. |
| 49. Where may ticks go once they leave the host animal? | In any available hiding place like moldings, window frames, base boards, paintings, etc. |

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| <p>50. In addition to sucking blood what problems may ticks cause?</p> <p>51. Where should tick control efforts be centered?</p> <p>52. What makes control difficult?</p> <p>53. What is the best approach towards mosquito control?</p> <p>54. How do millipedes and centipedes differ?</p> <p>55. What is the best way of controlling invasion of houses by millipedes and centipedes?</p> <p>56. Why are flies important pests?</p> <p>57. a. Which are the most common fly species in the Virgin Islands? b. What are some of the differences between these two fly species?</p> <p>58. Which three methods need to be combined for adequate control?</p> <p>59. Which insects are wingless and have three tail-like structures at the end of their bodies?</p> <p>60. What size are psocids?</p> <p>61. What do book and bark lice eat?</p> <p>62. Do booklice always require control measures?</p> | <p>May carry several disease causing organisms to both man and animals.</p> <p>Indoors.</p> <p>The many hiding places.</p> <p>Wide-scale community-based treatment.</p> <p>Millipedes have two pairs of legs per body segment, move slowly and are cylindrical; centipedes have one pair of legs per segment, move fast and are flattened.</p> <p>Removal of leaves, compost and general refuse from around buildings and sealing cracks and other openings.</p> <p>They are nuisances and are carriers of disease causing organisms.</p> <p>Housefly and black blow fly.</p> <p>The housefly is dull and has four stripes on its thorax while the black blow fly is uniformly, shiny black.</p> <p>Sanitation, use of screening and use of insecticides.</p> <p>Silverfish.</p> <p>Less than 2 mm long.</p> <p>Molds and other fungi.</p> <p>Not when present in small numbers.</p> |
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63. What sprays are best to control booklice and spiders? Residual sprays.
64. a. Which spider is the most injurious? Black widow spider.
b. Where does it live? In undisturbed situations such as under rocks and boards in and around buildings.
65. What is the main reason that spiders are considered pests? They are nuisances.
66. What objects sustain the greatest damage by clothes moths and carpet beetles? Woolen products, furs, feathers and hair.
67. Which stage in the clothes moth's and carpet beetle's life cycle is the most damaging? The larval stage.
68. What color are adult carpet beetles? Shiny black.
69. Which pest species has larvae with a long brush of tail bristles? Carpet beetle.
70. Which adult moth pest has three dark spots on its fore wing? Case making clothes moth.
71. How do the clothes moth and the case making moth differ? The clothes moth spins feeding tunnels of silk while the case making moth rarely spins webbing but makes a small silken cell.
72. What is the best approach towards control of clothes damaging pests? Prevention by proper cleaning and storage.
73. Which three castes are present in colonies of many termite species? Reproductives, soldiers and workers.
74. Which caste is responsible for damage. The worker caste.
75. Which caste has wings? The reproductives.

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| 76. Where do most subterranean termites live? | Below ground. |
| 77. How do subterranean termites get to their food sources | By eating into wood which is in direct contact with the soil or by building shelter tubes from the soil to the wood. |
| 78. What provides subterranean termites with food and moisture? | Food is provided by the wood, moisture by the soil. |
| 79. Where do drywood termites obtain their food and moisture? | Food from wood and moisture from wood and air. |
| 80. Where do drywood termites make their nests? | Inside wood. |
| 81. How can the presence of subterranean and drywood termites be determined? | By probing suspected wood with a hard instrument, subterranean termites also by the presence of their shelter tubes and drywood termites also by the presence of excretal pellets. |
| 82. What color do excretal pellets of drywood termites have? | Depends on the type of wood they are eating. |
| 83. What is the principle of subterranean termite control? | Breaking the connection between soil and wood. |
| 84. How can subterranean termite control be achieved? | Providing a mechanical or chemical barrier. |
| 85. Where should termiticides be applied? | On both sides of foundations and all soil surrounding building supports. |
| 86. How can termiticides be applied? | By trenching or rodding. |
| 87. How are slab-based buildings treated? | Drilling holes through the slab and injecting the termiticide through the holes. |
| 88. How can drywood termites be controlled? | By fumigating the entire structure or dusting/injecting termiticide into excavated chambers. |

89. What are lyctid and anobiid beetles? Powderpost beetles.
90. How can their presence be determined? Surfaces of infested wood is perforated and slight jarring of wood causes fine powder to come out of these holes.
91. How can they be controlled? By spraying infested wood with residual insecticide and/or fumigation.
92. What distinguishes long-horned beetles from most other insects? Antennae which may be longer than the body.
93. Which long-horned beetle species will attack timber in buildings? Old-house borer.
94. What conditions are needed for wood to become infected with wood-decay fungi? Contact with moist soil, rain or condensation.
95. What effect do these fungi have on the wood? Reduce its strength and make it brown and crumbly.
96. How useful are fungicides in controlling wood-decay fungi? Fungicides are not useful since they will not stop the decay.
97. When should wood be treated with preservatives? After the wood has dried and especially when the wood will be used in places where moisture will be a chronic problem.
98. In which two principal ways do stored product pests do their damage? By feeding on the stored products and by contaminating it with excrement.
99. What is the main approach towards control of stored product pests? Thorough cleaning of the area of infestation and use of residual sprays.
100. Which grain and flour beetles are the most common? Cigarette and drugstore beetles.
101. What distinguishes the saw-toothed beetle from all others? Six pointed teeth on each side of the thorax.
102. How long are the grain and flour beetles? Less than 3 mm.

103. Which are the two most common grain weevils? Rice and granary weevil.
104. How many legs do grain weevil larvae have? None
105. The larvae of which stored product pest web together the material they feed on? Indian meal moth.
106. What do the Angoumois grain moth and the clothes moth have in common? Size and color.
107. How do the Angoumois grain moth and the clothes moth differ? The Angoumois grain moth flies during the day time, the cloth moth flies at night.
108. Which two rat species are present in the Virgin Islands? Roof rat and Norway rat.
109. How do the two rat species differ? Roof rats are more slender than Norway rats; Norway rats have small ears and their tails are shorter than head and body length combined while roof rats have large ears and their tails are longer than head and body length combined.
110. What is the most important thing to know for successful control of rats? Rat behavior.
111. What is the most important non-rodenticide approach to rat control? Removal of food, water and shelter sources.
112. How high can a rat jump? 1 meter.
113. What is the smallest size hole rats can pass through? 15 mm.
114. What is the smallest size hole mice can pass through? 8 mm.

115. Which two characteristics of baits and bait use are important in their effectiveness? Attractiveness and proper placement.
116. What two types of baits are commonly used? Single dose and multiple dose (anticoagulant) poisons.
117. What is bait shyness? The tendency to stay away from baits after initial contact because of some degree of repellency or lack of attractiveness.
118. How long will it take for baits to take effect? Single dose baits within 24 hours, multiple dose baits between 3 and 14 days.
119. When is prebaiting with unpoisoned food beneficial? When using single dose baits to attract the animals to the site.
120. Where and how should snap traps be placed? Along and perpendicular to rat runways.
121. How can rat burrows be treated? By using poisonous gases.
122. Why can mice cause greater damage than rats? They are less conspicuous than rats and, therefore, are noticed later and because they nibble rather than eat entire pieces of food.
123. How do mice differ from rats? Mice have a much smaller range than rats; feet and eyes of mice are small, those of rats are large.
124. How close should mice baits and traps be placed to each other? No more than 3 meters.
125. Which pigeons may be controlled? Common pigeon.
126. Why are pigeons pests? They are nuisances and may damage field crops.

127. What diseases may they carry? Ornithosis, encephalitis, toxoplasmosis, Newcastle disease, salmonellosis, pseudo-tuberculosis and various endoparasites.
128. What disease are associated with their droppings? Aspergillosis, histoplasmosis and cryptococcus.
129. What pigeon control measures can be taken? Removal of food, water and shelter, if possible; use of screening, chemical and physical barriers to make roosts untenable or inaccessible; trapping; shooting; poisoning/repelling.
130. What do most bats eat? Insects.
131. When are bats considered pests? When they roost in and around buildings and odor and noise become a nuisance and when droppings become a health hazard.
132. What is the best approach toward bat control? Batproofing premises with screening and caulking.
133. Why are mongooses pests? They are a menace to poultry, ground nesting birds and other native fauna.
134. Which chemical control methods are available for mongoose control? None.
135. Which non-chemical mongoose control methods are available? Protective netting for poultry and spring traps.